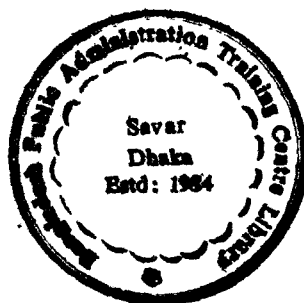


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10 AUG 2006 **REPORT**
OF THE
COMMISSION ON NATIONAL
EDUCATION

FUMIGATED
DATE 30/1/93

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

وَمَنْ يُؤْتَ الْحِكْمَةَ فَقَدْ أُوتِيَ خَيْرًا كَثِيرًا

"And he unto whom wisdom is given, he truly hath
received abundant good."

.(Quran, 11, 269)

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PREFACE

The Work of the Commission:

1. The Commission on National Education was appointed by a Resolution adopted by the Government of Pakistan on the 30th December, 1958. The composition of the Commission, the Directives given to it and its terms of reference will be found in the full text of the Resolution.

2. The Commission was inaugurated by the President of Pakistan, General Mohammad Ayub Khan, on January 5, 1959. Addressing the members of the Commission on this occasion, the President stressed the need for a reorganization and reorientation of the existing educational system so as to evolve a national system which would better reflect our spiritual, moral and cultural values. At the same time he said the system should meet the challenge of the growing needs of the nation by assisting development in the fields of agriculture, science and technology. Above all, he said, our educational system should aim at character building and the pursuit of quality as well as at inculcating a sense of the dignity of labour. The President asked the Commission to suggest measures for making the best possible use of its available human and national wealth. He urged that attention be paid to national co-ordination of the work of our universities in different fields, and to a system of selective admission to them, based on aptitude and ability. Any such scheme would, however, have to ensure that the poor student was assisted in continuing his studies. In framing its proposals he asked the Commission to keep in mind the limited resources of the country.

3. The Commission records its thanks to the President for the inspiration he has given to it and his continued interest in its work.

4. Immediately after this inaugural meeting the Commission formally began its task and considered its programme of work. An exhaustive questionnaire covering all aspects of education at its various levels and in its various forms was distributed widely to institutions and individuals throughout Pakistan and was reproduced in the Press. The response to this was excellent within the very brief time-limit allowed. In addition many individuals voluntarily submitted detailed memoranda concerning particular aspects of our education system. These replies and memoranda contained many valuable suggestions and ideas, several of which are reflected in the chapters which follow. The Commission expresses its thanks to all who contributed to its work in this way.

5. During the months of February to April the Commission met educationists and leading public figures in East and West Pakistan and in the Karachi Federal Area and discussed with them the needs and problems of our educational system. So far as was possible and relevant the Commission held these discussions in educational institutions so that it could meet their staffs and inspect their facilities. From May to August the Commission discussed and adopted its report.

6. To reach a harmony of views on such a complex issue as education, it was necessary for the members of a Commission like ours to live, discuss and think together, listening to many points of view, sifting these

and absorbing some into its own corporate thinking. This is the procedure which our Commission has followed, and it is a process which has been found most helpful in arriving at our conclusions.

7. Education, however, is a dynamic process whose needs and problems evolve and shift, reflecting the evolution, changing demands, and aspirations of the society and individuals it serves. But educators are reputed to have set views, little inclined to depart from convictions which have grown out of their experience. In order to assist it in looking afresh at our educational system, at its weaknesses and strengths, the Commission invited four distinguished educators to participate in some of its debates. Two of these: Dr. Herman B. Wells, President of Indiana University, Bloomington, USA, and Dr. John C. Warner, President, Carnegie Institute of Technology, Pittsburgh, USA—brought not only a deep knowledge of education but also the advantage of a fresh and dispassionate outlook. Two were eminent Pakistani scholars, now teaching in universities abroad—Dr. I. H. Qureshi, Visiting Professor of History, Columbia University, New York, and Dr. Abdus Salam, Professor of Applied Mathematics, Imperial College, London. Dr. Qureshi and Dr. Salam were able to look at our problems not only with expert knowledge but also with understanding of such problems in foreign countries. The Commission records its deep gratitude to these educators for their participation in its work.

8. An educational system must not only respond satisfactorily to local needs but compare favourably with other systems. To assist it in making these comparisons the Commission requested a number of people to work as consultants and to prepare documentary evidence and secure data. For this work our special thanks are due to those who laboured at these tasks.

9. The work of the Commission has been greatly helped by the generosity of the Ford Foundation in making consultant services available to it and in giving valuable material assistance. This aid is most warmly acknowledged, as is the continued and sympathetic co-operation of the resident representative of the Foundation.

10. We gratefully record also our thanks to UNESCO for its assistance in securing information on overseas practices and for the services the members of its Secretariat have rendered to the Commission.

11. The Commission expresses in addition its sincere thanks to the many distinguished educators, representatives of industry and commerce, high officers of the civil and defence services, and leading personalities of public life, who, by their valuable advice, have contributed to its work.

The Nature of the Report :

12. The preamble to the Resolution creating the Commission states : "Whereas the existing educational system of Pakistan is not adequate to meet the needs and requirements of the nation, it has become necessary to set up a competent body to review, in consonance with the aspirations of the people and the socio-economic structure of the country, the educational system and to recommend appropriate measures for its re-orientation and re-organisation for the purpose of ensuring an integrated and balance development of education in various stage".

13. The educational system of Pakistan has, since Independence, been the subject of critical appraisal on numerous occasions. In 1947 the Pakistan Educational Conference made comprehensive suggestions regarding the development of education in this country as did the 1951 Educational Conference and the 1957 Educational Reforms Commission for East Pakistan. In addition, comprehensive reviews of the situation and proposals for development were given in the Six-Year National Plan for Educational Development (1952) and in the chapter on Education and Training in the First Five-Year Plan. There are, as well, the many recommendations of the Advisory Board of Education, the Council of Technical Education, and the Inter-University Board. The Pakistani system of schooling has also been the subject of appraisal and proposals for reform by numerous foreign missions and experts, and Pakistani educators have benefited from participation in many international conferences, seminars, and meetings of experts.

14. The recommendations of all these bodies and individuals were before the Commission, along with reports on current educational reform movements in other countries and material on the economic and social needs of our country. The above body of material has been of great help to us in arriving at our conclusions.

15. A high level of agreement regarding the basic weakness and failings of our present system of education exists in the above material, in the views expressed before the Commission, in the replies to the questionnaire and in memoranda submitted. We introduce our report with an attempt to match the values and aspirations of our society with the role and the objectives which, in the Commission's view, this system should now attempt to meet. The chapters which follow present a body of recommendations which, we believe, will effect the desired reorientation and meet national needs and aspirations in accordance with available resources.

16. In view of the short time given to the Commission to complete its work, the complexity and range of the problems examined, and the existence of a large body of literature on the subject, the Commission has limited itself to dealing with general policy matters only, selecting those which seemed most crucial in the light of present difficulties and national needs. The Report does not pretend to be a scholarly work on education nor does it claim to have dealt with or solved all of our educational problems. It has only tried to indicate what are the weaknesses and deficiencies of our educational system and how these can be removed. Its recommendations are meant to serve as a base on which our educational system can be soundly built. Where it was felt to be relevant, machinery for the implementation of the recommendations has been suggested.

17. It is in the nature of things that each man should hold some specific views on education, for it directly concerns him or his children. While all, or nearly all, agree as to present failings, there is a divergence of views regarding how these can be remedied. The Commission has attempted to recommend those measures which would best ensure the implementation of its directives, and which at the same time seemed most realistic and attainable.

Signed S. M. Sharif (*Chairman*).

Signed Mumtazuddin Ahmed.

„ M. Raziuddin Siddiqi.

„ B. A. Hashmi.

„ M. K. Afridi.

„ R. M. Ewing.

„ S. Hamid Shah.

„ Mohammad Khan.

„ A. F. M. Abdul Haq.

„ M. A. Rashid.

„ A. F. Atwar Husain.

INTRODUCTION

I. Public Duty and Private Attitude :

The Commission on National Education has been given the task of suggesting ways in which education in Pakistan might be given a new orientation to fit the needs and aspirations of our people. To approach this task we have had to think beyond the walls of our schools and universities and beyond the offices of our educational administrators to the society of which education is a part and to the future of this society which it should help shape. We have assumed that the educational system of a nation should be consonant with the country's self-image; that is should be, in form and content, consistent with the hopes and aspirations the country holds for itself; indeed, that it is the medium through which these aspirations come to be realized.

2. It is, however, a regrettable fact that our conduct is not always in conformity with our aspirations or is often in conflict with our professed aims. At times these may even be observed to pull against each other and effectively negate the possibility of progress. The education our children and young people receive at school and college contributes largely to the formation of the attitudes they carry over into public life. Before proceeding to a discussion of the objectives we feel our educational system must pursue, it will be useful to analyse the prevalent attitudes to nation-building and public service and, on the basis of this analysis, to attempt to define what corrective measures need to be taken.

3. The pattern of attitudes and values current in our society to-day can be best understood by a consideration of the more recent history of our people and of the environment and circumstances in which our public life has developed in the last century or so. We shall find that it is the persistence of a historical pattern, no longer appropriate to the circumstances in which we find ourselves to-day, that has thwarted all our efforts at nation-building.

4. During the early period of foreign rule the attitude of the government to the people was one of paternalism, while that of the people towards government was one of passive submission. The people looked to the State for the satisfaction of all their needs. Government built roads and schools, maintained law and order, and dispensed justice. In return it expected from the people obedience, co-operation, and the performance of the tasks assigned to them. Initiative was seldom expected or encouraged, and the relationship between government and people at this point in history was the impersonal one between ruler and subject.

5. Education in Pakistan has its roots in this period of the history of the sub-continent. The system created then was designed to produce government servants who, under the superior services, operated the State. The range of educational opportunities was limited to those which contributed to the attainment of competence in some of the skills of government.

6. As the various nationalist movements, which reflected the natural aspirations of a subject people to be free, gained strength, the attitude of the people towards government began to change. This political

awakening was followed by a period of unrelenting criticism. Every action of government, whether intrinsically good or bad, met with a storm of protest. Even those measures that were clearly in the public interest, and there were many, felt the sting of aggressive criticism. Government was viewed as an evil, and non-co-operation became the badge of patriotism. Passivity, which before had been an attitude of indifference, was transformed into a weapon of resistance. The goal was independence, the tactics were negativism, and all our attitudes and actions were inspired by the end to be achieved and given form by the means we employed.

7. As a consequence we were left with two unfortunate legacies. The first of these was a lack of acceptance of a recognized authority in public life; the second a spirit of indiscipline among the students.

8. Spurred largely by these movements for freedom and independence, the transfer of power from the British began even before independence became an accomplished fact. During this period we witnessed at times an undignified scramble for position and a tendency to place self before service to the community. The disruptive forces of communalism, regionalism, and provincialism came to the fore in the sub-continent.

9. This brief analysis has identified at least four attitudes towards public order and public service; passivity and non-co-operation; indiscipline and non-acceptance of public authority; placing of self before community; and the disruptive forces of regionalism and provincialism.

10. On the 14th August, 1947, Pakistan became a free and independent nation, fulfilling the noble vision of a national homeland for Muslims of the sub-continent to which so many had pledged and sacrificed their lives and their fortunes. The energy of millions of people turned to the task of building a proud and prosperous nation. For a moment at the dawn of freedom our attitudes changed. People laboured heroically to create those basic institutions which are the *sine qua non* of national existence—government, transportation, communication, housing and schools.

11. Unfortunately, in those hectic days of invention and adaptation there was no opportunity to take the long look, to ask certain questions, or to analyse dispassionately our past experience and our future aspirations. We did not realise then that the attitudes and habits of a hundred years cannot be altered by the scratch of a pen on a document of State. Neither did we comprehend fully that progress and patriotism reflect to a large degree basic attitudes and values. After the first great surge that launched the nation, the magic was gone. Slowly the old attitudes that had been absorbed into the bloodstream of the nation during the past century returned to plague our national life and impede our progress. One by one we witnessed the reappearance of the old attitudes of passivity, indiscipline, opportunism and regionalism.

12. In a situation where the overriding objective is that of nation-building and where there exist these centrifugal forces of regionalism, indiscipline, and non-co-operation, the immense tasks to be accomplished can only be carried out when a strong, dedicated and responsible leadership emerges. Such leadership must come from the highest levels and

~~it must be strong enough~~ to overcome these forces and by its public behaviour change the attitudes behind them. This leadership failed to emerge in our country. Instead we witnessed successive changes in administration and public service.

13. The 12th year of independence, 1958, started amid widespread dissatisfaction with what had been accomplished. As new fields of endeavour were opened up, government was expanded. One did not get the picture of a people imaginatively and energetically working towards the solution of their social and economic problems. Rather it was government that marked the direction and determined the characteristics of the nation's development. Too many of those who were educated in our colleges and universities saw their future only in government service. Too few had the initiative of conceiving and carving out a career outside the protective walls of government. Though the period of foreign rule was past, the concept of a ruling oligarchy persisted in the minds of the people. Everywhere the attitudes and habits that had been forged during an earlier era reappeared in our conduct. The people looked to government for everything. If they wanted a school, they petitioned government to build one. When the streets were dirty, they expected government to clean them. While they urged government to end black-marketing, they shielded the smuggler from the police and purchased his contraband in the bazaar. Criticism became indiscriminate and relentless. Nothing that government did had any merit, and the people were nourished on the old diet of negativism.

14. Under this barrage government was placed on the defensive. Although progress had fallen short of everyone's hopes and expectations, a great deal of good work had been done, and the nation had advanced much farther than the spate of criticism would have indicated. Both within the government and outside it a large number of dedicated men laboured with imagination, integrity, and tireless energy to push forward nation-building projects. Their contribution to our early development should not be under-rated for it was made in the face of great odds, under a stream of criticism, usually without recognition, and often with little co-operation either from their staff or from their superiors.

15. Unfortunately within government itself not enough was done to correct through its own example, the popular misconception of its role in a free society. There was no shift in the attitude of many government workers as we moved from foreign rule to independent status. The realization did not spread through their ranks that they were no longer the functionaries of a foreign power but rather the servants of an independent people. Many officials and clerks attempted to create the impression that the routine performance of their normal duties was, in reality, a personal favour towards anyone who benefited from them. For others, even routine duties were beyond their competence or inclination. They exhibited no sense of duty, no mark of efficiency, no concept of the sacred trust of public office, and common civility toward those who had business with government was too often absent. It was difficult to escape the conclusion that certain officials were unable to distinguish between a member of the public and a subject.

16. The business community, too, failed to accept the opportunity it had to assume a role of national leadership. Industrialists appeared

unwilling to espouse a cause or support a project on its merits but continued to search for opportunities to establish a *quid pro quo* with government by concentrating their philanthropies in areas dear to the hearts of influential government officials.

17. In education the prevailing attitude of the public and those responsible to Government was that it warranted low priority. Among those outside the educational system there was little recognition of the fact that at independence the nation was thrown into competition with the rest of the world and that its future status depended upon how well it met this competition with the skills of its own manpower. Although our leaders were now the architects of policy rather than the implementors of the policy of others, education was neither in fact or theory given the importance that would enable it to meet this challenge. Those within the educational system failed to develop new attitudes, habits, and skills consistent with the needs of a people who controlled their own destiny. Our curricula, teaching methods, administrative structure, and system of examinations continued to reflect the old ways.

18. This, in broad outline, was the state of mind that had come to pervade all areas of our national life. They are the attitudes of a subject people rather than of free men. Yet it is the outlook that motivates each segment of our society that will determine ultimately our future achievements. We cannot escape the conclusion that our fundamental need is for a revolution in attitudes through which the cynicism, lethargy, opportunism, suspicion, dishonesty, and indifference that have characterized the outlook of so many of our people and officials in the past will give way to a spirit of individual initiative, personal integrity, pride in accomplishment, trust in one's fellow men, and "a private sense of public duty". We have no illusion that this re-orientation of values can be brought about quickly or completely or that it can be realized only through fiat, yet come it must if we are to achieve any substantial improvement in our educational system or in any other sphere of national endeavour. We might dwell for a moment with profit upon some of the specific implications of the revolution in attitudes which is needed.

II. Needed Changes:

19. To begin with, the people should revise their concept of Government and their relationship to it. They must understand that the government is but an instrument through which they give direction and substance to their own aspirations. The services provided by government must be paid for eventually from their own resources. The genius of man has not yet devised a mechanism whereby a government can spend indefinitely the money that it does not have. In concrete terms this suggests that our citizens must also depend upon their own spiritual and material resources and not expect the benefactions of government to provide them with the environment and the institutions they desire for themselves, their children, and their community. We must resist the impulse, so willingly succumbed to in the past, to petition government for every service. The community itself is the principal beneficiary of education, health and social services and the energy and resources needed to realize these benefits must come primarily from the community.

20. A corresponding transformation must take place within government and among its officials. This change, already expressed in the actions of the new regime, must shift the principal focus of government activity from the maintenance of law and order to the dynamic, expansive concerns of national development and the welfare state. In thus re-orientating its central purpose, government must principally aim at the overall development of the country and not the satisfaction of individual interests—as was often the practice in the past. Rather, efforts should be concentrated on those long-range projects, designed to provide a firm base for the national economy, which are beyond the financial and organizational resources of individual communities. At the same time the government worker will have to resist any temptation he may feel to misuse the authority he has been given to expedite the people's business. He can do this only if he comprehends and accepts his designation as a public servant. He must receive his satisfaction not from any sense of the power he may hold over his fellow citizens, but from the pride of accomplishment that accompanies the fair, honest, and expeditious performance of his duties. Our government officials will be able to adopt this attitude more easily if both their superiors and the public accord this type of public spirited performance the recognition it deserves.

21. Education, which is the area of our particular concern, can meet its responsibilities only if a revision of attitudes on the part of the professional educator is accompanied by a change in the view point of government and the public. Except in the very early days of our national existence there has been little comprehension of the fundamental role that education must play in the programmes of social and economic improvement. The concept of education as an investment in national growth or as an economic asset has been generally absent from the councils of government. We have reason to believe that the present government has altogether a different outlook. We are encouraged by certain similarities of approach to educational problems that appear to exist between the present regime and our first government. Within a month after independence the Quaid-e-Azam demonstrated his concern for education by calling a national conference to give direction to our educational efforts. In the same spirit the President General Mohammad Ayub Khan established this Commission as one of the early actions of his government, stating that he gave education a very high priority. We trust that this attitude towards education will be shared by economic planners and the public.

22. At the same time the traditional views toward education that have been held by the people must be altered. They must rapidly set aside the erroneous belief that education can be had "on the cheap". In education, as in every other sphere, it is impossible to escape the economic reality that one receives largely what one pays for. Good education is expensive, and educational expansion means more expense. The people must accept the fact that since it is they and their children who benefit most from educational, the sacrifices required must be borne primarily by them. Acceptance of this principle would create an identification of the community with the schools that does not now exist. Such an identification finds expression in a deepening concern for the nature and scope of the educational programme; a spirit of co-operation between parent and teacher; and a genuine recognition of the contribution of the school to the life of the community.

23. In order to find our place in a highly competitive world we must learn to put the first emphasis on quality in education. The important role the schools can and should play in inculcating values and moulding the character of youth must also find expression both in the curriculum and in the school environment. The qualities of honesty, fairness, hard work, and genuine interest in students must be wedded to the attributes of sound scholarship and imaginative teaching to produce in our teachers the high ethical standards so long expected of their profession. We must break down the distrust and suspicion that has pitted students, teachers, and school authorities against each other and build a sense of academic unity based upon mutual respect, co-operation and trust. Educational progress calls for imagination, initiative, and a spirit of daring to seek new answers to old problems, and we must nurture these qualities in every sphere and at every level of our educational system.

24. We have lingered upon this question of attitudes because we believe them to be at the crux of our difficulties. In its discussion the Commission has been aware of it at every turn. Each analysis of past failures, each problem that has been discussed, and each solution that has been proposed turns ultimately upon the attitude of some segment of our society. We have become convinced that all of our educational problems and, in fact, all of our national problems are inseparably entwined in a web of attitudes and values that is inappropriate to an independent people and incompatible with progress and national development. The attitudes of a people are not readily changed, but they can be changed. This is one of the main lessons of recorded history. We have tried to emphasise here our conviction that basic changes must take place among the people of Pakistan and within our institutions before the nation can begin to realize the aspirations it holds for itself. The importance of education is that it is the basic instrument for promoting this change.

III. The Objectives of our Educational System :

25. In our report we suggest how this change can be brought about. We firmly believe that the reorientation and reorganisation of education in Pakistan which we have suggested will, if approached with a new spirit by all concerned, provide us with the trained manpower, educated citizenry, and competent leadership we require. We would like to outline some of the thinking that has guided our deliberations and has served as the premises upon which our recommendations are based.

26. It is axiomatic that the educational system of a country should meet the individual and collective needs and aspirations of the people of that country. It is not our purpose to catalogue all the weaknesses that our educational system has shown in the past. Some of these are identified in the chapters which follow in so far as they pertain to the different levels and forms which the educational system takes. Rather we have viewed our task as that of defining what should be the objectives of our education, of indicating how far it is falling short of those objectives and of making suggestions for the necessary correction.

27. The educational system is the instrument a society uses to equip all its people to lead productive public lives and full personal lives, according to their talents and interest. This system must be such that gifted

individuals have full opportunity to develop their skills; it must give scope for the training of a leadership group and at the same time provide for the development of all the vocational abilities needed for the creation of a progressive and democratic society.

28. Our educational system must play a fundamental part in the preservation of the ideals which led to the creation of Pakistan and strengthen the concept of it as a unified nation. The desire for a homeland for Muslims on the sub-continent grew out of their wish to be in a position to govern themselves according to their own special set of values. In other words, our country arose from the striving to preserve the Islamic way of life. When we speak in this context of the Islamic way of life, we have in mind those values which emanate from the concept of a universe governed by the principles of truth, justice, and benevolence, where human relationships are based on the ideal of universal brotherhood, and where all these are rooted deeply in religious belief. The moral and spiritual values of Islam combined with the freedom, integrity, and strength of Pakistan should be the ideology which inspires our educational system.

29. The first consequence which follows from this historical fact is that we must strive to create a sense of unity and of nationhood among the people of Pakistan. Education has an important role to play in the promotion of this feeling of solidarity, a firm basis for which exists in the set of common hopes and aspirations which led to the creation of our country and which still inspire the lives of our people. We lay stress on the necessity to develop an educational programme at the different levels which will cultivate this sense of unity and nationhood. The peculiar geographical separation of the two wings of Pakistan makes this all the more difficult and all the more necessary. National unity and religious values have to be translated into deeds in a manner that all our citizens can accept them and join in the common effort. Islam teaches honestly in thought, in deed, and in purpose; it lays emphasis on social justice and active participation in the removal of distress and poverty. In short, it seeks the identification of those who know with those who do not know, of those who have with those who do not have, of those who are powerful with those who have no power. These are tasks which can unite all of us, and it is through identification with all our problems and all our citizens that we shall find real unity. In this task differences between the various Muslim sects as well as the differences between the various religious communities inhabiting Pakistan must be forgotten and every one should dedicate himself to making it a strong and prosperous state of which all its citizens may be justly proud.

30. From our concept of justice and brotherhood there derives the desire to create a social welfare state. Our greatest need as a people is to improve constantly our standard of living, which at the moment is among the lowest in the world. We lay stress throughout our report on the concept of education as a public investment in economic development. This argument, we are convinced, is no academic one and we could cite many examples of public figures and economic specialists in North America, Europe, and the Soviet Union who subscribe to this view. The history of the economic development of these countries begins with the education of their citizens, and the remarkable progress they have made in developing their national wealth is largely accounted for by the efforts

they have made in educating their citizens at all levels. The advantages of technological progress have been publicly recognized in Pakistan and incorporated in various development plans of previous governments. We are convinced that one of the missing elements which has partially accounted for our failure to accomplish these plans has been the insufficient attention paid to the training of scientific personnel and the large body of technicians and vocationally skilled workers necessary for the practical applications of the advanced work of the scientist and engineer. We believe that we shall continue to fall short of our development goals until full provision has been made for the training of skilled personnel at all levels.

31. The reading of our chapters on Engineering, Technical and Vocational, Commercial, and Secondary Education will show not only how provision for the training in these fields can be made but also what are the different categories of personnel needed in our conditions and what are the special qualities that they should possess. We believe that, in particular, there is need for the training of a leadership group in engineering, the skills of government, and commercial development. This group should possess imagination, high professional ability and a determination to use local resources and not remain dependent on the skills and material imported from outside. We stress throughout our report that one of our greatest national assets is our manpower but that this asset can only become the creator of national wealth when its energies have been released and enriched with the skills and training necessary in a complex modern society.

32. We have given special emphasis to the need for scientists, engineers, and technicians because we believe that this has been our greatest weakness and the greatest failing of our education system. However, in Pakistan there is if anything a more pressing need for the development of agriculture and the utilization of the products of our soil. Our present methods are in the main primitive and have led to more than one food crisis for our people; in addition, they provide little scope for the whole range of industrial use of agricultural products which modern science has made possible.

33. Our report has been written with the conviction that only through vigorous action in training the people needed for this technological and agricultural progress can we escape from the situation in which our vast manpower, instead of being a source of national wealth, is a constant drag on our economy. It is only in this way too, that we can create the social welfare state which our concepts of justice and human brotherhood place on us as a responsibility.

34. An educational system is part of this concept of a social justice in the sense that its benefits and opportunities must be available to all. In our conditions, where resources are limited, it is unfortunate that for some time to come it will not be possible to provide universal education. We are suggesting that a target for the achievement of this should be set and all efforts bent towards that goal. In the meantime, we believe that the accent should be on quality, particularly at the higher levels of education. This, as will be seen, has certain consequence for the organization of institutions of higher education. In a democratic society its immediate consequence must be that public assistance in the form of scholarships

and awards is made available to those best equipped to profit from education in a situation where it cannot be provided for all and the majority of our citizens are economically handicapped.

35. The contribution of the educational system to national development which we have discussed above relates particularly to the development of intellectual abilities. Of equal importance, however, to a growing nation, recently independent, is the character of the individuals of which it is composed. Hence, the emphasis we have laid on the character building aspect of education.

36. One of our greatest weaknesses as a people is our unwillingness to use our hands and a misconception of the true nature of manual work. So long as this remains a feature of our educated class, progress in developing our country will be slow. We have devoted a special section of this report to this matter as we believe it to have a vital bearing on national development. We also make provisions in the chapters on Primary and Secondary Education for the introduction into our curricula of courses in handwork, simple agriculture and workshop practice, which we believe would help not only to develop new skills in our children but would also awaken in them a liking for the use of their hands and a realization of the benefits and pleasures of manual skill.

37. The concepts of spiritual and moral values, of nation building, of scientific development, of enlightened citizenship, and of public service should in our view motivate and guide our educational system. It is with these in mind that the proposals to be found in the following chapters have been drafted. In presenting them, we have attempted to remain realistic and to set targets which we believe can be achieved within the resources available to us. We have attempted to avoid discussion of the conflicting philosophic views on the nature of the educational process and the forms it should take. We have tried to be practical and unambiguous though at times a certain amount of generalization has been inevitable. This, however, has been used as the basis for reasoning toward practical and concrete measures. Much detailed work will be necessary in implementing the measures we propose. Our belief is that they will set our educational system on the right road, though inevitably a re-assessment and re-adjustment of targets will become necessary from time to time.

38. A major difficulty we have had to face lay in combining academic and in a sense theoretical advice to educators for long-term guidance with practical proposals to government for the correction of present weaknesses. We are well aware that ours is not the first set of proposals for reform of our educational system. Our hope is that it may be the first to be translated into both prompt and long-term action.

CHAPTER I

HIGHER EDUCATION

I. Introduction :

Civilised societies have for many centuries looked to their institutions of higher learning for the training of leaders in government and the professions. Developing technology and the attendant growth in complexity of the social structure are increasing, and will continue to increase, the range and number of positions for which higher education is necessary. There are many specialities in business and commerce, in industry, and communications which did not exist a few years ago. Professions and trades have reached still higher levels of development in recent years. In medicine, the general practitioner has been supplemented by specialists in the various branches of medical science. In other sciences as well, the vast increase in man's ability to control and utilise natural resources and the forces of nature has resulted in a bewildering array of special fields of knowledge for which institutions of higher education must provide training. In the humanistic studies, the growth of man's knowledge and understanding has been less marked ; in fact, because of the expanding requirements of science and technology, such studies have lost the predominant position they once occupied. They have not, however, lost any of their importance. On the contrary the study of man himself, his hopes and ambitions, and his striving for the fulfilment of his destiny, has assumed a new importance as the advance of science and technology increases the inter-dependence of men and of nations.

2. Thus, higher education in the modern world must provide training in a larger number of specialities and for a larger number of students. As a society progresses, the proportion of the people who need advanced education increases. But higher education must prepare not only adequate numbers of persons to fill positions appropriate to modern conditions, but also offer education of quality. There are therefore three tasks, and they must be accomplished at one and the same time. The range of educational course must be extended, larger numbers of students must be catered for, and the quality of the education provided must be maintained and improved.

3. There is a further aspect of the situation we must consider. Higher education has a responsibility which goes beyond the training of persons to engage in specialised or professional work ; it must also assist the students to become educated men in a general sense. This means creating in them proper habits of work, a continuing desire for knowledge, initiative, an independence of thought, an understanding of the problems of society, a desire to help solve such problems, and a sense of honesty and fair play in dealing with others. In short, higher education must be concerned with the formation and development of character as well as with the acquisition of knowledge.

4. Furthermore, an effective system of higher education not only serves society's present needs but must also help to give direction and impetus to the course of human progress. Higher education is the agency primarily responsible for extending the frontiers of knowledge, for examining and interpreting the ways of man and of nature. Through the application of scholarship to practical problems it helps in the direction and furtherance of national planning.

5. These are the objectives of higher education everywhere. We may now examine their implications for Pakistan.

6. Pakistan is a relatively new state, destined to play, we believe, an important role in this complex world. Though it is politically young, its people have an historic past and fine cultural and educational traditions. Its known natural resources are few and are not fully exploited; its potential resources have yet to be explored. In business, administration, industry, and agriculture our techniques are ineffective and outmoded. Our attitudes are largely inherited from a social system no longer appropriate to an independent and progressive nation. The inevitable consequences are low productivity and a low standard of living. These in turn breed apathy, inefficiency, and an obstinate traditionalism. The only way to break out of this vicious circle is through releasing and directing the skills, vigour, and enthusiasm of our people and thus laying the foundations for an adequate supply of trained personnel and outstanding leaders.

7. The excellence of a country's public administration, the degree of advancement of its agriculture, industry, and commerce, its progress in science and technology, its contribution to the arts of civilisation and culture are all measures of the quality of the leaders it produces. We look to our institutions of higher education for the production of leaders and in this we cannot be satisfied with less than the most exacting standards of achievement. The country which is prepared to invest in the skills and abilities of its most gifted citizens will reap rich rewards in national development and international prestige.

8. No country has ever been able to make rapid progress without a well-developed system of higher education. Our greatest national asset lies in the potential skills of our people and our economic and social progress depends on how we develop them. This implies that all who can prove their capacity to profit from higher education must have it, however, poor or humble. We must seek out talent, encourage it, and provide it with the opportunity to flourish.

9. In a well-developed system of higher education research plays a part as important as teaching. It would therefore be inadvisable to concentrate all our attention on teaching and treat research as a matter of secondary importance. Research, we must remember, enriches teaching, contributes to the world of learning, and by its discoveries in the natural and social sciences transforms our very lives. From now on we must think of both teaching and research every time we think of educational development. This dual role of higher education is fundamental.

10. Since independence education at the higher level in Pakistan has expanded enormously. New colleges have been opened and existing ones expanded without adequate facilities. This largely unplanned expansion has been at the expense of quality, which has deteriorated disastrously; it is imperative that this trend be reversed. If colleges and universities have poor staffs, if class-rooms, laboratories and libraries are poor, the nation itself will remain poor.

11. To maintain and improve quality we need more accommodation and better equipment. These, however, must be provided within our resources, and there are many fields, in which economies can be made by careful planning. Duplication of facilities is wasteful and must be avoided. Where a wide range of specialist teachers is required, for example, the size of the student body must be carefully planned to make the maximum use of their services.

12. Good buildings are of little use without good teachers. Steps must be taken to increase the number of qualified teachers, of whom we have far too few. We must be realistic enough to recognise, however, that for many years to come fully-trained teachers will be in short supply. It is therefore necessary to ensure the very best possible use of the qualified staff available and to improve the efficiency of those already in service. It is important that all teachers carry reasonable and equitable work loads in which proper allowance is made for teaching, tutorial work, student guidance, and further study or research. The calendar for higher education must be revised with a view to correcting present practice under which, for long periods of time during the year, our universities and colleges virtually cease to function.

13. Modifications must be made in the teacher's conditions of service. The present situation under which teachers enjoy permanent tenure virtually from the time of appointment, and under which promotion and salary increases are largely automatic, must be replaced by one in which superior performance is rewarded, and in which able young teachers are not held to lower positions merely because a rigidly fixed number of senior positions has already been filled. Those in positions of academic leadership must be given the opportunity effectively to exercise that leadership in stimulating their staffs and, once given this opportunity, must be held responsible for exercising their leadership. If good teachers are to be rewarded and poor teachers penalised, there must be a proper system of evaluation. This must be the responsibility of those in charge.

14. The maintenance of quality in higher education is also related to teaching methods and to the means used to evaluate student progress. The Commission recognises that the methods now employed in our colleges and universities are unsatisfactory in that they emphasise memorisation of facts to the exclusion of other kinds of learning. These must be replaced by teaching methods which will excite the student's intellectual interest and generate in him a spirit of enquiry and the ability to apply his knowledge to the solution of problems.

15. Similarly, the examination system must be revised. The present practice under which complete reliance is placed on the results of examinations, and in which examinations measure nothing more than the ability to memorise text materials and lecture notes, inevitably means that the examinations determine the curriculum. This is the reverse of what it should be.

16. The research that is carried on in universities is closely linked with the teaching and these together determine their intellectual tone. Unfortunately, very little research is now being done by the teachers in our universities. Here, as in the case of teaching, a system of incentives and rewards must be set up and the necessary academic leadership provided to administer it.

17. Finally, a word must be said about the students themselves. Quality cannot be maintained unless the student body is of the necessary ability to profit from higher education. Hence a procedure must be devised which will ensure good selection. It is of equal importance that only those students who show ability and industry should be permitted to continue their studies. We cannot afford to waste money in a futile attempt to educate incompetent and unwilling students.

18. The conditions under which students live and study, and their relations with their teachers are also relevant. Conditions of study are generally unsatisfactory, library facilities are inadequate, and the teachers do not encourage the students to make use of even the existing facilities. Teachers have little real, effective contact with their students, and the university work is too often a perfunctory routine when it should be an exciting experience.

19. The steps to be taken to achieve these objectives are discussed in the succeeding sections of this chapter.

II. Higher Education as a Distinct Stage :

20. Higher education may be defined as the form of education that exists for the advanced training of young people of serious purpose who have had at least twelve years of previous schooling and are on the verge of adulthood, who have a proven capacity for intellectual work, and who will eventually provide national leadership at various levels and in all spheres.

21. The essence of higher education is a community of scholarship in which the student is working for the first time in relative independence and yet in an atmosphere where his teachers and fellow students are indispensable parts. It is the meeting place of alert minds in an environment that stimulates thought and promotes understanding. The essentials are not the examinations it sets, nor the degrees that it grants, but its capacity to encourage teachers and scholars to engage in research and to pass on to the next generation the results of their study.

22. It follows therefore that higher education must be thought of and administered as a separate stage of education, distinct from the primary and secondary stages. Hitherto, the boundary between secondary and higher education has been somewhat obscure. The examination at the end of ten years of study is known as Matriculation—a term which signifies fitness for University studies. But this is not the right age for University education. A boy or girl who has just passed the Matriculation at the age of say 15 or 16 is not mature enough to meet the exacting demands of University education. The proper stage is after passing the Intermediate which is a course of two years after the Matriculation. In all educationally developed countries today the minimum age at which a student qualifies for University education is between seventeen and nineteen after twelve or thirteen years of schooling. This is exactly what it should be. Our present low age of entrance has been criticised by all education commissions and expert committees. The Calcutta University Commission, the Punjab University Commission, the Advisory Board of Education, and the Inter-University Board are all agreed that higher education proper begins only after the end of what is now known as the Intermediate stage. Only then are students ready for the kind of education which is characterized by the distinctive aims of the university. Because of the consensus of opinion on this point the Punjab University Act was amended in 1954 and the Intermediate stage removed and assigned to a newly created Board of Secondary Education at Lahore. Elsewhere this decision has not yet been taken, but we believe, the time has now come to apply it throughout Pakistan.

~~23. In our opinion, this is the first essential reform.~~ It will enable both the schools and the universities to become more effective because each will be able to recruit teachers trained and experienced in the special requirements of its students and to adapt its methods accordingly. The separation of the Intermediate from the college classes should lead ultimately to some economies. For example, where the number of degree students is small, there would be no justification to maintain a degree college. This will result in a concentration of efforts in selected areas of degree colleges and thus prevent the automatic raising of an intermediate college to a degree college which is at present the case. Our recommendation will further see the elimination from higher education of many students who in an institution of the above kind drift into university education, without being really fit for it and thus cause an unjustifiable drain on the country's resources.

24. We therefore recommend the immediate establishment of Boards of Secondary Education where they do not already exist, and their extension where they do exist to include in their control the Intermediate or Higher Secondary Classes.

25. We appreciate that the physical separation of the Intermediate classes from the colleges cannot be made overnight, but we insist that it should be done quickly and within five years at the most. So long as these classes remain in one institution, there will be every temptation for indifferent students to drift into higher education. Where new buildings are required, these should be designed for the degree rather than the higher secondary classes.

26. We recognise that there are many teachers working with both Intermediate and Degree classes under present arrangements and that their interest will have to be protected. To avoid personal hardship we suggest that such teachers be assured that their existing scales of salary will not be changed. It will be for the appropriate authorities to decide, in the light of their qualifications and abilities, whether they should serve permanently as university or as higher secondary teachers.

27. During the transition period, although Intermediate classes may be held in the same building along with degree classes, immediate steps should be taken to separate their teaching and administration, including their accounts, records, and statistical reports. The XI and XII classes should become the responsibility of the Boards of Secondary Education as soon as these are established.

III. Admission Requirements and Degree Courses :

28. It has sometimes been urged that the period of pre-university education should be increased from 12 to 13 years, as obtains in some educationally advanced countries. But we have to decide on priorities, and we feel we cannot recommend such a change at this stage. We have therefore worked on the assumption that a total of 12 years' schooling should normally precede admission to higher education. This means that a student should be ready to begin his university education at about 17 or 18, when he can be expected to work with independence and a sense of responsibility.

29. The universities and colleges will determine their own methods of selecting students with as much co-ordination among themselves as may be convenient and possible. They may wish to consider the candidate's performance in the higher secondary examination ; his achievement during previous stages of education as entered in a cumulative record, including successive teachers' ratings and estimates of personality and character traits ; and his specific aptitudes for higher education in one or more of its several forms as determined by carefully prepared instruments of scientific testing.

30. Universities and degree colleges, being relieved of the responsibility for Classes XI and XII, will be in a position to devote their whole attention to preparing students for the bachelor's degrees and for research and post-graduate courses.

31. In order to improve the standards at university level we recommend most strongly that the bachelor's degree course should be extended from two to three years. As the degree course is meant to provide a broad-based education with a fairly high level of attainments, it cannot satisfactorily be completed in less than three years. This is already the case in all educationally developed countries. In some western countries, like the U.S.A., it is actually four years.

32. We believe this recommendation will eventually result in economies. If, as we have already recommended, a more rigorous method of selection be applied, and if the standards of teaching are improved, the proportion of successful students will materially increase, and we shall be spared the appalling wastage of effort and money which we now spend on educating for failure.

33. Within higher education there are three stages of scholarly activity as represented by the undergraduate, the early post-graduate, and the advanced post-graduate. The first introduces the student to a field of specialisation, the second leads him on to the mastery of some portion of that field, and the third carries him into new advanced areas through independent study and original research. The student begins with the first or bachelor's degree, the specialist continues to master's and the skilled researcher earns the doctor's degree by the results of his own scholarly labours.

34. The universities should provide two types of courses at the first degree level, namely the pass course and the honours course. The pass course should be designed to give the student who will not normally expect to continue into post-graduate studies a broad understanding of several related disciplines with approximately equal emphasis on each of them. It should ordinarily consist of three subjects in such combination as the universities may determine. There should be public examinations at the end of each session, or at least at the end of each year, to encourage steady application and to decide the student's fitness to continue the course. The honours course should be for the more capable students, expecting high proficiency in a single discipline in anticipation of advanced study and specialization at the Master's degree level. It should consist of one main subject receiving approximately 60% of the marks and two or more minor subjects for the rest. In both pass and honours courses the first year should include general courses in the humanities and social sciences for science students, natural sciences for arts students, and the English language for all. At the end of the first year there must be a firm assessment of the student's progress with provision for transfer from the pass to the honours course or from the honours to the pass.

our academic reputation sustained throughout the world. Each will have to make its decisions in the light of what other universities are doing ; and this is an area where intelligent balances are needed if we are to avoid waste and unnecessary duplication of effort.

V. Examination in Higher Education :

45. The present system of examination has been widely criticised. We have heard evidence that it is responsible for many of the weaknesses in our education. For most students the examination has come to be more important than the acquisition of knowledge. Students have postponed their study to the few weeks before the examinations and, in consequence, have not learned the habit of sustained effort and application. Teachers have taught only the basic minimum of what was required by the syllabus and have substituted cramming for education. Students have been quick to rebuke any teachers who wandered from the set syllabus and have seldom acquired the sense of adventure in learning. The emphasis has been on the successful retention of some facts about a subject for a brief period rather than on the more arduous but rewarding aim of mastering a subject, understanding its basic principles, and learning how to apply this understanding to real situations. Examinations have come to dominate higher education, and the examining function of universities has dangerously overshadowed those of teaching and research. Moreover, as internal examinations have at present no value, the external examination is the exclusive pre-occupation of the student and he does not feel under strong immediate pressure to attend lectures or to secure his teacher's guidance personally or in the tutorial group.

46. The Commission has received conflicting advice on this question. On the one hand, it has been suggested that external examinations should be abolished altogether and replaced by internal examinations on the grounds that a teacher knows his students best. On the other hand, it has been urged that internal examinations would probably not produce reliable results in universities which are predominantly affiliating and that even in the case of teaching universities, there would be the danger of prejudice and favouritism.

47. The Commission has given careful thought to these views and has come to this conclusion. The external examination system has the advantage of being familiar and accepted, and, if carefully administered, places a positive check on the teacher's preferences, favouritism, laziness or plain incompetence. If external examiners are competent, the system puts the instructor on his mettle. On the other hand, there is no doubt that the present system does not promote habits of sustained work or the right attitude to work.

48. Our recommendation therefore is that external examinations should be supplemented by regular internal examinations prepared and marked by the teacher throughout the academic year. We suggest that a weightage of 25% in each paper should be given for this internal evaluation by the teacher. To this end we recommend that periodic examinations be conducted by teachers. These should be held approximately once a month or, if advisable, even more frequently. The "answer" papers should be returned, and the marks posted. A cumulative record should be prepared for each student. A student should be

required to obtain pass marks in both his internal and external examinations. His standing and division would, however, be determined by the total figure.

49. The certificate issued after graduation should show the results of the external examination and, separately, the internal evaluation. Government scholarships should be awarded on the results of the external examinations alone. The colleges should be expected to present for the university examination only those candidates whom they consider, on the basis of their internal marks, to have a reasonable chance of success. The universities should scrutinise the internal awards of their affiliated colleges, so that if these should differ widely from those of the external examiners, the reasons for the divergence may be looked into. We recommend that the student's cumulative record, which should be maintained regularly throughout his academic career, should be available for submission to prospective employers and admission committees.

50. We are fully aware of the dangers of internal evaluation ; nevertheless we are persuaded that if the examinations are held every month, the answerbooks returned to the students, and the marks posted on the noticeboards, such dangers, will be minimized. Indeed, we feel that this system may well guard against favouritism of any kind among the teachers and lessen the possibility of their judgement being influenced by considerations other than academic. We, of course, agree with the view that we must start trusting our teachers and that, unless we do so, this needed sense of integrity will not be easily developed among them. If the universities and colleges cannot promote habits of honesty and integrity among their teachers, we fear that they will fail to justify their existence.

51. It is suggested that the pass marks be fixed at 40% in each subject with 50% in the aggregate and that a student must achieve an average of 60% for a Second Division, and 70% for a First Division. The student who fails should have one more chance only. If students are in this way made to work more conscientiously, we imagine more of them will pass.

52. There remains the problem of devising examinations which do not call merely for the memorisation of textbooks, notes, and lecture material, but which encourage true teaching and true learning and which test whether a student has mastered his subject and can fruitfully employ his knowledge. This requires a new attitude from teachers and students alike.

53. We believe that the measures we have proposed for internal examinations and assessments will go some way towards achieving this. We believe also that the essay-type question should be supplemented by the new type objective tests that have been developed in other countries.

54. It is highly desirable that the interval between the examination and the declaration of examination results should be not more than three weeks. We recommend this both for the sake of the student and in the wider interests of the country. We cannot afford to keep large numbers of young people idle and unsettled for periods of two months or more, and prospective employers must be able to assess and engage new staff as soon as possible after they have finished their studies.

55. We consider the present practice wasteful in which one portion of an examination has to be repeated in the next. An examination procedure which tests understanding rather than memorization would make this unnecessary.

56. A task of the proposed Institutes of Education would be to explore the possibilities of new types of testing, and to devise and standardise ones which are suitable for our candidates, bearing in mind the use of tests in selection, student guidance, and graduate assessment. In addition, each university might set up an expert committee to advise on the form and conduct of examinations.

57. Honours students and candidates for the master's degree should be required to appear in an oral (*viva voce*) examination, the results of which should carry considerable weight in the final assessment.

58. We have stressed throughout the report that at the college or the university level students should have the full educational experience of learning with others through lectures, tutorials seminars, laboratories and the other contacts afforded by the corporate life of a higher educational institution. The concept of private candidates for university degrees where the students study on their own and then sit for the examination is not consonant with good educational practice. There are, however, some compelling practical considerations which restrain us from recommending the complete and immediate abandonment of this avenue to a degree. In the past it has been common practice for the university to allow teachers, women, members of the defence services, and certain government employees to appear as private candidates. We would suggest that these concessions may be continued for a further period of five years only and that they should be restricted, as at present to the Bachelor of Arts Pass degree. We have already recommended that the Boards of Secondary Education should conduct an external examination for private candidates at the matriculation and higher secondary (Intermediate) levels, and we would suggest that the degree examinations for private candidates should be external examinations also.

59. As regards post-graduate teaching, the Commission is convinced that this should be offered only through a regular programme and that private candidates should not be allowed to take examinations at this level.

60. As a University degree is generally regarded as a passport to Government service, our colleges and universities are congested with students many of whom are not properly equipped to study at this level. We do not think that a university degree should be required as an entrance qualification to government service except for superior posts. For all other posts, what we require is professional competence and not a University degree. We have, therefore, made abundant provisions for day as well as evening courses in the commercial and technical fields.

VI. Research and the Universities :

61. We have emphasized throughout that research is one of the essential features of university education. Not only is it of national importance in our developing economy but it has also a further value as a means of keeping a teacher alert and up-to-date, and of enabling him to

stimulate and inspire his students. Adequate provision for fundamental and applied research is essential for any country which wishes to be strong and progressive.

62. We, therefore, consider it necessary, that our universities should be encouraged to build up strong departments in which both teaching and research will have prominence. The older Universities of Dacca and the Punjab once had a reputation which went beyond the sub-continent. With the migration of a large number of able and qualified teachers in the period immediately following independence, the standards of these two universities suffered a set back. We, however, hope that this is just a temporary phase, and that the two Universities will soon be able to regain their old standards. The Universities of Peshawar and Karachi are comparatively young, but despite many difficulties have made a good start in some departments. The University of Sind has begun research programmes in a number of subjects but is severely handicapped by lack of adequate staff. The University of Rajshahi has only just begun teaching at the post-graduate level and has yet to develop a research programme. We consider that these universities should now make vigorous efforts to build up research and teaching facilities at the post-graduate level at least in the basic arts and science subjects. Careful co-ordination is, however, imperative to avoid unnecessary duplication, wasteful competition, and diffused use of our all too few qualified teachers. It would obviously be preferable from the national point of view to have one or two strong centres in a particular speciality rather than to attempt several which might all be weak.

63. To establish strong research departments we require highly qualified staff. All teaching and guidance at the honours, master's and Ph.D. levels should be done by men who have adequate research qualifications. All efforts should be made to recruit staff, at least professors and readers, who have good research degrees or some years of research experience as well as published work. The quality of research work should thus be maintained at a high level. In particular, the senior doctorate degree should be awarded only for published work of eminence as judged by international standards.

64. We employ the word "research" here to mean, in the case of science subjects, an original contribution to knowledge based on individual exploration of phenomena with rigorously applied methodology. We do not mean the repetition of a known experiment or series of experiments or the representations of other men's work. In the humanities and social sciences this definition would have to be modified somewhat, but there, too, we restrict our use of the word to original scholarship at a very high level. Students at the honours and master's levels should be given an introduction to the methodology of research. But this is not research proper, and the M.A. and M.Sc. courses should not indeed prescribe any original research, and should restrict themselves to the advanced study of the subject and the latest developments in it. True research is undertaken only by students at the Ph.D. level and by teachers who already have their doctor's degrees.

65. Each university should set up a Committee of Advanced Studies consisting of deans and heads of departments and a few teachers having research qualifications and experience, with the Vice-Chancellor as Chairman. The functions of this Committee should be to advise action

on all academic matters connected with post-graduate work within the university. It should make recommendations regarding the approval of various projects and the award of all grants and fellowships.

66. While we wish to see considerable expansion of advanced studies at the post-graduate level, we are no less anxious to achieve high quality in the work done. There is a real danger that universities may start such work without the necessary facilities. We, therefore, recommend that no department be allowed to undertake Ph.D. work in a particular subject unless the Committee of Advanced Studies in the university is satisfied that the necessary facilities, including effective supervision, are available. We also suggest that the Committee of Advance Studies should review the position as regards existing Ph.D. work to satisfy itself that suitable staff and equipment is available and that a high standard is maintained.

67. We further feel that the universities among themselves should co-ordinate the programme of advanced studies at the post-graduate level through the Committee of Vice-Chancellors, in consultation with their scholars and experts, and that this Committee should review annually the programme of advanced studies at each university and should award Junior and Senior Fellowships. Adequate funds should be made available to the universities for this purpose.

68. The universities should give particular attention to research in fields which affect national development. One of Pakistan's urgent needs for example is the survey and exploitation of natural resources, and this argues the need for research in the field of geology. The Punjab University has in association with UNESCO gradually built up a good school of geology but it needs further strengthening so that it may undertake advanced work in geological research. Similarly, geological departments in other universities need to be strengthened. Again, an oceanograph survey should be undertaken with a view to exploring new sources of food supplies for our increasing population. Moreover, there are other important fields of research which require our close attention, such as economics, public and business administration, and marine biology. It would be for the universities to determine their respective areas of specialisation.

69. Junior Fellowships should be available to M.A.'s and to M.Sc.'s who have had a brilliant record and who have shown sufficient promise of originality of mind. Senior Fellowships should be awarded to Ph.D.'s of recognised ability and should be on the same scale as the pay of a Reader. These men may be of any age. The number of Junior and Senior Fellowships should be sufficient to absorb the most brilliant and promising M.A.'s and Ph.D.'s of recognised merit and ability.

70. Apart from the important task of conducting fundamental research, the university has to perform another function which has a direct and immediate bearing on industrial and applied research, namely the training of research personnel for various educational, scientific and industrial purposes. For this reason also, the research side of the universities' programme will have to be developed to the utmost. One of our most pressing and difficult tasks, as we have been reminded by Professor Rutherford, is to select from the main body of science students those who are to be trained in the methods of research so that they may become the future leaders of the nation's research programmes. Such manpower is scarce and, therefore, needs all possible encouragement.

71. To promote research, seminars and colloquia should be developed as a regular feature and should be held, if possible, every fortnight in each department. Moreover, university teachers should be encouraged to become members of local and national societies of scholars in their subjects and to participate in their research activities.

72. The terms and conditions of service of senior teachers, particularly readers and professors, should specify explicitly their obligations to carry on research work throughout their period of service in the university.

73. Research in certain fields—such as natural sciences, medicine, food, agriculture and industry—is a national responsibility which goes beyond that of the universities, and which is now being discharged by such bodies as the Council of Scientific and Industrial Research, the Food and Agriculture Council, the Medical Research Council, the Central Cotton Committee, the Central Jute Board and the Atomic Energy Commission.

74. Their work, however, is mainly in the fields of applied research. On the other hand, the essential field of universities is fundamental research—though they can also contribute richly to applied research. So far our universities have neglected fundamental research and relied in this matter on results from abroad. It is true that research is international and there is no need for us to develop research programmes in a spirit of autarchy. But the point is that the particular needs and attitudes of a country determine its programme of research, and many of the problems with which Pakistan is faced are peculiar to Pakistan. We cannot, therefore, do without our own scholars and research workers if we are fully to realise ourselves as a nation.

75. There is in our country a growing enthusiasm for applied research. We hope this will not lead to the neglect of fundamental research. It must be remembered that no nation can afford to ignore such research if it wishes to develop and keep pace, in the long run, with other nations. The Report of the Parliamentary and Scientific Committee of the United Kingdom has reminded us that applied science requires not only the fundamental discoveries of past generations but also fresh discoveries, if it is to retain its vitality. It is necessary to emphasise this point because there is a mistaken view prevailing in some circles that industrial research is a national necessity while fundamental research is a luxury. Nothing could be farther from the truth. The history of science is full of instances showing that fundamental research is the primary stage and industrial research is the secondary stage in man's progress. In fact it is on fundamental research that the industrial and economic progress of a country ultimately depends. There is no genuine knowledge of the universe that is not potentially a part of the history of men and the practical applications of the most abstract knowledge have been abundantly demonstrated in the history of civilization.

76. We feel there is an urgent need for a central body to co-ordinate the work of various research councils and organisations and of the universities whose post-graduate work involves a considerable amount of research. We have given careful consideration to the mechanism which would be most suitable for this purpose, and we have come to the conclusion that the Ministry of Education should set up a high-powered autonomous Board with either the Minister of Education or an eminent educator as Chairman and which should include eminent scientists and representatives of organizations, agencies and institutions engaged in

research. The principal function of this board would be to co-ordinate research among the universities and the various agencies engaged in research work. It is scarcely necessary to emphasize that research is a highly individual activity, and that the various councils which have the responsibility to organize and develop research in their particular fields should have the necessary freedom and authority to plan and execute the programme of research in their particular fields according to their best judgment. The function of the co-ordinating Board would be simply to review the plans and co-ordinate the programmes of research of the various institutions and organisations in the light of national requirements.

VII. The Teacher in the University and His Function :

77. Every treatise on education undertakes at some point a discussion of the teacher, his function and his importance. We must now consider what the nation may reasonably expect of its teachers, the extent to which these expectations are being fulfilled, and the steps that must be taken to secure the realization of unfulfilled expectations.

78. The primary task of a teacher is to stimulate the interest of the student in his field of study, to awaken a spirit of enquiry and criticism, and to develop habits of industry, patience, and perseverance. He can only do this by the force of his own example, and it is the way he spends his time that will determine how the students spend theirs.

79. It may be useful to consider his particular functions under four different heads :—

- (a) Teaching (lectures, laboratory demonstrations, tutorials) ;
- (b) Research ;
- (c) Personal study, including preparation for class-teaching ; and
- (d) Contact with students, including personal guidance and the supervision of extra-curricular activities.

80. There is a general impression that the work of a teacher is merely to give lectures and in point of fact this is what most of the teachers do. This impression needs to be corrected. Actually, lecturing is a relatively small part of his duties, a point which we have stressed later.

81. It might be thought that our teachers neglect their other duties because their teaching-load is so heavy. An examination of a teacher's weekly time-table, however, shows that even his teaching-load is relatively light, compared with universities in the West. And the time-table itself, at it is subject to many interruptions, gives a misleading impression. First, during the normal college year there are many recognized holidays. Secondly, it is quite common for classes not to meet for a month or two, before the final examinations. Again, there is a period of possibly another two months when classes do not meet between the examinations and the publication of the results. There are also numerous impromptu holidays on account of visits by prominent persons, sports events and other special occasions. In addition, there is the privilege of casual leave. More serious still, there is a growing tendency among teachers in colleges and universities to be casual about punctuality and frequently to absent themselves from classes altogether.

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82. What is equally deplorable is the comparative lack of research activity in our educational institutions. The problem of research is somewhat different at the college and university levels. At the college level, research is desirable only so far as it contributes to the alertness of the teacher and the vitality of his teaching. At the university level, however, research is of fundamental importance as without it no true advancement of learning is possible.

83. In universities in the West a large part of a teacher's time is spent on tutorial work. In our universities, however, this is the exception rather than the rule and the methods and purposes of this work are very little understood. As we consider the tutorial to be a vital part of university teaching, it will be necessary to describe it in some detail.

84. By a tutorial we mean a regular weekly meeting of a teacher and a small group of students. A tutorial is not an occasion for a lecture by a teacher; nor is it an informal conversation piece. It is in fact an opportunity for a teacher to get to know his students. It is further a means to discover their potential abilities, stimulate them by discussion, test their responses to what they have read, and to give them individual advice on their studies. A tutorial should help a student to clarify his mind by the exchange of ideas, and should send him back to his books with a new awareness and a new interest. It should encourage him to think for himself, and give him practice in formulating and expressing opinions. The usual form is that the students read original essays in turn and these are discussed, analysed, and evaluated by the group as a whole under the guidance of the teacher. A further advantage of the tutorial is that it enables the teacher to become intimately acquainted with his students, both as individuals and as scholars.

85. While fully aware of the importance of lectures, the Commission is nevertheless convinced that it is in tutorials that the student receives the guidance and inspiration to develop the spirit of enquiry and investigation that is the very essence of higher education. We urge, therefore, that the emphasis in the planning of teaching programmes be placed on tutorials rather than on lectures, and that the holding of regular weekly tutorials should become the universal practice in our colleges and universities.

86. We shall be discussing later (see paragraphs 111—127 below) the question of student discipline, and we believe that a major contribution to the solution of this difficult and urgent problem can be made by the application of the new concept of individual guidance, which is little understood in Pakistan. Individual guidance means, in brief, that each teacher acts as an adviser to a group of students, and makes it his business to understand them as individuals and not merely as students in a particular subject. He acts somewhat like a housemaster in a public school. He has frequent private consultations with them, and makes it his aim to win their confidence. He is sympathetic in his understanding of their problems but firm in his support of moral and personal standards. At present, little sustained attention is paid to the particular interests, aptitudes, and difficulties of the student as a member of the college or university community. It has, therefore, been necessary for students to make their own adjustments as best as they can and on a "hit or miss" basis. Where there are hostels, the warden does a good deal of informal guidance. In some cases the heads of departments have also provided both academic and personal guidance for senior students. These are, however, only

instances of casual guidance, and in general contacts between university students and their teachers, outside the lecture room have never been regular, intimate, and organised as we believe they must be.

87. We are convinced that except for a few dedicated teachers, the vast majority are spending little if any time in improving their own knowledge or keeping abreast of their subjects. We believe that every teacher should spend at least two to three hours daily in private study.

88. We may now state the crucial problem. It is to ensure that the work of a teacher ceases to be an impersonal and perfunctory routine, making little demand on his time or his abilities, and becomes instead a joyous and gainful pursuit. To this end we have two recommendations to make which we consider to be the key to the whole process of university reform.

89. The first is that there must be distinct schedules of work-load for different categories of teachers. These schedules must indicate the amount of time each teacher should devote to his various duties in an academic year. It will be the responsibility of the university authorities to see that the programme of work is actually performed, and the promotion and increments of teachers are made dependent on it. We suggest below a work-load of forty hours a week during term on the assumption of a 36-week academic year. We should have liked to suggest even a higher figure to bring the work load in line with some of the better known universities in the Western countries, but we feel that it would be advisable to make a more gentle break with the existing system. We must unequivocally state that there is no other way to success but hard work, and that the need for hardwork is greater in under-developed countries, like ours.

UNIVERSITY

Faculty of Arts

			Lectures	Tutorials	Student Guidance	Seminars and Research Guidance	Own Studies and Research	Administra- tion and Other Activities
Professors	..	..	300	100	100	300	300	400=1500
Readers	..	..	400	100	100	200	400	300=1500
Lecturers	..	..	500	200	100	100	400	200=1500

UNIVERSITY

Faculty of Science

		Lectures	Tutorials	Practicals	Student Guidance	Seminars and Research Guidance	Own Studies and Research	Administration and other Activities
Professors	..	200	100	100	100	300	300	400=1500
Readers	..	300	100	200	100	200	300	300=1500
Lecturers	..	300	200	300	100	100	300	200=1500

COLLEGES

Faculty of Arts

			Lectures	Tutorials,	Student Guidance	Own Studies and Research	Administra- tion and other Activities
Lecturers (Senior and Junior)	..	..	500	300	100	300	300=1500

COLLEGES

Faculty of Science

		Lectures	Tutorials	Practicals	Student Guidance	Own Studies and Research	Administration and other Activities
Lecturers (Senior and Junior)	..	300	200	300	100	300	300=1500

NOTE.—In colleges where research is not a primary function of the teacher but must always remain a vital part of his professional growth, approximately 10% of the time suggested above for study and research may be transferred to the allotment for lectures and tutorials.

90. Our second recommendation is that the teacher should undertake all these duties within the university or college, because he will then be available to the students for a longer period of time and able to concentrate on serious work away from the interruptions of home-life. For this reason, therefore, we consider it essential that every teacher should have a small, simply furnished room for his own exclusive use. We do not recommend the construction of elaborate or expensive buildings, but we do think that the provision of the simplest accommodation for the purpose is most urgently necessary. Equally important is the provision of libraries without which the time of the students and the teachers on the campus cannot be profitably utilized. The provision of cafeterias is also important so that teachers and students may obtain there cheap and wholesome food and spend the whole day at their work without the expense and waste of time involved in frequent journeys home.

91. It has been stated above that the academic year will consist of 36 full weeks of work. It should be no less, for the urgent demand of the times and the limits of our resources make it exceedingly important that the fullest possible use be made of all our facilities and manpower in higher education. We suggest that the working year should be divided into three terms of approximately equal length, separated by two short recesses and a summer vacation of 12 weeks.

92. The dates for the beginning and end of vacations and recesses will necessarily vary according to local conditions. It is also likely that the arrangement of terms will differ in the several universities. It is, however, most desirable that there be periods during the winter and spring recesses as well as during the long vacation when all the universities of Pakistan should be closed, so as to make possible the meeting of various learned societies to which university teacher should properly belong. The dates for these terms, vacations, and examinations and the declaration of examination results should be fixed in the university calendar and adhered to strictly. Examinations should be held, without preparatory leave, towards the end of the term, and the results must be declared within three weeks of the end of the examinations. No public

holidays should be allowed within college or university terms, except some six or seven days to cover important occasions, such as the two Eids, Christmas, Independence Day and Pakistan Day. Moreover, the system of "casual leave" should be abolished and teachers should be given in cases of necessity emergency leave not exceeding five days in the year. It must be remembered that university teachers get much more leave than employees in government or public organisations.

93. We consider the role of learned bodies vital to intellectual thought and endeavour, but their meetings should not be allowed to disrupt the work of universities during term. We recommended that Government grants to learned societies be contingent on an undertaking that their meetings be held during university vacations.

94. Much, therefore, is expected of the university teacher—a high degree of professional competence and a great deal more hard work than is the case to-day. It is important, therefore, that he be given a salary that will keep him reasonably contented, and in addition the amenities that will surround him with an atmosphere conducive to creative academic living. Such amenities should include adequate residential accommodation, proper medical care, pension or a contributory provident fund. He should also be granted leave for advanced study and research if his performance has indicated that such leave will be properly utilised. Such leave at reasonable intervals, should prove to be of benefit to the university as well as to the teacher.

95. The Commission wishes to emphasise that it holds the principle of academic freedom in the highest regard. It believes, however, that academic freedom can best be defended by emphasising the parallel, principle of academic responsibility. The teacher has to instruct and to interpret; to study and to explore knowledge to its farthest bounds. In this he must be encouraged, not hampered. New ideas are often unpopular, both with the public and with the authorities; academic freedom protects the teacher from the caprices of superiors and the whims of society. It is his right to impart truth in his field of competence as he understands truth, to search for new truth and new understandings regardless of where the search may lead him or whom his discoveries may affect.

96. The principle of academic freedom, however, has never meant that the teacher may do as he pleases. It means that the teacher is free to work, but it does not mean that he can be free from work. It guarantees him the right to think, to study, to grapple with truth especially in his own field; it by no means gives him the right to miss lectures, slander colleagues, agitate among the students, undermine the lawful authority of the university, or generally to disregard his social and administrative obligations as a member of the university community. These in no case can be regarded as legitimate academic activities but are in fact a negation of academic responsibility.

VIII. The Selection, Appointment and Promotion of Teachers :

97. We have come to the conclusion that existing procedures for the recruitment, evaluation, and promotion of teachers are defective and must be improved.

98. It is necessary to lay down the basic minimum qualifications of teachers at various levels. To teach undergraduates at the pass level the minimum qualification should be a high second-class master's degree; to

teach the major subjects for honours students or at the post-graduate level, a Ph.D. degree or possession of a recognised research qualification in the subject is required. These are higher requirements than at present. It will not be possible strictly and at once to apply our recommendations. Existing staff will be expected to bring their qualifications up to the basic standard, and should be given the opportunity to do this as soon as possible.

99. Those teachers who do have the minimum qualifications, and few have more than the minimum, should be given every stimulus to undertake study and research. We recommend :—

- (a) that the universities organise summer courses for their staff, including college teachers to acquaint them with the latest development in their subjects ;
- (b) that the Ministry of Education establish a central summer school to organise 10 or 12 weeks' courses in the various disciplines on a rotating basis, designed for all teachers and conducted by eminent Pakistani and foreign scholars. The results of examinations at the end of the course should become a part of the teacher's permanent record and should be the basis of his increment and promotion.

100. Since the strength of a teaching faculty depends upon the quality of the professor, particular care is needed in his appointment. He should be selected by a Committee appointed by the Chancellor, consisting of the Vice-Chancellor and four others, two of whom should be experts in the subject concerned. The selection should be strictly on merit, which may be defined as proved teaching ability, knowledge of the subject to be taught, accomplishment of significant research, a record of constructive and helpful relationships with students, and the power of leadership. In the selection of other staff the professor, if he has been selected in the way we suggest, can properly be given considerable voice, and should, therefore, be added to the Committee. The Committee will doubtless look for the same qualities as go to make a professor, or, in young candidates, the promise of them.

101. The period of probation should be long enough to give an adequate opportunity to decide whether the initial judgement was correct. We therefore, recommend that it be extended from two to three years, and that confirmation should in no circumstances be regarded as a mere formality. The confirmation should take effect from date of the original appointment.

102. When confirmed, a teacher should be placed on a contract or tenure basis within his rank. Salary increments within the rank should be given as an effective stimulus for work as well as a recognition of good performance. At present unfortunately they tend to be neither. In the universities and Government Colleges salary increments have become automatic. The efficiency bar is generally included as a part of the salary schedule, but only at one or two stages and usually at points which have ceased to be of much significance as a stimulus. There is reason to believe that crossing the efficiency bars has become little more than a perfunctory operation.

103. Promotion should be given in recognition of superior achievement and not on the basis of mere seniority. At present, promotion is given mainly on the basis of a seniority alone and in such a situation length of service becomes a more valuable asset than academic eminence or distinguished performance.

104. We are not unmindful of the danger inherent in a system of selectional promotion, and it is therefore necessary to establish a system to ensure fairness and objectivity. The method of evaluating a teacher which we use today is neither systematic nor comprehensive, and it is not used effectively for his selection, confirmation, the grant of increment, and promotion. The existing form of confidential report is phrased in such general terms that it is of little value, and such questions as, for example, "What is the quality of his work?" lead to meaningless generalities and give scope for personal bias. The questions must be precise and refer specifically to every aspect of a teacher's work. If evaluation is to be effective it must pinpoint weaknesses and strengths. It is not enough, for example, merely to say whether a teacher is a good research worker; the attempt must be made to identify his qualities and his defects as a research worker. Judgements must be substantiated with reasons and evidence. Reference must be made to his basic interests and curiosities, the extent and consistency of his effort, his ability to plan his research, the soundness of his approach and methods, the progress he is making, and the actual results he has so far obtained. We therefore recommend that a detailed form of confidential report be prescribed which would allow of a treatment in detail of every aspect of teacher's work.

105. The work of the Professor should be evaluated by a committee appointed by the Chancellor with eminent educationists of known integrity as members and the Vice-Chancellor as the Chairman. For other staff, work of evaluation should be done yearly by a committee consisting of the head of the department and two subject experts appointed by the Vice-Chancellor.

106. Confidential reports, however carefully devised, cannot by themselves ensure the attainment of quality by university teachers. Together with these, to guard against any slackening of effort, there must exist reasonable scope for promotion for teachers of outstanding ability. To create more openings for the university teachers we therefore recommend that the number of Professors and Readers, taken together, should be increased until it is roughly equal to the number of Lecturers.

107. Moreover even within this limit the number in each rank should not be so rigidly determined as to prevent the appointment of a really competent and highly-qualified person, merely because no appropriate vacancy exists. Perhaps one of the most serious limiting factors on current recruitment is the rigid determination of posts. It is quite common for universities in the West to staff their faculties in such a manner that they are able to get the best men, irrespective of any classification of posts, and to give them positions suitable to their qualifications and standing. One often finds in such universities more posts in the higher than in the lower categories, or *vice versa* depending on the type of person that the university has been able to recruit.

108. If quality is to be ensured, it will be necessary to maintain a satisfactory ratio of teachers to students. Every university and college must, therefore, have an adequate number of teachers with requisite qualifications so that they are able to meet satisfactorily the various needs of all the students of that institution. What is of prime importance is that the syllabus for each subject must be properly covered. What is equally important is that each student must get individual attention to the extent that is absolutely necessary for him. Whatever number of teachers is reasonably required in a university or college for the above purpose must be made readily available. It is not for us, we feel, to lay

down rigidly the ratio of teachers to students. The figure would naturally vary according to the size of the class, the subjects taught, and the levels offered. What we do say is that there should be enough teachers to ensure that tutorial groups and groups for practical work are not too large, that they meet with sufficient frequency, and that lecturers do not have to handle large unwieldy groups.

109. In view of the great difficulty which both universities and colleges have in finding staff of the right quality, particular attention must be paid to attracting and retaining in university work people with the right personal and academic qualifications, and to the discovery and training of persons who show aptitude and promise. Vigorous attempts must be made to persuade citizens of Pakistan qualified to be teachers, who have undertaken service in other countries, to return to share in our national responsibility for higher education. These attempts will have to be accompanied by the offer of a salary, amenities, and conditions of service sufficiently in keeping with their attainments. We must also seek out for future advancement those young people already serving in junior posts, and give them the opportunity for further training both in Pakistan and abroad. Where we are not yet able to find qualified Pakistani teachers, we should endeavour to recruit teachers from other countries, who should be used in the training of our own teachers.

110. We also recommend the establishment of national Scholarships or Fellowships for young people who have shown exceptional promise at the level of the Master's or Ph.D. degree. Similarly, we recommend the establishment of a limited number of senior Professorships for persons of recognised eminence. The advantages of international contacts in the field of higher education are well-known and need not be elaborated here. We feel that a programme of this kind will invigorate our present leadership and prepare those who will one day follow in their steps. We have already suggested that the Fellowships should be awarded by a Standing Committee, including all the Vice-Chancellors, and that appointment to national Professorship should be made by the Ministry of Education.

IX. Student Welfare and Discipline :

111. We have evidence that a high proportion of our students are altogether unsuited for university education. We can illustrate this by one example : the percentage in 1957 of students obtaining pass marks, after two or more years of study, was as follows :—

				<i>Punjab</i>	<i>Dacca</i>
Bachelor of Arts	...	...	...	34.3	30.5
Bachelor of Science	...	...	...	28.8	54.0
Master of Arts	...	...	...	44.7	79.5
Master of Science	...	...	...	52.6	84.0
Bachelor of Science (Home Economics)	...	...	...	43.7	—
Final Professional (Medicine)	...	...	...	47.5	27.0
Final Professional (Dentistry)	...	...	...	43.8	—

We consider that only one conclusion can be drawn from these figures. However faulty the teaching or limited the facilities, the plain fact is

that we are allowing into our colleges and universities many thousands of students who are foredoomed to failure, and who know they are. Here is a major cause of indiscipline.

112. The public is well aware of the past record of student agitation. Those who have discussed the matter with us leave us in little doubt that the morale of the student community is not high and that student discipline is a major problem. The reason frequently advanced for this is the absence of a proper relationship between the teacher and the student. It will be necessary to consider in some detail the background of the student before we are able to make recommendations for the improvement of teacher-student relations.

113. The normal college student is still growing and will continue to grow most of the time he is in college. His pattern of growth is uneven, and this creates many problems. During periods of rapid growth the tends to be physically awkward as he has to learn to control limbs and muscles that are changing in size and structure. This awkwardness may lead to self-consciousness, embarrassment, and a desire to withdraw socially. He is at an age when he must adjust himself to impending manhood.

114. Unfortunately physical growth at this stage outstrips emotional maturity, creating in the process the unique character of the late adolescent. Realising that he is physically adult, the adolescent reaches out for intellectual and social independence from authority, but he does so with some misgivings. He wishes both to accept and to reject authority at one and the same time, and these conflicting attitudes of rebellion and dependence are in general little understood. He is alternately idealistic and cynical, optimistic and depressed, confident and uncertain, aggressive and docile, courageous and fearful; in a word he is both adult and immature. Although he enjoys the thought of making his own decisions, he worries about the consequences and fears the freedom he so anxiously seeks.

115. Entry into the university represents for many the first extended absence from their homes and villages and from parental control. His parents and his village friends may be illiterate or have very little education, and the gap between them will continue to widen during his university years. Intellectually and socially, the student and his family will become strangers holding different values and governed by different standards. Although these changes are often recognised, the reasons for them are not understood or accepted, and they create a sense of bewilderment and often bitterness. The student has lost contact with his parents and found nobody to replace them.

116. At the university, the student will come into contact, possibly for the first time, with young people from different parts of the country and of different social strata. Their different behaviour and attitudes will create feelings of uncertainty and confusion.

117. If ever young men and women are in need of sympathetic understanding, of guidance without domination, it is now. The need is so important that we must immediately devise a scheme of guidance for them by persons who clearly recognise their problems.

118. College and university students can only be guided by persons of stature. Although the adolescent resists domination, he is susceptible to example. Adolescence is an age of hero worship, when young men and women seek models for their own behaviour and character. The teacher is a natural idol. If he is to set an example, he must be a good teacher and a dedicated scholar. He must also be a person of warmth and understanding with a deep-seated human interest in his students and one who can naturally win their confidence and respect. We recommend that each teacher should be assigned a small group of students who shall be his particular concern and for whom he would serve as counsellor and guide. It is to be expected that the ability shown by the teachers in handling this task will vary, but we believe that if university authorities attach to this personal role of the teacher the weight and importance it deserves, a desire to improve will rapidly grow among the teachers. Indeed, we believe that many teachers would greatly welcome a lead in this matter.

119. We recommend that an organised programme of guidance and counselling should be established at each college and university in which every student would be assigned to a teacher for guidance. Under this programme the teacher would be required to meet the students assigned to him regularly during term and at such other times as may be necessary or advisable. This should form a part of the student's cumulative record. No teacher should be assigned more than twenty students and in so far as possible, only those studying in his field of specialisation or in an allied field. A student's record should contain as much information as possible on his background, interests, abilities, performance, and problems. To facilitate the working of this programme an inservice training scheme should be initiated to enhance the teacher's understanding of students, their problems, and effective counselling techniques. In addition, the universities should attempt to train a few persons to a high level of competence who would be able to work with students having severe psychological and emotional problems.

120. We recommend that universities and colleges provide greatly increased facilities for sports, games, and athletics, and foster all wholesome outlets for the growing energy of the student. These facilities will help develop not only physical skills but also the team spirit. We urge an expansion of our traditional programmes of dramatics and debates, and the creation of many new activities that will hold the interest of every student. Each college and university should put a senior member of its staff in charge of development and co-ordination of all non-academic activities of the students. His specific responsibilities might include, among others, guidance, admissions, and orientation of new students.

121. We expect high standards of self-discipline from our students but have so far done very little to control and direct them in the use of their time. Regular monthly examinations, together with weekly tutorials, we believe, will promote the habit of sustained and serious study.

122. There is, however, a major practical difficulty. The routine for the majority of our university or college students is so devised that almost every day they get two to three hours off in between lectures and laboratory work. Once the system of monthly examinations and weekly tutorials is introduced and it is made clear that these will eventually largely determine the student's record, he will naturally feel inclined to do some serious work during his off-periods. But unfortunately in most of our colleges and

universities there is no room to which a student can go and work at his books. We have heard time and again of libraries which are so small that they can accommodate only a handful of students, or which are closed at the very times when the students most need to use them. We have already recommended that every teacher should have a private room on the campus, and we attach equal importance to our recommendation that every student should have somewhere to go and work. The right and obvious place for him to work is the library, which in our view is a much more important part of the university than it has been considered hitherto. We make detailed proposals for library development in paragraphs 129—133 below.

123. We wish to commend the projects recently undertaken at the University of Dacca and the University of the Punjab to improve student-teacher relations, a task of vital importance. These relate to the construction of a student-teacher centre with facilities for relaxation, recreation, cultural and social activities, as well as a cafeteria. It is hoped that in this atmosphere students and teachers can develop the friendly contacts so necessary for the improvement of relations between them. These centres will facilitate an organised system of student guidance. We recommend, therefore, that similar projects be initiated at every college and university. On each campus facilities should be developed where teachers and students may meet informally and thus an institution-wide recreational, social, and cultural programme be organized. These should include a cafeteria to serve simple, inexpensive, meals for both students and teachers; rooms for indoor games, a lounge for relaxation and recreational reading; and a meeting space for small, group activities.

124. In order to achieve the atmosphere proper to a university it is highly desirable that they be located outside congested urban areas. Suitable land should be made available to them and regulations laid down forbidding the alienation of this land for other than university development purposes. It is essential that our higher educational institutions have the buildings not only for classrooms, laboratories, and libraries, but also for the proper accommodation of the students and for a varied and challenging corporate life. Buildings need not be elaborate and expensive; they should rather be functional.

125. There are, of course, historical reasons for student unrest. The struggle for independence was unique in that it embodied two distinct efforts that began at different times but ended together. These efforts employed with singular success both passive resistance and civil disobedience. They depended for their success upon the participation of both the student and the teacher. It is to the credit of the academic community that it made a valuable contribution to the cause of freedom.

126. Unfortunately, once independence was achieved, the teacher was not allowed to return to his classroom and laboratory, nor the student to his studies. The politician has since then continually attempted to embroil the academic community in partisan politics. To achieve his purpose he has pitted student against student, student against teacher, and, when it has suited his purpose, both against the lawful authority of the university. The result has been to destroy the influence of the teacher and slowly to undermine the moral of the academic community.

127. If the integrity of our colleges and universities is to be maintained and they are to fulfil their rightful functions, we should not allow the campus to become an arena for partisan politics. It is also time that

both teachers and students realised that the momentous battles for independence are behind us. It is imperative that colleges and universities rid themselves of those who serve the ignoble interests of groups outside the academic community. The future of Pakistan will be poorly served by dissension, agitation, and political activity on the part of the academic community. It is for our colleges and universities now to direct their energies to turning out highly educated young men and women who can apply their knowledge and their skills to building up a welfare state. This cannot be achieved through political activity. It rather requires rigorous attention to academic tasks and productive work in the sphere of social service. In another portion of this report we have outlined programmes which we believe should be undertaken by our students. We are confident that if they attack these tasks with the vigour, enthusiasm, and idealism characteristic of youth, the nation will have cause to recognise gratefully that our students can contribute as much to the building of Pakistan as they did to its creation.

X. Libraries and Laboratories :

128. Higher education cannot function without two particular kinds of equipment, and the fact that both are at present in short supply gives special cause for concern. One is books and libraries, which are the raw material of scholarship ; the other is scientific equipment and laboratories.

129. *Libraries.*—We have already stated that every college and university should have a library large enough and open long enough to act as a work-room where all students are able to study privately during off periods and outside college-hours. We believe, moreover, that the library is at the very heart of the idea of the university, and that the books with which it is stocked, the librarians who serve in it, and the kind of use which the students make of it should reveal the extent to which it is discharging its real functions as a powerhouse of learning.

130. Almost all our libraries are short of books, and the stocks they have are in many cases seriously out of date. It is clearly necessary both to increase the annual appropriations for the purchase of books, and to be highly selective in their choice. A demand for increased budgets is not enough. Book selection is an exacting task, requiring teachers who are up-to-date in their subjects and willing to spend time and effort in advising the librarian in the best use of resources which will always be limited.

131. The use made of the library will depend very largely on the extent to which the teacher, particularly in tutorials, is able to stimulate and guide the reading of his students. Our libraries have languished because of our tendency to think of education as the memorisation of textbooks and notes. If the teacher is to establish the true process of learning he will constantly need to recommend particular books, or chapters of books, and to take his students to the library.

132. We do not believe that students can appreciate the true value of books unless they have ready access to them, are encouraged to move freely among them, and are allowed to handle and consult them to decide which are most appropriate for detailed study. In introducing the open shelf system, discretion will have to be exercised because some books are scarce and expensive. Nevertheless, a formula must be devised which will make even scarce and expensive books readily available to meet the genuine requirements of students. We are sure that if teachers were seen more frequently in libraries they would be able to set an example and to raise their tone.

133. *Laboratories.*—An accepted adjunct of each science department is its laboratory, which is used both to help students understand established theories and to provide scholars with means for seeking out new ones. In this age of amazingly rapid development it is by no means easy however, to say what should be the minimum equipment of a physics or chemistry or biology laboratory for undergraduate and post-graduate study. Large expenditure on science-teaching equipment is inevitable; and yet we are justified in asking why a college must have in its store-room an expensive piece of apparatus when it is perhaps used only once a year for purpose of demonstration, a purpose which might perhaps better be fulfilled by a moving-picture or a film-strip, or even by a simple diagram. Again, in the interests of economy it is difficult to see why certain items should not be shared by several colleges. It would seem reasonable for each of the universities to select certain fields of scientific specialisation at the post-graduate level, so that all of them do not have to provide the equipment for all specialities.

134. At the undergraduate level many of our laboratory procedures have been described as perfunctory and lacking the educative value to justify the time and expense involved. We have been told of students copying results from one another or putting down what they guess the expected outcome to be. This should not be so. An experiment is not really an experiment unless the student works from given data towards a conclusion which is for him unknown. This process becomes educationally valuable not so much in the matter now learned—which might perhaps be better described in the textbook—but in laying the basis for later true experiment, working from the known to the unknown. The student learns first of all a procedure, then the use of apparatus, then perhaps the devising of new apparatus for new purposes. Above all he learns, and must learn if he is to be a true scientist, the ideals of objectivity, pain-staking work, scrupulous honesty and integrity. If the “practicals” in our laboratories do not promote these qualities, they will be a waste of our resources. The more clever student may arrive at the right conclusion by guess-work and thus feel tempted to avoid extended experiments of his own. He must, however, try to correct this attitude and concentrate on serious and extended experimentation. Where science is concerned guess-work, however, brilliantly done, is always to be discouraged.

135. At the still more advanced level our science laboratories in the universities will have to be selective. Leaving applied research for the most part to the professional institutions and to the research institutes, the equipment required by a research scholar or a group of research scholars in fundamental research, if beyond the routine equipment of the laboratory, will have to be specially devised and erected in terms of the particular project involved. It will have to be financed from special funds or specific appropriations in accordance with careful planning and budgeting.

136. The head of a science department will seldom be satisfied with the equipment of his laboratory or with the funds provided for keeping it up-to-date, as the steady stream of development will constantly require new apparatus. At the same time it is possible that an older piece of equipment can be used to illustrate a principle as effectively as a new one, and a piece of home-made apparatus more cogently than a ready-made one.

137. We believe that the laboratories in our colleges and universities must be adequately equipped in terms of teaching and in the requirements that are basic to any form of research in the subject concerned. We believe, too, that this adequacy is not necessarily synonymous with expense, and that many usable devices can be evolved from materials that are cheap and locally available. The criterion of what is necessary in a science laboratory should basically be what the alert, effective teacher finds necessary, and not merely decorative or entertaining, to bring to his students an understanding of the principles of the science. As far as research is concerned, the laboratory should clearly have the necessary equipment for specific projects.

138. The Commission has viewed with considerable interest the experiments that have been tried in providing facilities during the long summer vacation for students to undertake supplementary study to improve their readiness for the regular programme or to make up deficiencies. It is recommended that these experiments be continued vigorously in all our colleges and universities in spite of the difficulties of climate and problems of administration, for we believe this to be in line with the other recommendations we have made regarding the fullest possible use of our resources. It does not seem economic for the buildings and equipment of our institutions of higher education to be out of use for a total of some sixteen weeks during the year. It would be only fit and proper to make available to our earnest young students, during vacation, all the facilities of a university or college laboratory and the expert guidance of the teachers, especially those undertaking the summer course. For this they will be required to pay a reasonable additional fee. This will result in a two-fold benefit. It will mean the availability of laboratory facilities to the students for a longer period on the one hand, and some addition to the teacher's income because of the extra work in connection with the summer course on the other. They should receive a certificate of attendance and of work done, which should be of value to them when they seek admission or employment.

139. We also commend the organization of work camps during the summer in which students may learn the significance of social service, have the joys of serving their fellow men, and appreciate the fun and dignity of physical labour. It is to be hoped that all college and university students may be required to have this work camp experience during the vacation period.

X. The Functions of Universities :

140. We must recognize the four possible ways in which a university may function (a) as a unitary-teaching university ; (b) as a federative teaching university ; (c) as a teaching and affiliating university ; and (d) as a purely affiliating university. We have already said more than once that the true university—and this has been the case since universities were first founded in the Middle Ages—has the two-fold function of teaching and research, which are in turn the complementary activities of the true scholar. Under such a concept the university is primarily a corporation of scholars, of teachers and taught pursuing the common tasks of learning and research. Such tasks can properly be carried out only in conditions which permit close, intimate, and continuous contact between teacher and student.

141. In this sub-continent, universities began from the opposite end of the scale, as affiliating and examining bodies. They recognized colleges as qualified to teach to a specified standard, they set the syllabuses, they conducted the examinations and they granted the degrees. In many cases the universities did no teaching at all, in others they confined themselves to post-graduate teaching or to the supervision of post-graduate teaching by colleges working in co-operation with them. Gradually, affiliated colleges grew in number, and were represented on the councils and boards of the university. In this way they came, quite unintentionally, to exercise a certain influence in university affairs. When an increasing proportion of the colleges allowed their own standards to fall, they also brought down the standards of the whole university. With the standards of colleges so lowered it was impossible for the affiliating universities to maintain high levels of attainment. The whole process, in effect, led to the emphasis being placed on the passing of examinations rather than on the joint pursuit of learning and scholarship.

142. We feel that this separation between teaching and examining institutions has led to the deterioration of standards and must now be reversed. Indeed, the harmful effects which large affiliating universities exercise on educational standards were realised long before independence and a number of teaching universities were established, including the one at Dacca. After independence, a few more universities have been established in Pakistan with limited territorial jurisdiction but strong teaching departments.

143. We are convinced that this is a step in the right direction and that this process should be pursued vigorously. Our policy should be to encourage universities to strengthen their programme of teaching and research and effectively influence the colleges. It is essential that the number of colleges affiliated to any university be strictly limited.

144. A teaching university need not be large, nor need it attempt to organize teaching and research in many subjects. It should, however, offer a balanced programme of studies including the basic Arts and Sciences. Our universities need not teach every subject. It may well be that a neighbouring affiliated college is in a position to develop a strong teaching programme in some subject or group of subjects. In such cases it should be encouraged to do so through recognition of its syllabuses and perhaps even of examinations. An experiment in this direction has been tried with some success in the Institute of Public and Business Administration which, although an integral part of the University of Karachi, enjoys considerable freedom.

145. When we speak of establishing more universities, we are suggesting nothing new and nothing that should cause uneasiness. Nearly thirty years ago the Punjab University Enquiry Committee recommended a bold programme of the development of "mofussil" colleges as potential university centres. Similar suggestions have been made throughout the intervening years and we believe that this is the answer to some of the difficulties facing our higher educational system. The Indian University Education Commission also advocated the opening of new teaching universities. We feel that the time has come to implement these recommendations and to develop some of the colleges in East and West Pakistan as potential university centres to be converted in due course into small teaching universities.

146. Some of the universities have a manageable number of affiliated colleges and can easily influence the standards in them. This, however, is not the case with the Universities of the Punjab and Dacca with their large number of colleges. To relieve the pressure on these two universities it will be necessary to restrict the grant of affiliation to colleges and to transfer some of the existing colleges to the new universities when they are established.

147. The University of the Punjab may for example prefer only the colleges in Lahore or its close vicinity to be affiliated to it or to be brought into same form of federative relationship. The question which colleges are associated with it and in what form is of secondary importance. What is important is that this oldest of our universities should establish the highest possible standards of teaching and research.

148. To relieve the pressure on the University of the Punjab, we are of the opinion that Multan, Lyallpur, and Rawalpindi, which are favourably located for the purpose, should be developed as university centres. The number of students studying for the degree and higher examinations in each of these centres is enough for a university. In view of the transfer of the Capital from Karachi to the Rawalpindi area, we recommend that priority be given to the establishment of a university there.

149. The University of Dacca started as a teaching university, but since 1947 it has been obliged to take up affiliating functions. The University is anxious to restrict its programme to teaching and research on its own campus. We appreciate this anxiety and agree that its work or affiliation should be restricted to colleges in Dacca which in federation or otherwise may fit in with the programme and ideals of the university.

150. There is a strong body of opinion in East Pakistan in favour of the immediate establishment of an affiliating university so that the two existing universities, particularly Dacca University, may be able to concentrate on teaching and research. As a matter of principle, we are not in favour of a purely affiliating university, and we would like to encourage instead the trend of university development already indicated in the preceding paragraphs. We therefore recommend that one of the potential university centres in East Pakistan be converted into a university. This university should undertake a programme of teaching in a restricted number of subjects and be empowered to affiliate colleges.

151. The four younger universities of Sind, Karachi, Peshawar, and Rajshahi, all with small numbers of affiliated colleges are in a position to offer good programmes of teaching and research and thus to influence the standard of teaching in the affiliated colleges.

XII. The Colleges :

152. In the preceding section we have said a good deal about the colleges, and our criticism of the standards in some of them may have unwittingly created the impression that we are unappreciative of the services rendered by the colleges. On the contrary, we place high value on the contribution that some of them have made to the cause of education. Indeed, the association of some of the older colleges with the universities is a matter of pride to both. Their teachers are honoured no less than the teachers of the universities. If some colleges are held in lower esteem, it is because they are poorly staffed and equipped and have caused a deterioration in standards. The colleges occupy an extremely

important position in our system, and we are anxious that they should continue to do so in the future.

153. We are of the considered view that no new college should be allowed to function unless it has adequate resources. Unfortunately during the last few years many colleges have been started without fulfilling the conditions laid down by the universities for affiliation. Government is not free from blame, because it has itself established a number of colleges which did not possess suitable buildings or equipment. The privately managed colleges were quick to follow the example. The universities also became lax in enforcing rules of affiliation either under external pressure or in their own anxiety to seek popularity. To allow affiliation to a college which lacks staff, accommodation, and equipment is an act of disservice to the nation and to the students. We feel that it is the plain duty of a university to withhold affiliation wherever necessary.

154. Privately managed colleges have been working under severe handicaps. With a few exceptions, they have never received adequate financial support from Government, which has spent its limited resources almost exclusively on its own colleges, and this not so much on consolidation as on expansion. At the same time private colleges have too often been founded for purposes of prestige rather than to meet a genuine educational need. Once founded, neither the patrons nor the staff have taken the necessary steps to consolidate their financial position.

155. We are anxious that these colleges should play a worthy role in the national development and would, therefore, like to make a few suggestions for their improvement.

156. First, the management of these colleges should be placed in the hands of a small Board of Governors who should be selected on the basis of their eminence in the fields of education, trade and industry and public service. A person of outstanding eminence should be invited to be the Chairman of the Board, and he should be given a suitable honorarium. In particular, we would suggest that some of the eminent persons who have retired from public service may be persuaded to accept such a responsibility. We have no doubt that their association with the Boards would stimulate the much needed public philanthropy. We are also eager to associate eminent business men with educational effort, and we hope that they will be willing to work on such Boards.

157. Secondly, Government should give adequate financial support to the colleges. It is not enough for an educational institution to have a large enrolment of students; it can only prove its value by its ability to provide to its students adequate facilities for their education. Provided the management is satisfactory and has been able to raise a substantial amount of money by private philanthropy, Government should give such college suitable financial support.

158. Finally, the members of the college staff should help the management in attracting financial support from the public. This should not be difficult if the teachers are able to show high standards of attainment and maintain an effective contact with the community which the college serves.

159. To revert to the question of the affiliation of a new college, the management should satisfy the university that it can meet a part of the maintenance cost of the college from its own resources. To this end, the college should raise an endowment fund, capable of providing a minimum

annual income of Rs. 25,000 or give a guarantee in some acceptable manner of its ability to provide such an annual contribution. We urge that the management should make a strong effort to raise an adequate endowment fund so as to give a sense of security to the staff. Once affiliation has been granted, the university should see that the college continues to maintain high standards. There should be periodical inspections, and if the inspection reports are unsatisfactory, the university must not hesitate to withdraw affiliation.

160. We have stressed the importance of colleges appointing competent staff. Owing to the continuous increase in salaries and in the cost of supplies, educational expenditure is becoming increasingly heavy. It seems therefore desirable that the costs should be shared in some reasonable form between students' fees, contributions from the management and grants from Government. If the costs increase further, as we fear they will, owing to the constant increase in the cost of living, the additional burden should also be proportionately distributed between the three. Provided that the colleges are not operating on a commercial basis, it is reasonable to expect that they will be able to raise the necessary funds through the three sources that we have mentioned.

161. We wish to stress that Government grants should not be given automatically either on the basis of the size of the college or its enrolment. Indeed, in prescribing rules of grant-in-aid it will be necessary to give consideration to various other factors, e.g., the programme of work undertaken by the college, the qualifications of the staff, and the reputation which it has built up. We have stressed throughout the report the importance of quality in education. We have also stressed the need for scientific and technical education. It would therefore be necessary to take into consideration the type of courses offered by a new college before sanctioning any grant. Nothing would be more disastrous than that Government should fritter away its limited resources on aiding colleges which do not possess any inherent strength and which do not meet the new educational needs of the country. Moreover, Government grants should be fixed on a three year basis so that the colleges may be able to determine their programme of development accordingly.

162. We have already emphasized the need for consolidation. As a consequence of the separation of the present Intermediate classes from the degree colleges, some of the colleges will find themselves with only a small number of degree students. We recommend that the appropriate authorities should undertake a survey to determine which of them should be allowed to continue as degree colleges. Such consolidation, we believe, is necessary for the sake both of efficiency and national economy.

XIII. Constitution and Control:

163. We have considered the existing provisions of the constitutions of the universities and feel that these provisions need to be modified to improve their control and administration. Some of the important reasons for modification are set forth below.

164. We have emphasised throughout the importance of teaching universities and have suggested a bold policy of reform. Our existing Acts are drawn up mainly on the old pattern of London University. London University has changed its Acts along with the times, and although some of our universities have also carried out some modifications of their Acts, the basic structure still remains the same. We have already

stated that although in the peculiar conditions of Pakistan our universities must continue to affiliate colleges, their predominant function must be their own programmes of teaching and research, upon which we lay the greatest emphasis.

165. The primary function of a university is its programme of teaching and research. This means that the Academic Council and the Boards of Study should assume a greater importance than hitherto in the structure of the university.

166. We have also constantly emphasised the importance both of high standards in teaching and research and of building up the character and integrity of our students. This means that the teachers must work together as a team and thus set a worthy example for the students. The development of the team spirit among the teachers is unfortunately hampered by a sense of rivalry caused by frequent election to university bodies. The way in which these elections are conducted at present encourages unhealthy practices among the teachers and seriously disturbs the sanctity of academic life. There are numerous instances where junior members of staff have got themselves elected by mere manoeuvres to Boards of Studies or Academic Councils in open competition with the heads of their departments. Again, in some universities, the non-educational element has actively exploited the differences between the academic groups and converted the university bodies into arenas of acrimonious political debate and conflict. This has had a most unsalutary effect on the working of our universities, and we therefore feel that the element of election should be curtailed.

167. The administrative structure of the university should be so designed as to deal expeditiously with the problems relating to teaching and research. There is therefore no place in our universities for bodies which are cumbersome or unwieldy. For example in some universities the Senate or Court consists of 150—200 members, including a large number of elected members, some of them politicians. A Senate so constituted can quickly become an arena of political conflict, and thus be unable to make the right decisions or to make them quickly. On the other hand, we feel that the Academic Council needs to be expanded to include not only teachers but also persons from outside who, by virtue of their eminence in the academic field, can make a valuable contribution. If the Academic Councils could be expanded and improved in this way, the Senate or Court would eventually become unnecessary.

168. The powers of the Chancellor and the Vice-Chancellor are not properly defined in the existing Acts, and if they are to perform their duties effectively, it is necessary that their powers and responsibilities should be so defined.

169. We are fully conscious of the fact that conditions vary in different parts of the country, and therefore it is not possible, nor desirable, to have a uniform pattern of legislation. Moreover, we envisage the universities to be of various sizes and of different types—unitary, federative and teaching-affiliating. While it must be the task of the appropriate authorities to frame the constitutions of the universities, we feel that the new Acts should provide for certain essential reforms. With this in view, we suggest a re-definition of the functions, responsibilities, and powers of the Chancellor, the Vice-Chancellor, and other bodies and officers of the universities, and a clear line of demarcation between their academic and administrative functions.

170. *The Chancellor of the University.*—The Governor of the Province and, in the case of the university in the federal area, the President of Pakistan, should be the Chancellor of the University. By virtue of his wide experience and his eminent place in the administrative set-up of the country, he should be in a position to make a signal contribution to the welfare and progress of the university and play a positive role in its administration. He should receive from the Vice-Chancellor the projected programme for the university on a two-or three-year basis, according to the allocation of grants from the government, and also an annual report from him on the working of the university, especially on the progress made within that programme. The Chancellor should have the power of visitation and special enquiry, and also of approving the University Statutes. He will appoint the Vice-Chancellor, make nominations to the Syndicate, and set up an appraisal committee for the evaluation of the work of Professors and Readers.

171. *The Vice-Chancellor* appointed by the Chancellor, should have a term of service long enough to allow him to develop and implement a significant policy for the University. He should be accountable to the Chancellor for the just and proper performance of his functions. The Vice-Chancellor will be the chief academic and administrative officer of the institution, charged with the responsibility of giving effect to the provisions of the University Act and the Statutes framed thereunder. He should be vested with the necessary powers to carry out these responsibilities.

172. *Departments and Boards of Studies.*—Departments of Studies will consist of the teachers of the relevant subject. The Vice-Chancellor will appoint one of the teachers as head of the department to plan and coordinate the work of the department. It is recognized that some individuals are more suited to administrative work than others, and the head of a department need not necessarily be the most senior teacher.

173. For each subject there will be a Board of Studies, responsible for the preparation of courses and syllabuses, and for recommending panels of examiners. In the case of a teaching university, the Board of Studies should consist mainly of the teachers in the university with one or two experts in the subject from outside. So far as affiliating universities are concerned, the Boards of Studies in each subject should also include teachers from affiliated colleges and one or two specialists from outside.

174. *The Academic Council or its Equivalent.*—As defined in the provisions of the existing Act, the Academic Council should be responsible for the courses of study in general, for the teaching programmes, for examinations, for the award of degrees, for all academic matters, and especially the maintenance of academic standards. It should consist of thirty to seventy members depending upon the size and scope of the teaching activities of the university and the number and status of its affiliated colleges. In the case of a teaching university, which has no affiliated colleges, the Academic Council may consist of about forty members of whom a few must be from outside, who are concerned with education and who are qualified to contribute to the deliberations and functions of the Council. All university Professors and such Readers as are heads of departments should be members of the Council, and there should be some representatives of university teachers other than the university Professors and the Readers who are heads of departments. It should also have on it the Principals of affiliated degree colleges and a few prominent

scholars and educationists from outside. It is expected that the Academic Council will become the focal academic body of the university, functioning frequently and effectively under the Chairmanship of the Vice-Chancellor to develop and implement the policies of the University.

175. *The Syndicate*.—The Syndicate should be the chief executive body of the university. It should be responsible for the preparation of budget estimates and for supervising the financial affairs of the university, for its property, and for the appointment of its personnel and their maintenance. In order that the business affairs of the university may be carried on efficiently and unobtrusively, the Syndicate must be a compact body of competent persons, perhaps nine to eleven in number, under the chairmanship of the Vice-Chancellor.

176. In view of the pivotal position of the Syndicate we have given careful consideration to the question of its composition. Since the university is an institution of national importance, financed mainly from public funds, it is necessary that members of the Syndicate should be persons of eminence and with a high sense of public responsibility and have, besides, an intimate knowledge of the problems and needs of the university, together with a genuine interest in its welfare and progress. While we consider it particularly desirable in the context of our prevalent conditions to allow the teachers to concentrate on academic work, freed from administrative responsibility as far as practicable, we nevertheless suggest a small representation of the teaching staff on the Syndicate with a view to maintaining some link between the academic and administrative sides of the university.

177. *Special Committees*.—We make no pretence of laying down a complete university constitution. The Academic Council and the Syndicate will have committees and agencies and officers of whom we make no mention at this time; but there are three types of committees which we consider essential. The first is the Planning and Development Committee, which, consisting of five to seven members, will advise the Vice-Chancellor and work under his chairmanship. It should consist of two or three representatives each from the Academic Council and the Syndicate and have power to co-opt others for expert advice. The second is the Permanent Selection Committee for each department of the university. Its function would be to recommend persons to the Syndicate for appointment to the teaching and research posts, and it would be organised to carry on its work at two levels, namely, for the selection of Professors and Readers on the one hand, and the Lecturers on the other. The Selection Committee should be composed of eminent people nominated by the Chancellor. In case of a difference of opinion between the Selection Committee and the Syndicate, the matter will be referred to the Chancellor for decision. Thirdly, we recommend that a committee for the evaluation of the work of Professors and Readers be set up by the Chancellor, with the Vice-Chancellor as the Chairman; and that a similar committee for the evaluation of other teachers in the university should be appointed by the Vice-Chancellor himself.

178. As stated earlier in this chapter, suitable procedure for the appraisal of university teachers must be worked out and individual records carefully kept. Furthermore, it is most desirable that rules of procedure be framed and embodied in the new Acts, for removing incompetent teachers as well as for the recognition and promotion of those who are able and effective.

179. *Administrative Officers.*—The Registrar of a university should be a person of such academic qualification as to be able to serve independently in one of the higher academic posts of a university. Thus he will have an understanding of the academic needs and processes as well as status in dealing with his colleagues on the teaching staff. He should of course have considerable aptitude and ability for administrative work, a grasp of university affairs, a knowledge of procedure and an ability to express himself in effective language. He should serve as Secretary of the Academic Council and of other general academic bodies. For the administrative side of the university there should be another officer who should be a competent person with training and experience in business administration. He should work directly under the Vice-Chancellor and as the Secretary of the Syndicate. He should be responsible for the work of the administrative section of the university office, and for the immediate supervision of the non-academic employees. If the university has no separate financial officer, he should further be responsible for the funds of the university and for their proper accounting. In larger universities there may be need for more administrative officers to carry out specific responsibilities.

180. We recommend that the appropriate authorities may devise the Acts expeditiously so that the university may soon be able to concentrate on their basic function of teaching and research.

XIV. Co-ordination in Higher Education :

181. Where resources are limited, essential facilities can only be provided if we take the greatest care to avoid over-lapping and duplication. Especially in the field of science and technology, where the costs are very high, it is necessary to pool resources for the achievement of the goals that no single organization can hope to reach by itself and to this end to set up co-ordinating organizations.

182. We have learnt from the experience of recent years that democratic pressures have not always moved in the direction of the wisest use of resources. Too often they have worked in the direction of unnecessary expansion rather than consolidation, with consequent lowering of standards. The popular voice has ever been ready to demand the opening of new colleges, while ignoring the needs of those already in existence. Attempts to merge two institutions into one of real excellence have usually been resisted.

183. The planning and development of higher education require time for careful and dispassionate investigation. Once a plan has been adopted, its implementation has to be carefully watched. Individual institutions must have adequate and guaranteed grants so that they can plan their programmes on a long term basis. On the national level, university development must be viewed in the light of the needs of the nation by men free from political pressures and unwholesome institutional rivalry. Full co-operation with the plans of other institutions must be ensured, and a common approach determined in dealing with similar problems. It is for such reasons that several countries have set up University Grants Commissions, distinct both from the universities and the government. These, on the one hand, protect the universities from political and other pressures, including interference from the government itself, and, on the

other, guide and control the universities in the direction of their development and the correlation of their efforts. Great Britain has had such a Commission for a number of years. One has recently been set up by India, and Australia hopes to establish one very soon. The Chairman of such a Commission is usually a full-time, paid official and other members may be part time paid officials. The Commission maintains an adequate Secretariat and is assisted by panels of experts.

184. A University Grants Commission, to be effective, must be of high calibre. Its members should be persons of eminence and integrity who are prepared, whenever necessary, to make unpopular or unpleasant decisions in the face of public criticism and local opposition. Moreover, they must be men in whose judgement the government and the universities have full confidence.

185. The responsibility of such a Commission extends far beyond the mere distribution of government grants. It has to study the whole programme of higher education and make it effective at the national level. In making allocations, it considers the needs of each university in consultation with its authorities and gives grants to those projects which fall within the national priorities. In particular, through the instrumentality of grants, it ensures the division of responsibility for specialized fields amongst the various universities. The Commission also includes colleges in its purview inasmuch as they form an essential segment of higher education. The Commission has also the authority to withhold grants when the circumstances are exceptional and the fullest investigation proves it to be necessary.

186. We consider a University Grants Commission to be essential if higher education is to be developed on sound lines. It is necessary, however, to state two minimum requirements. First, the funds placed at its disposal should be adequate to justify the appointment of a Commission with persons of standing. Second, it should have the power to award grants for both capital works and maintenance, and the colleges should come within its terms of reference.

187. At present the universities receive Rs. 25 lakhs annually from the Central Government, and that is solely to cover the costs of capital expenditure. This amount is much too small to justify the setting up of an effective Commission of the kind we have described. We hope, however, that as the recommendations of this Report are implemented, much larger funds will become available, when it will be proper to set up the Grants Commission. We are convinced that a Grants Commission of the type indicated above is essential, and we hope that following the example of other Commonwealth countries, Pakistan will have such a Commission in the course of two or three years.

188. In the meantime, it will be necessary to effect co-ordination through the Ministry of Education. This is a matter of great importance, and since our resources are small and the need for co-ordination essential, we suggest that the Ministry of Education should set up an *ad hoc* Advisory Committee including all the Vice-Chancellors of the universities, to co-ordinate the development of higher education and to award grants. The Ministry itself should take the initiative with regard to the development of new universities and colleges. This Committee

should have panels of experts as advisers and should ensure the maintenance of a proper balance among different disciplines. This Committee should prepare the ground for the establishment of a full Grants Commission.

189. We feel that the needs of the colleges should receive adequate consideration in this programme of development. The colleges enrol a large number of students and form an essential part of the structure of higher education. They cannot be expected to produce work of quality unless they also receive a suitable measure of support.

XV. The University and the Community :

190. We recognise that if the universities of Pakistan are not to become institutions isolated from the daily life of our society, if they are to be looked to with confidence, and if they are fully to exercise their influence in the development of a progressive nation, they must consciously adopt measures to bring themselves into touch with the people around them and develop that contact imaginatively through fruitful service. This effort is all the more necessary because of the natural cleavage that takes place between the interests and activities of the highly educated and those of the insufficiently educated. We have acknowledged the need for the scholar of an atmosphere conducive to quiet study, and yet it is not our intention that he should remove himself from the pursuits of common men and women. We do not want a scholar who retreats to an ivory tower and forgets about the world around him, who loses sympathy with ordinary people and who ceases to be a member of the national community.

191. Each of our universities should undertake a sociological survey of its local community, and participation in this survey should be open to all members of the university. Such a survey should result in some understanding of the kinds of people in the community, their occupations, their customs, their economic status, and their special problems. When this information is gathered and made available to the staff of the university, the next step logically will be to study how the life of the community may be improved and how its problems, whether they are economic, social, or educational, may be met and solved. The final stage will be for the members of the university to be of service in effecting these improvements in the life of the community.

192. Clearly such a programme will have to be developed gradually over a period of years. Because of this we suggest that the head of each institution should appoint a member of staff specifically for the study of its community responsibility, for publicising it and for enlisting the active support of the students and teachers of the university. Such a programme will have, we are sure a very great value to all concerned ; to the community because of the eventual services rendered ; to the student because it brings him into contact with reality and channels his surplus energies into constructive lines ; and to the teacher because it offers him a challenge to relate his work and his studies to the needs of the community and keeps him as a human being aware of the problems of his fellow men.

193. Such a programme can arouse great enthusiasm among the students because it presents them with a very real and urgent challenge. We must, however, try to protect the student from activities during term

that will interfere with his proper work or provide him with an excuse for neglecting it. His participation must be carefully controlled and for the most part confined to vacation periods. At the same time there should be possibilities of limited participation in community service as a restful change of occupation for the student.

194. The most natural form of community service that the university and the college can undertake is the educational one for which it is equipped; it can arrange lectures and classes for people not regularly enrolled. These must be worked out on the basis of surveys, study, and experience, according to the needs, desires, and response of the people for whom they are intended. In their simplest form they can be free popular talks on topical subjects of the day; and almost every department can produce interesting material for such lectures adapted to the intellectual experience of their audiences. For the intelligentsia of the community, for people who have had their education, but who now want to keep mentally alert and up-to-date in their knowledge our suggestion is that special courses of study be provided accordingly to the demand, to last for anything up to ten to twelve weeks, with reading prescribed and suggested and an examination at the end. Those who have given a creditable account of themselves in the examination should be awarded certificates of merit by the university. For such courses there should be a fee payable and the teachers involved should have additional honoraria for this extra work. In this way the courses will be taken seriously and can be worth a great deal to the public and in good-will, to the institution. Another procedure in this connection may be the lecture or course of lectures given outside the university, for which teachers, and in some cases senior students, go on invitation to places which have very few intellectual advantages and where a hunger for learning can be realized and developed. One of the most fruitful methods of educational service to the community, however, will be the organisation of serious and somewhat extended courses of study during the summer vacation. Such courses, which might also be open to its own students, would be arranged by the university either on its own campus or, if accommodation can be secured, in the cool air of the hills, with fees charged to make it a self-supporting proposition and with the teachers paid to compensate them for the additional work involved.

195. Students' participation in community service is rather different and must be considered in the light of various factors. We have already mentioned the need to make sure that their regular work is not hampered. However, the possibility of participation on the part of students in such useful organisations as Village Aid may well be explored. The student does as a rule have abundant energy, and he has a long vacation offering him ample scope for his energy. It would definitely be worthwhile to put this plentiful source of energy to some use for the community especially since all the agencies and organisations that we have are not really adequate to meet the needs of our people. Every university will be well advised, we think, to appoint an officer whose specific responsibility will be to devise means as to how best our students can participate in social service. Where the university has a department of social work, it would seem natural for that department to enlarge its responsibilities to include such a programme. It can certainly help in finding ways for the students of all departments to be socially useful.

196. We would recommend that the Ministry of Education in collaboration with other appropriate authorities formulate a policy requiring

each university student to spend before graduation a certain minimum period in full-time summer work. This can take several forms. First, students may be asked to spend one or two months in gaining "work experience". This we consider essential to bring out an appreciation of work and a social awareness of the dignity of labour. Secondly, they may spend this time in participation of a programme of civil or military defence as a short period of national service would be invaluable in promoting a sense of discipline and patriotism. Finally, they may undertake a programme of adult education. In the case of women, particular attention may be given to nursing and adult education.

197. The motivation in these various projects of community service should be an appreciation by each member of the university, teacher and student alike, of his own participation, ultimately, in the life of the community and of the nation. It should be one of the functions of higher education to enable the student to put a high value on his neighbour and his welfare, whatever the latter's walk of life. It should show him the advantage of attempting to meet social needs on a scientific basis and by co-operation rather than by purely individual effort. His academic life, unless it is wholly removed from reality, should constantly offer him the challenge to bring his knowledge into contact with the actual world around him. There must, in fact, be no gulf between him and the community; and for this reason we have considered it worthwhile to lay emphasis on the university's obligations and opportunities in the life of the community.

198. We believe that the vitality of our colleges and the quality of their work can be enhanced if a further step is taken to bring them into contact with the world around them. We have been impressed by the growing practice in the West of bringing into academic life men who have distinguished themselves in civil, defence, or foreign service, or in trade and industry. Such men have a wealth of experience and high professional competence. They have been employing the products of our universities and should know the kind of work our graduates will be required to do and the quality they need.

199. We believe that if men of this kind can be associated with colleges through their Boards of Management, they will raise the status of our institutions and inspire students and teachers alike. As Pakistan matures, there will be a growing number of senior men who have become eminent in the service of their country and who, after retirement, can be fruitfully associated with these institutions. Some of them, because of special qualifications or experience may be invited to serve as visiting professors with the responsibility of giving a specified number of lectures a year in the fields of their eminence. Such an association, we believe, will be of great practical as well as educational advantage.

HIGHER EDUCATION

SUMMARY OF RECOMMENDATIONS

II. Higher Education as a Distinct Stage :

1. Higher education should be recognized as a distinct stage, and the present intermediate classes should be transferred from the jurisdiction of the Universities to that of the Boards of Secondary Education. Such Boards should be established immediately where they do not already exist. (20—24).

III. Admission Requirements and Degree Courses :

1. Admission to the universities should be after the completion of the present Intermediate stage covering twelve years of study. (28).

2. Universities and colleges should determine their own requirements of admission on the basis of :

- (a) the candidate's performance in the higher secondary examination ;
- (b) his achievement and cumulative class record during the previous stages of education ;
- (c) his aptitude for higher education to be determined by scientifically standardized tests. (29).

3. The courses of study for the Bachelor's Degree in Arts and Science should be extended from two to three years. (31).

4. There should be two courses, pass and honours, and each university should decide in the light of its circumstances how best to organise them. (34).

5. The duration of the course of study for the Master's degree should be two years. (36).

6. The minimum duration for the Doctor's degree course should be two years, and admissions should be restricted to those who have secured at least a second division in the Master's degree examination and have demonstrated a capacity for independent research. (37).

IV. Subjects of Study :

1. Courses and curricula should be revised and improved so as to bring them up to date, and to provide for the growing needs of the country, particularly in the sphere of scientific and technical studies. (39).

2. An Institute of Modern Languages should be established for the specialised training of high-grade linguists to meet the needs of trade and industry and the various civil and defence services of the country. (39).

3. In social and natural sciences particular stress should be laid on the practical aspects of current problems. (40).

4. New subjects like sociology, home economics, public and business administration, and journalism, which have acquired special importance recently, should be developed. (42).

V. Examination in Higher Education :

1. Examinations should be an assessment of the student's ability and achievement and not of his memory and data-retention capacity. (45).

2. The examination system should be reorganised, and the award of degrees should be based on the performance of the student in (a) the final comprehensive examination conducted by the university, carrying 75% of the total marks, and (b) his record in periodical tests and class work, carrying 25%. Students should obtain pass marks in (a) and (b) separately. (48).

3. The certificate issued by the university should show the name of the institution from which the candidate has appeared, and should also give separately his marks in the university examination and in class tests. (49).

4. Pass marks should be fixed 40% in each paper, and 50% in the aggregate. Minimum marks for second division should be 60% and for first division 70% of the total marks. (51).

5. For the pass degree in arts subjects the present concessions for private candidates should be continued for five years but the examination should be a separate external examination. (58).

VI. Research and the Universities :

1. All teaching and guidance at the honours, master's and doctorate levels should be done as far as possible by men who possess adequate research qualifications or experience. (63).

2. Each university should establish a Committee for Advanced Studies to consider programmes in the field of teaching and research and their promotion and co-ordination within the university. No department should be allowed to undertake Ph.D. work unless this Committee is satisfied that the necessary facilities are available. (65-66).

3. The universities should, through the Committee of Vice-Chancellors, co-ordinate the programme of advanced studies and research and award junior and senior fellowships. Adequate funds should be made available for this purpose. (67).

4. The terms and conditions of service of senior teachers, particularly Readers and Professors, should specify their obligations to carry on research work throughout their period of service in the university. (72).

5. In addition to doing fundamental research, which is their main responsibility, university teachers should also give attention to research in fields which affect national development. However, programmes for applied research should not be undertaken at the expense of fundamental research. (68, 75).

6. To co-ordinate the work of various universities, councils, research organizations, and institutions, the Ministry of Education should set up a high powered autonomous Board consisting of eminent scientists and representatives of these organizations. The function of this Board should be to review the plans and co-ordinate the programmes of research of the various organizations and institutions in the light of national requirements. But the freedom and authority of the individual organizations to plan and execute the programmes of research should be ensured. (76).

VII. The Teacher in the University and his Function :

1. The primary task of a teacher is to stimulate the interest of the student in his field of study, to awaken a spirit of enquiry, and to develop habits of industry, patience, and perseverance. He must, therefore, remain up-to-date in his field of study and contribute to the advancement of knowledge. To perform these functions effectively he should be present in the university or the college throughout the working hours and should be engaged in the following work :—

- (a) Teaching (including lectures, laboratory demonstration, and tutorials) ;
- (b) Research ;
- (c) Personal study both for professional competence and class preparation ; and
- (d) Student guidance. (77—79).

2. Although variations to utilize the particular talents of individual teachers should be permitted, their work load should normally include all these functions, and should total 1500 hours per academic year, distributed approximately as follows :—

Arts Faculty

			Lectures and Tutorials	Student Guidance	Seminars and Research Guidance	Personal Study & Research	Adminis- trative and other Activities
Professor	...	...	400	100	300	300	400
Reader	...	...	500	100	200	400	300
Lecturer	...	...	700	100	100	400	200

Science Faculty

			Lectures	Tutorials & Practicals	Student Guidance	Seminars and Research Guidance	Personal Study & Research	Administra- tive and other Acti- vities
Professor	...	200		200	100	300	300	400
Reader	...	300		300	100	200	300	300
Lecturer	...	300		500	100	100	300	200

3. To enable the teachers to discharge these duties adequately, the following facilities should be provided by the universities and colleges :—

- (a) Separate rooms for private study and student guidance ;
- (b) Laboratories and equipment for research ;
- (c) Libraries, well stocked with books and professional journals ; and
- (d) A cafeteria providing wholesome food at a reasonable cost. (90).

4. In view of the fact that the academic year is only thirty-six weeks, the system of 'casual leave' during term time should be abolished. However, in case of urgent necessity teachers may be permitted 'emergency leave' not exceeding five days in a year. (92).

5. Teachers of universities and colleges should have :—

- (a) Adequate salary scales commensurate with their qualifications and calculated to ensure a reasonable standard of living.
- (b) A contributory provident fund.
- (c) Proper medical care for themselves and their families.
- (d) Opportunities for periodic study leave at reasonable intervals provided performance has indicated that such leave would be properly utilized. (94).

VIII. The Selection, Appointment and Promotion of Teachers :

1. Existing procedures for the recruitment, evaluation, and promotion of teachers are defective and should be improved. (97).

2. Basic minimum qualifications of teachers at various levels should be laid down. Existing staff should be expected to bring their qualifications up to the basic standard as soon as possible. Those with the bare minimum qualifications should be given every stimulus to undertake study and research, and summer courses should be organised for this purpose. (98-99).

3. The selection of Professors should be made by a committee consisting of the Vice-Chancellor and four other members appointed by the Chancellor, two of whom should be experts in the subject. Selection should be on merit defined as proved teaching ability, knowledge of the subject, accomplishment of significant research, and a record of constructive and helpful relationship with students. In the selection of other staff, the professors should be added to this committee. (100).

4. The period of probation should be raised to three years. Confirmation should be given on the same basis of merit as for selection. (101).

5. Increments and promotions should be given in recognition of superior achievement and should not be awarded automatically or on the basis of mere seniority. (102-103).

6. Evaluation Committees should be appointed to assess annually the work of professors and teachers. For this purpose a detailed form of

confidential report should be prescribed which should take into consideration all aspects (teaching, research, student guidance, etc.) of the teacher's work. (104-105).

7. The rigid determination of different categories of posts should be avoided, and departments should be staffed with the best men available by giving them positions suitable to their attainments. (107).

8. To overcome existing shortages in teaching personnel, special measures should be adopted for their recruitment and training which should include :—

- (a) the identification and recruitment of qualified Pakistani nationals studying or working abroad ;
- (b) the temporary recruitment of qualified foreign teachers, and
- (c) the selection and training of the most promising young graduates as National Scholars. (109-110).

IX. Student Welfare and Discipline :

1. An organised programme of counselling and guidance should be developed through which each teacher would be responsible for a small group of students. The teachers should be sympathetic to the students and should be able to recognise their problems and their pressures. This programme should be under the direction of a senior member of the staff. (117—119).

2. Each college and university should provide the following facilities so that students are kept busy during the whole day in healthy activities :—

- (a) Adequate provision of playing-fields.
- (b) Organised programmes of dramas, debates, music and indoor games. .
- (c) Student-teacher centres for informal meetings of staff and students.
- (d) Ample library space for study during leisure periods and after working hours.
- (e) Cafeterias for inexpensive meals under sanitary conditions. (120—123).

3. The integrity of colleges and universities should be maintained and they should not be allowed to become an arena for partisan politicians. Students should not participate in politics, or serve the interests of groups outside the academic community in activities inimical to the orderly conduct of the institution and its academic programme. (126-127).

X. Libraries and Laboratories :

1. University and college libraries should be spacious enough and remain open long enough to meet all the requirements of students and staff. (129).

2. The annual appropriation for the purchase of books should be increased, and books should be carefully selected keeping in view the best use of limited resources. (130).

3. Teachers should stimulate and guide the reading of their students and should expect them regularly to go to the library for study. (131).

4. As far as possible students should have ready access to the books in the library. (132).

5. Laboratories in colleges and universities should be adequately equipped with due regard to their particular programmes of teaching and research. But the purchase of expensive apparatus that is rarely used and for which less expensive equipment can be effectively substituted, should be avoided. (137).

6. The use of college and university facilities for supplementary courses during summer vacation should be encouraged and considerably expanded to provide for a fuller utilization of educational resources. (138).

XI. Functions of Universities :

1. The two-fold function of the university is teaching and research. The university should therefore, be primarily a corporation of scholars pursuing the common tasks of learning and research, which can only be carried on in conditions permitting close and continuous contact between teachers and students. (140).

2. The harmful effects which large affiliating universities exercise on educational standards should be realised, and the number of colleges affiliated to the universities should be restricted. (142-143).

3. Potential university centres in East and West Pakistan should be developed, so that eventually they may be raised to the status of universities with their own programmes of teaching and research. (148—150).

4. One new university should be established in each wing at one of the potential university centres. (148—150).

XII. The Colleges :

1. Universities should lay down definite rules governing affiliation of colleges, and it should be their duty to enforce them strictly. These should include guaranteed financial resources to provide competent staff in sufficient numbers and adequate buildings and equipment. Private colleges should possess an endowment or reserve fund capable of providing a minimum income of Rs. 25,000 annually. (153—159).

2. The extremely important position of non-government colleges in our educational system should be recognised, and they should be managed by small Boards of Governors composed of men selected on the basis of their eminence in the field of education and public service, with a Chairman who should be an outstanding and distinguished person. (156).

3. Government grant-in-aid should not be automatic, and should be given only after considering the programme of work, the qualifications of the staff, and the reputation that the college has built up. Limited Government resources should not be frittered away on aiding colleges which do not possess any inherent strength and which do not meet the new educational needs of the country. (161).

XIII. Constitution and Control :

1. The existing University Acts should be revised to simplify administration and to strengthen academic functions. Since conditions in different parts of the country vary the authorities of each university should frame the Act to suit their circumstances. (167, 169).

2. The new Acts should, however, provide for certain essential reforms as follows :—

- (a) The Academic Council and Boards of Studies should be given greater importance. (165).
- (b) The 'elected' element should be curtailed. (166).
- (c) Large, unwieldy bodies should be eliminated. (167).
- (d) The powers of the Chancellor and Vice-Chancellor should be properly defined. (168).
- (e) The Syndicate should be a small body of eminent persons nominated by the Chancellor and should include some members of the teaching staff. (175-176).
- (f) Special Committees for (i) planning and development, (ii) the selection of teachers, and (iii) the evaluation of the work of staff, should be created. (177).
- (g) The academic and administrative sections of the university should be separated and placed under two different officers working directly under the Vice-Chancellor. (179).

XIV. Co-ordination in Higher Education :

1. For developing higher education on sound lines and for co-ordinating the programmes of universities and colleges, a Universities Grant Commission should be established within two or three years. It should study the whole programme and development of higher education in the country and make it effective at the national level. It should consider the needs of various universities (including colleges), and give grants for those projects which fall within the national priorities. It should divide responsibility for specialized fields among the various universities. (181—186).

2. Till such time as the Universities Grants Commission of the type indicated above is established, the work of co-ordination in the field of higher education should be done by an *ad hoc* Advisory Committee appointed by the Ministry of Education. This Committee should include all the Vice-Chancellors, and be assisted by a panel of experts. (187—189).

XV. The University and the Community :

1. Each university should develop a programme of community service in those areas in which it is competent to operate on the basis of an intensive survey of the community and its needs. (191).

2. Women students at the college level should participate in organized programmes either in nursing, adult education, or in training for civil defence. (196).

CHAPTER 2

PROFESSIONAL EDUCATION

A.—ENGINEERING EDUCATION

I. Introduction :

1. Industrially, Pakistan is in the initial stage of its development. It has still to become an economically self-sufficient nation capable of providing a rising standard of living for its growing population in terms of a greater abundance of better and cheaper food, clothing and shelter, of better and more efficient transportation, utilities and services—of all those things which spell contentment and well-being. To do this, in turn, means increased reliance on its own resources and freedom from over-dependence on imported goods, which do not of themselves increase a nation's wealth. There is one way, and one way only, for the country to generate wealth and become economically viable—by tapping the as yet unknown and unexploited wealth in our soil, our water and the products of our land and by discovering and developing processes for utilizing those materials and resources to the full. Science and technology have made such rapid strides during the present age that, before long, man will discover yet further riches of power and products from sun, sand and sea water. It will be necessary for Pakistani scientists to develop technologies to exploit the power and wealth of these agencies. The locating, exploiting and processing of our natural wealth are engineering function, and our success in achieving self-sufficiency will be largely a measure of our success in developing an engineering education which meets this challenge.

2. Pakistan has a vast manpower whose native skills are second to none. If these skills are properly trained, our abundant manpower should offer a natural potential to develop the country's economy on a sound basis. Otherwise this manpower would be a constant drag on our economy. The crux of the problem, in fact, is the creation of technology which will develop our natural resources and it is here that the scientist and engineer have a pivotal role to play. Indeed, the engineer's role will be even more demanding, for his is no back-room job ; he has to handle the materials, the machines and the men. To succeed in his task he must be sensitive to social forces as he is to the forces of nature, and have an understanding of human relations coupled with qualities of leadership. He must be able to inspire others through his own sense of professional honour and integrity, his resourcefulness, courage and determination.

3. In short, the type of engineer we need in Pakistan is one with vision and leadership, determination to grapple with local problems and materials, and a very broad training in modern engineering and technology. Unfortunately, our present engineering colleges are not properly geared to produce such men. They still bear the imprint of the past, when it sufficed to train engineers to staff public enterprises such as the Public Works Department, railways or irrigation works and the sole object was to produce men for government posts. At that level, first rate work was done, but a good deal of it was maintenance work which required technicians and not professional engineers of the creative type

Research was neglected and development engineering had scarcely begun. Yet this is a field where our standards of training must stand comparison with the best in the world, where training in all aspects of development engineering is essential, where research must hold a foremost place, and where our engineers must have the scope for their vision and talents and not be miscast in the important but secondary role of technicians. Quality, therefore, must be our main concern. A small band of able engineers who can solve the nation's technological problems is of greater value than an army of less competent men unable to identify or understand those problems.

4. But in addition to depth and breadth, engineering education must operate in yet another dimension; it must be dynamic if it is to reflect the ceaseless advance of modern scientific research of which engineering is the application. Engineering educators everywhere are continuously renewing their teaching, which scientific progress repeatedly brings to the verge of obsolescence. Our own educators will have the additional task of adapting their teaching to the nation's circumstances and producing graduates who cannot only think creatively, and dynamically but also operate imaginatively in terms of our own materials, problems, processes and manpower.

5. It is of basic importance to draw a clear picture of the type of engineering graduates we want to produce before proceeding to discuss details of teaching, courses, facilities, research and administration. It is a common criticism that our present engineering graduates are often averse to working with their hands and do not even know how to repair a machine. This criticism is well founded. There is no doubt that an engineer should be familiar with the design and capacity of machines and that he should be willing to use his hands to repair or operate them. In particular, it is necessary that he should have had field experience of industrial operation. Nevertheless, there seems to be a basic misconception regarding the true functions of an engineering. This misconception is due mainly to the fact that our educational system has so far concentrated on producing graduates in engineering without producing the equally important and more numerous personnel required for supervisory posts. In the chapter on Technical Education, we have made recommendations for the training of such personnel and it should now be possible for the engineering colleges to concentrate on producing the right type of engineer. The engineer's function is to apply technological processes through creative design to the control of nature's materials, and it is a waste of his training and talents and a loss to the nation to employ him below this level.

6. It is inevitable that the employer should influence the training given to the person he will employ. The fact that most of our engineering graduates have hitherto found work in government service is perhaps the reason why our engineering colleges have been too often content to train routine practitioners who can satisfactorily perform standardized tasks in a complex bureaucracy. But the rapid development of our country now demands the abandonment of this static approach. The colleges must train engineers able to think in the dynamic terms of human leadership and the development of local materials and processes adapted to our conditions.

7. To ensure that the talents of this new type of graduate are fully exploited, it will be necessary also for private employers to revise their traditional conception of the engineer's function and no longer be content with the unimaginative copying of foreign processes under the supervision of a technician. All employers, whether government or private, will in fact have to re-define their attitude to engineering if a teaching programme such as we are suggesting is to bear full fruit.

II. Objectives :

8. Proceeding from this analysis of the basic principles which should inspire engineering education, we consider that the principals of engineering colleges in co-operation with the appropriate authorities should evaluate and revise their present curricula and teaching practices so as to relate them to the following objectives :—

- (a) To give students a competence in applying the principles of mathematics and the physical sciences to the solution of problems related to the control of the forces of nature and the use of natural resources ;
- (b) To inspire students with a determination to use local raw materials whenever possible in replacement of imported materials and to develop techniques appropriate to the national labour surplus ;
- (c) To educate students in a sympathetic understanding of economic and social conditions and ways of life in our country ;
- (d) To develop in students a creative and imaginative approach to their chosen profession, a strong professional consciousness, a profound sense of personal honour, and integrity and the qualities of community leadership.

III. Admission Requirements :

9. The general considerations governing admission to higher education have already been discussed in the relevant chapter. So far as engineering is concerned, we recommend that the qualification for admission should continue to be Intermediate Science. As the future development of the country will depend largely on the quality of our engineers, it is necessary to ensure that the limited places in engineering colleges are utilized by students who have the necessary aptitude and ability to profit from such a course. We have suggested elsewhere that aptitude tests be developed to supplement examination results for admission to higher institutions. There is also need for such tests in engineering education and as they are developed and standardized they should be used along with examination results at the time of admission.

10. It is recognized that for some more time many students will keep on coming from a background where the use of tools and machines is almost unknown. This deficiency should not be regarded as a bar to admission. However, steps should be taken to remove this deficiency and to provide training during vacation in major engineering projects of government or private industry.

IV. Duration of the Course :

11. There is general awareness of the fact that a three-year course is wholly inadequate to train engineers of the desired type. In most countries the courses are of four years duration and there is a recent tendency to lengthen the duration still further. In the USSR we are told the courses have been raised to five and a half year's duration. The Engineering College at Dacca has always had a four-year course, and the Peshawar University has recently introduced a course of similar duration. The University of the Punjab had also adopted the principle of a four-year course for the Engineering College at Lahore, but Government sanction for the additional staff is still awaited. We recommend that all engineering courses have a minimum duration of four years and that this arrangement be applied immediately.

12. The diploma courses now being administered by engineering colleges should be transferred to the polytechnics and technical institutes.

V. Types of Courses :

13. The types of courses at present offered in our engineering colleges are designed to produce men for government service and are limited mainly to civil, mechanical, and electrical engineering. Except for mining, in which a course has been started recently at Lahore, and chemical engineering in which Dacca and Lahore offer a course, there is hardly any instruction available for training development engineers in many fields of great promise for Pakistan, such as metallurgy, mineralogy, ceramics and petroleum. Provision for their introduction should be made immediately as well as for strengthening the mining and chemical engineering courses.

14. Provision should also be made for courses in architecture in at least one college in East and West Pakistan. There is enormous wastage of valuable materials in present building construction which also falls far short of aesthetic and functional requirements.

15. At the same time, we must guard closely against expansion beyond the capacity of staff and facilities and against the mere proliferation of courses. We have laid it down as a basic principle that quality must come before quantity. Our colleges are at the moment experiencing great difficulty in appointing qualified staff—one college reports a shortage of 22 staff members. While it is important to obtain facilities for starting new courses in the fields in question, the first necessity is to obtain sufficient staff for undergraduate teaching in existing fields, and it would be an error to undertake expansion without prior consolidation. Poor quality teaching would be worse than none. We consider the proper staffing of engineering colleges to run the existing courses and to undertake the additional ones as a first priority and we are suggesting how best to achieve this objective.

16. Many have urged on the Commission the desirability of introducing courses in such specialized fields as marine, automotive, gas and electronic engineering. In the light of all the evidence, however, we feel that the immediate need in these fields is rather for supervisory staff and technicians and we have suggested the provision of these courses at the diploma level in our polytechnics. As regards degree courses, the general tendency is for the unification and simplification of courses rather

than their multiplication. Thus aeronautics and automotive engineering should form part of a properly planned course in mechanical engineering, and gas and ceramics technology a part of chemical engineering. Any specialization in these subjects should take place at the post-graduate level. We are suggesting, in the latter portion of this section, the introduction of post-graduate courses and some of the fields mentioned above would be most appropriate for specialization. Indeed, it is extremely important that studies in subjects such as geology should have a strong programme of teaching and research.

17. We have stressed the fact that engineers work with men as well as with materials. This means that teaching must be designed to develop an understanding of social and economic forces. It is, therefore, necessary that curricula include courses in social and humanistic studies and we would suggest that the colleges should aim, as the immediate target, at devoting about 15% of the total subject matter to them in all engineering and architectural courses.

18. It is also essential that academic study should be linked with practical work and it is, therefore, highly desirable that students should be able to acquire both field and industrial experience during summer vacations and that satisfactory performance should be a pre-condition for the award of degrees.

19. In determining the content of courses of study the following considerations should be basic :

- (a) The contents of courses must be kept constantly up-to-date in the light of progress in research and practice.
- (b) Special instruction must be given in the use of local materials and techniques adapted to the abundant availability of manpower.
- (c) All teaching and study must be imbued with a spirit of creative enterprise.
- (d) Engineering graduates should obtain an understanding of what tools and machines can accomplish, but not necessarily acquire skill in their operation.

20. Apart from these general considerations, we would like to lay particular emphasis on the importance of instruction in professional ethics. We therefore recommend that the courses of study should include a series of lectures on professional ethics. These might well be linked with the general programme which each college is expected to organize for students' guidance and character development.

VI. Examinations :

21. This matter is dealt with at length in the chapter on Higher Education. In engineering, as in other fields of study, examinations have almost exclusively been taken as the sole measure of a student's accomplishment. Staffs prepare the subject matter with an eye to them, students refuse to study anything not specifically required, and the whole issue hinges on performance in the few hours of "ordeal". Thus too much emphasis is laid on mechanical memorization of data and too little on initiative, sustained effort and problem solving.

22. A pass in the final comprehensive examination for the same reasons as stated in the chapter on Higher Education should still be required before a degree is awarded, but for the general evaluation this should be supplemented by the results of periodic examinations in which a suitable percentage of the marks would be based on problem work, home-work, laboratory reports, etc. The general question of the weightage to be allowed for periodic examinations and classwork for the final evaluation has also been dealt with in the chapter on Higher Education. For engineering, we recommend that the weightage allowed for periodical examinations, problem work, home work, and laboratory reports should be in the region of 25%, although teaching universities should be free to adopt an even higher percentage.

23. Finally, teaching should be so designed as to place the student under the necessity of making extensive use of reference works and journals in the college library, and all examinations should test his resourcefulness in applying engineering and scientific principles to novel situations rather than measure simply his data retention capacity.

VII. Post-graduate Instruction :

24. Post-graduate courses are as essential in engineering as in other disciplines. We are, therefore, anxious that such courses should be started in a few selected engineering colleges as soon as possible. We must, however, offer a word of caution. These courses must not be undertaken unless existing deficiencies in staff and equipment have been met and properly trained staff are available, without increasing teaching loads. When it is judged appropriate to introduce such courses, schemes for post-graduate study should be prepared in consultation with the staff working in the fields of engineering and physical sciences. Colleges offering such courses should stipulate that only the most successful and able graduates will be admitted.

VIII. Research :

25. Engineering research is of capital importance for Pakistan's future and its success in raising the standard of living of its people. This is true of all countries, but particularly so for us, for we have the urgent and inescapable problem of discovering and developing new industrial and construction materials and devising new techniques appropriate to our large manpower. The complicating factor is that very little research is being done by private industries, which means that an even greater responsibility falls on the engineering colleges in that respect. Engineering instruction without research is lifeless; whereas the encouragement of research is bound to quicken the pace of the nation's development.

26. The maintenance of standards and the duties and responsibilities of the teaching staff should follow generally the criteria laid down for science teachers in the chapter on Higher Education, with such variation as is necessary to meet the special requirements of Engineering Colleges. If these criteria are observed, it is hoped that the teachers of engineering colleges will find the necessary atmosphere for creative work. As regards engineering research, it should be broadly defined as essentially pertaining to industrial processes and construction and the material used in them. But the colleges should also undertake promising research projects which may lie on the border line between fundamental and applied

research. In developing this concept it will be necessary to provide staff members who engage in research with the necessary instruments technical assistants, laboratory and publication facilities and to give them reduced teaching loads and special recognition in salary and promotion. Younger staff members, particularly, should be encouraged to undertake research.

27. A staff committee or council presided over by the Principal should be set up in each college to plan its research projects. Younger staff members with the requisite qualifications should also be included. This committee should Co-ordinate its work with that of counterpart bodies in other colleges.

28. Apart from research work which might be initiated or carried out in colleges, there are many aspects of engineering where development possibilities can be viewed only from a national level. At the same time, the need will exist to co-ordinate research between colleges and government research laboratories. We are, therefore, in favour of the establishment of a Council of Engineering Research as an advisory body with sufficient funds to subsidize research and powers to co-ordinate and evaluate it.

29. For the above reasons, post-graduate work in Engineering Colleges should be regarded as one of their basic functions. We have already suggested in the Chapter on Higher Education the establishment of a Research Committee to review programmes of research and we make the same recommendation in the case of Engineering Colleges.

IX. Facilities :

30. Despite many complaints we feel that three of the four engineering colleges have on the whole adequate laboratory equipment for undergraduate teaching in the existing departments. It is for this reason that we give first priority to filling gaps in the teaching staff, for dedicated teachers will succeed with their students even with indifferent equipment, whereas elaborate equipment will be of little use if the teaching is bad. Deficiencies in buildings and laboratory equipment exist and should be recognized and corrected, provided a judicious balance between teaching strength and improvement in equipment is maintained.

31. Our people have not had the benefit of decades of experience of modern apparatus and equipment and have difficulty in realizing that a machine begins to deteriorate the moment it is installed. Inspection of laboratory equipment and even of college buildings reveals a tendency on the part of those responsible to neglect upkeep. Some of the professors and instructors leave the care of the laboratories and instruments largely to casual technicians and "mistris" with little or no supervision. We accordingly recommend that college principals make departmental heads responsible for laboratory upkeep and that they formulate, publish and strictly enforce policies and regulations for the maintenance of equipment and buildings.

X. Extension Courses :

32. Engineering knowledge and practice quickly become obsolete. Just as important as the proper training of new undergraduates is the provision of refresher courses for practising engineers so that they can

keep abreast of up-to-date engineering technologies. As adequate teaching staff is engaged, colleges should offer these engineers evening and other courses. Where regular staff members are not available for conducting such courses, colleges should be given the necessary funds and power to engage practising engineers to assist in organizing and conducting them.

33. So that we may create a scientifically minded community, it is extremely important that the public should, in some way, be associated with the work of the engineering colleges. We recommend, therefore, that instruction and exhibitions in applied sciences should be arranged for the lay public. In particular, we recommend the establishment of museums of sciences and technology which are now recognized as the most powerful media for arousing public consciousness in this field.

XI. Teaching Staff :

34. To raise the standards of engineering education, it is imperative that teachers work a full day every day of the academic year. We have already suggested a time-table for college and university teachers in our chapter on Higher Education and the workload suggested there for teachers of science subjects will apply in general to engineering teachers as well although the total load of the latter group may be somewhat higher because of the large amount of practical work involved in engineering instruction. As regards the allocation of time for research, we believe that rather than set a fixed amount of time for each teacher it would be preferable to leave it within the discretionary powers of the Principal to adjust the routine load of his teachers to allow time for research in accordance with the needs of the institution and the interest and aptitude of individual staff members.

35. There are several reasons why the engineering colleges have not been able to recruit adequate staff. First, the salaries offered are not competitive with those obtainable from industry or from the Public Works Department. Secondly, the colleges do not offer any programme in postgraduate teaching which would develop a strong teaching faculty in its subjects. The products of engineering colleges are rapidly absorbed in Government departments which offer additional benefits in the way of housing, while these attractions do not exist to encourage engineers to take up an educational career. Further, college appointment procedures are complex and cumbersome and vacancies are often left unfilled for long periods. There is nothing more harmful to educational programmes than delay in the filling of vacancies. Moreover, there is a rigid classification of posts into professors, readers, and lecturers, and often junior posts are left unfilled because suitably qualified personnel demand higher salaries consistent with their qualifications. This will explain why young men educated abroad do not always take up posts in these institutions and, when they do, are frequently discontented and eventually accept appointment elsewhere for want of promotion possibilities.

36. Subsidiary factors which militate against efficient staffing in colleges include the present under-staffing which makes it impossible to release teachers for advanced work abroad. In addition, libraries do not provide suitable and adequate scientific and technological literature, particularly current journals, which would keep staff members up-to-date in their subjects.

37. As teachers are the key to improvement in engineering education, no effort should be spared to recruit qualified staff and create the conditions which will attract them. In the first place, it should be recognized that teachers of engineering are not readily available, and that if they have to be attracted it will be necessary to give them a much higher salary than those in the field of arts, social sciences, and humanities. Accordingly pay scales should be raised appreciably, particularly the starting salary. Facilities should be offered in the way of suitable houses and medical benefits, and it is extremely necessary that each member of the staff should be given a separate office room on the campus. Secondly, employment procedure should be simplified. As has been said elsewhere, the existing rigid limitations in the different categories of staff should be removed and staff should be appointed at the rank their qualifications demand. It would be easier to secure the services of persons of outstanding qualities by invitation rather than by advertisement. Moreover, special efforts should be made to contact Pakistani personnel abroad for service in Pakistan. In a later chapter we are making specific recommendations for persuading qualified Pakistani nationals working abroad to take up teaching careers in Pakistan. Again, suitable engineering teachers should be sought from among the serving engineers to be seconded to the engineering colleges. It would be necessary to get the best men from the Public Works Department and to exclude their "rejects". Once recruited, they should be given all due facilities but it should be made clear to them that their performance in the engineering colleges would be evaluated to determine their future career. Finally, vigorous efforts should be made to recruit qualified foreign teaching staff.

38. As a corollary of the action suggested above, it will also be necessary to take appropriate steps to improve the efficiency of the staff presently working in the colleges. The staff should also be encouraged to go abroad for higher studies, particularly for research. Moreover, if they are to retain a practical approach, the teaching staff should be given opportunities for periodical field experience. For this purpose they could be deputed every three years to work for six months in a field project. In addition, college authorities should arrange practical industrial training for inadequately trained or inexperienced staff. Those whose work shows marked promise should be deputed to industrially advanced countries for higher studies and familiarization with new techniques and granted study leave for advanced study and research at intervals of about five to seven years.

39. The learned bodies play an important role in stimulating educational thought. Steps should, therefore, be taken to promote societies or associations through which staff members of the various engineering colleges can be brought into close contact with each other during vacations.

XII. Assimilation of Graduates into Employment :

40. As the products from the polytechnics become increasingly available and the engineering colleges start producing the right type of graduates, it will be necessary for the Government to modify its existing pattern of administrative services to ensure that diploma holders from technical institutes are employed for technician-type occupations, leaving

engineering graduates for their proper employment. Each category should have a salary scale commensurate with its qualifications and responsibilities.

41. So far, the Government has been the main employing agency and the product from engineering and technical institutes has not been employed in industry in any appreciable measure. It is in the interest of industry itself to engage trained personnel, and it is hoped that industry will soon start doing so. Otherwise, the Government may well have to intervene and to adopt measures for compulsion. It is obvious that Pakistan cannot make much progress in the fields of agriculture and industry if the products of engineering colleges and technical institutes are unable to secure suitable employment in private industry. In order that more engineers may be employed in the creative and projective atmosphere of private enterprise, it is recommended that the Public Works Department reconsider its organisation and activities so that much of its work may be transferred to private contractors and consulting engineers.

42. Manpower problems are continuing ones and it is extremely necessary that the needs for engineering graduates and polytechnic diploma holders should be periodically assessed to ensure a co-ordinated programme of training and research.

43. Students often require guidance in career possibilities and we suggest that colleges appoint a staff member as careers officer to advise passing out students on openings and conditions of service.

XIII. Administration and Control:

44. We have stressed that the standards in our engineering colleges must be equal to the best. Unfortunately this is not at present the case, despite the devoted efforts of some of the staff members. One of the main reasons is that our colleges have been treated as adjuncts of Government departments with a consequent tendency to gear curricula to departmental requirements. Departmental officers are busy people with heavy responsibilities and do not have the time to attend to the needs of educational institutions. The type of engineering education we have been discussing will flourish only in a truly educational atmosphere, where greater freedom can be achieved in developing programmes of teaching and research and appointing staff which is well qualified to undertake such programmes. We are convinced that unless the engineering colleges are detached from departmental control, they will never be able to develop on the right lines.

45. While there is general agreement that professional colleges should be detached from departmental control, opinions differ as to which of the alternative forms of control should be adopted. The Punjab University Commission had considered this matter and recommended that professional colleges should be given the status of "semi-autonomous institutions" to be raised to fully autonomous status when they were capable of doing advanced work in at least three faculties. More recently, the Planning Board has recommended that professional colleges should be administered

as constituent units of the universities. This is the way in which Peshawar University is administering its engineering college. We have given careful consideration to this question and come to the conclusion that it would be wiser to permit a flexible pattern of control than to insist upon a rigid one. The existence of some engineering colleges which are constituent units of a university and others which are autonomous institutions in themselves is quite common in other countries. The existence of these two kinds of institutions leads to a healthy competition between them and thus raises the standards of engineering education. We feel that the interests of engineering and technology and consequently the interests of national development will be served best by the establishment of a technical university (or institute of engineering and higher technology) in both East and West Pakistan. Such a step, we are convinced, would give these subjects the status and stimulus that are essential in our situation.

46. This recommendation is in line with modern practice in other countries. In the United States of America, where the engineering colleges usually form a constituent unit of a university, there are also a number of independent technological institutions the most outstanding examples of which are the Massachusetts Institute of Technology, the California Institute of Technology and the Carnegie Institute of Technology. Recent developments in the United Kingdom are even more significant where institutions of higher technology (with the right to confer degrees) are being developed at various centres. India has also undertaken to establish, apart from its engineering colleges, four institutes of higher technology in Eastern, Western, Southern and Northern India. Turkey has established a Technical University in Ankara and recently approached the United Nations through UNESCO for considerable financial assistance under the newly created Special Fund.

47. The general pattern in these institutes is to provide course at that first degree level combined with strong programme of post-graduate teaching and research. The courses at the first degree level include the basic technologies and such other branches of engineering as are of special interest to the country concerned. Of the total enrolment 25% or more are registered in post-graduate courses. As mathematics and physical sciences are basic to engineering, these are held in the same esteem as the specialized branches of engineering education.

48. In the chapter on Higher Education, we have emphasized the important role which teaching universities can play in rising educational standards in Pakistan. We believe that time has come for a completely new policy directed towards the development of teaching institutions at the highest level. The time is particularly opportune for the establishment of a technical university in Pakistan as we have currently in hand important development schemes in the fields of industry, power & irrigation which require large number of engineers. Moreover, with the settlement of the Indus water dispute Pakistan must undertake a major programme of irrigation construction, the successful completion of which will depend upon the existence of a bold and constructive policy of engineering education. For these reasons we believe that technical universities, one in each wing, should be established immediately. Once established, these will, we feel confident, give a new direction to higher professional education in our country.

49. The creation of new institutions and the strengthening of existing ones has been advocated for a long time but the implementation of such a policy has been delayed constantly by a shortage of teachers competent to offer instruction at this level. A lack of adequate teaching staff may still be advanced as the principal argument against this course of action. We believe, however, that qualified staff can be secured and that the creation of institutions of university status with opportunities for research and advanced teaching will in itself serve as an attraction to qualified engineering teachers. In a subsequent chapter we have made additional specific recommendations designed to provide the teachers that will be needed by institutions of this type.

50. We have considered the question whether these technical universities should be entirely new institutions or should be developed out of existing ones and we feel that this decision should be made at the appropriate time in consultation with the Provincial Governments on the basis of the needs of the province and the availability of qualified staff. It is clear that we have to increase considerably the existing facilities in our engineering colleges in order to meet the growing needs of Pakistan in the various fields of technology within the next ten years. The essential point is not whether the institutions through which we have to achieve this objective are completely new ones or developed out of existing institutions but rather that they maintain high standards of attainment and offer broad programmes of teaching and research in a wide variety of technologies at both the degree and post-graduate levels. We are certain that once these institutions have been established with properly trained staff, they will develop their own traditions and will produce individuals with the highest qualifications.

51. In summary then, we are suggesting that a technical university (or institute of engineering and higher technology) be established in each wing either as an entirely new centre or through the expansion and re-orientation of an existing college. In either case it would be necessary for such an institution to develop appropriate relationships with existing institutions in order to co-ordinate our efforts in engineering and higher technology.

A. ENGINEERING EDUCATION

SUMMARY OF RECOMMENDATIONS

I. Introduction :

A clear distinction should be made between the function of an engineer and that of a technician and the educational programme for each should be developed accordingly. (7).

II. Objectives :

1. The objectives of engineering education should be as follows :

- (a) to give the students a competence in applying the principles of mathematical and physical sciences to the solution of engineering problems ;
- (b) to inspire students with a determination to use local raw materials and to develop new techniques appropriate to our conditions ;
- (c) to educate students in a sympathetic understanding of the economic and social conditions and ways of life in our country ;
- (d) to develop in students a creative and imaginative approach to their chosen profession, a strong professional consciousness, a profound sense of personal honour and integrity, and the qualities of community leadership. (8).

III. Admission Requirements :

Qualification for admission should continue to be Intermediate Science. Aptitude tests adapted to local conditions should be experimentally developed to supplement examination results. (9).

IV. Duration of the Course :

1. In all engineering colleges the minimum duration of the degree course should be four years. (11).

2. The diploma courses now being administered by engineering colleges should be transferred to polytechnics and technical institutes. (12).

V. Types of Courses :

1. In addition to Civil, Mechanical and Electrical Engineering now taught in the engineering colleges, Chemical and Mining Engineering should also be included. Further new courses should be introduced in fields of great promise for Pakistan, such as Metallurgy, Mineralogy, Ceramics, Petroleum, and particularly those which deal with the exploitation of local resources. (13-14).

2. Curricula should include courses in social studies and the humanities to the extent of 15% of total subject matter to develop in the engineering student an understanding of social and economic forces. They should also include a series of lectures on professional ethics.

3. Practical training in the field and in industries should be arranged for students during summer vacations and satisfactory performance should be a pre-requisite to the award of degrees. (18).

VI. Examinations :

1. The examination should be an assessment of the student's ability and achievement and not of his memory and data-retention capacity.

2. The examination system should be reorganised and the award of degrees should be based on the performance of the student in (a) the final comprehensive examination conducted by the university (75%), and (b) his record in periodical tests and class work (25%). Students must obtain pass marks in (a) and (b) separately. (21-22).

VII. Post-graduate Instruction :

Post-graduate courses are an essential element of higher education in engineering as in other disciplines. These should be started in selected engineering colleges as soon as possible.

VIII. Research :

Engineering Colleges should undertake research in projects which may lie on the border line between fundamental and applied research, in industrial processes, and in construction and in the materials used in them. (26).

IX. Facilities :

1. Arrangements should be made to remove the existing deficiencies in laboratory equipment. (30).

2. Departmental heads should be made responsible for laboratory upkeep. (31).

X. Extension Courses :

1. Engineering Colleges should organize refresher courses for practising engineers and popular lectures and exhibitions for the general public. (32).

2. The Museums of Science and Technology should be established at various centres to arouse public enthusiasm for Science, Engineering and Industry. (33).

XI. Teaching Staff :

1. The following measures should be adopted to remove the shortage of staff in the engineering colleges :

- (a) Special efforts should be made to obtain the services of Pakistani personnel working abroad.
- (b) A research should be made from among the serving engineers for secondment of suitable ones to the engineering colleges.
- (c) Vigorous efforts should be made to recruit qualified foreign teaching staff. (37).

2. To attract the best-qualified people as teachers in engineering colleges the following steps should be taken :

- (a) The pay scales, particularly the starting salary, should be raised appreciably and facilities in regard to accommodation and medical benefits provided.. (37).
- (b) Employment procedures should be simplified and the existing rigid limitation in the different categories of staff should be removed, and staff should be appointed at the rank commensurate with their qualifications. (37).
- (c) Those members of the staff whose work shows marked promise should be sent abroad for higher studies on study leave at an interval of about 5 to 7 years.

XII. Assimilation of Graduates into Employment :

→ The engineering colleges should appoint a member of the staff as 'careers' officer to advise their students and alumni on career possibilities.

XIII. Administration and Control :

1. Since teaching and research can best flourish in a university atmosphere and since the engineering colleges are responsible for promoting a programme of teaching and research and for producing personnel who will develop the resources of the country, the colleges should be detached from departmental control. (44).

2. A technical university (or institute of engineering and higher technology) should be established both in East and West Pakistan. (45).

3. The new universities (or institutes of engineering and higher technology) may be established either as entirely new centres or through the expansion or re-organization of some existing colleges. In either case, it will be necessary for such an institution to develop appropriate relationships with existing colleges to co-ordinate activities in engineering. (51).

B. EDUCATION AND RESEARCH IN AGRICULTURE AND ANIMAL HUSBANDRY

I. The Importance of Agricultural Education :

1. Pakistan is essentially an agricultural country and an overwhelming proportion of its population is engaged and will continue to be engaged directly or indirectly in agricultural pursuits.

2. Despite this tremendous human effort, it is well-known that much of our farming remains at a subsistence level or little above it ; that the yield per acre is extremely low ; that primitive ways of farming still prevail ; that the pressures of an increasing population put continuous strains on our national food supplies ; and that our foreign exchange and credit resources have been seriously endangered by the necessity to import food.

3. Yet agricultural yield could not only relieve these strains on our economy and substantially raise our standards of living but also generate new sources of national wealth, through the export of surpluses and the exploitation of the many by-products—textiles, hides, plastics, paper, timber products, etc.—of agriculture. In addition, there are potentially great development resources in arid zones and in forestry.

4. The achievement of such aims implies the solution of problems which go beyond the sphere of education—problems of land tenure, the supply and control of water, soil conservation, and the development of the arid lands. But education and research have a role in the solution of all of them and in many a key role. Such education must, therefore, begin in the primary school, continue in the secondary school and higher education as well as in adult education and extension work. Provision is made in the chapters on Primary and Secondary Education for agricultural education suitable to these levels. Considering the importance of agriculture to Pakistan and the role which education can play in improving agricultural practice, we have suggested that agriculture be treated as an important subject in the school curriculum. In this section we are concerned only with agricultural education at the degree and post-graduate levels.

5. If these aims are to be pursued vigorously, it is reasonable to suppose that the requirements for graduates in agriculture and animal husbandry in government departments, semi-governmental agencies and private enterprises will continue to expand, with increasing population and growing application of modern agricultural methods. The requirements will no doubt vary between regions, but it is clear that our existing training facilities will need to be strengthened in order to meet these regional demands.

II. Objectives of Agricultural Education :

6. As in other professional spheres where great potentials for development exist, the over-riding aim of our college education in agriculture and animal husbandry should be to produce graduates with a high sense of vocation, a determination to apply modern knowledge to our agricultural development problems, as well as the qualities of leadership, imagination and personal integrity. Teaching courses and teaching methods should reflect these aims clearly.

7. More specifically, agricultural education at the college level is expected to produce graduates who will return to serve in the following capacities :

- (a) as farmers or managers of estates ;
- (b) in the appropriate sections of the Agriculture Department, Forest Department, Village AID, and other Government services ; in semi-government agencies such as the PIDC, and the Agricultural Finance Corporation ;
- (c) in the extension services of the Agriculture and Village AID Departments, where they will be charged with the important task of carrying modern agricultural knowledge to the farmer ;
- (d) in the agencies concerned with teaching and research ;
- (e) as teachers of agriculture in the secondary schools.

8. Many private enterprises are as yet unaware of the benefits to be had from the employment of agricultural graduates. It has been reported that in the USA there has recently opened up a wide employment market in this area of public life and that nearly 50% of agricultural graduates now find employment in trade and industry. Such enterprises as the food processing industry, for example, could well use our graduates in agriculture. We may expect employment possibilities to open up in this area in the coming years.

III. Academic Qualifications for Admission to a Degree Course :

9. Discussions with the principals and staffs of colleges and with officers of the Agriculture Departments have convinced us that the course should be five years after Matriculation. High Schools are scattered throughout the provinces and it has been found easier to attract good boys from rural schools to this course after Class X. Intermediate classes are, on the other hand, located mainly in urban areas and boys tend to become accustomed to urban ways of life, lose their interest in agriculture and are reluctant to make a career in it. For this reason it has been found easier to develop a sense of vocation among those admitted after Matriculation than among those entering at a later stage.

IV. Selection for Admission :

10. An agricultural extension worker will be more successful in the locality where he is fully acquainted with local agricultural conditions, local customs and psychology. Since the majority of agricultural graduates will be absorbed in the extension services, we recommend that in determining admission into the agricultural colleges due attention be given to proportionate representation of students from districts, so far as this can be reconciled with merit.

V. Duration of Course :

11. As stated above, the views of staffs of colleges and of Government officers have convinced us that, due to the advances in agricultural research and to the fact that many new subjects such as food technology and farm mechanics are full of promise for Pakistan, the duration of the course should be five years after matriculation in order to produce graduates of quality. This is in line with the decision of Peshawar

University to have a five-year course after matriculation and the recommendation of the Committee of Enquiry for a five-year course after matriculation in the Agricultural College, Dacca.

VI. Curricula :

12. We propose here to give only the broad principles on the basis of which the courses and curricula may be framed by the appropriate authorities of the universities :

- (a) In the first two years all students will be taught portions of such basic sciences as are intimately connected with and form the foundation for their professional studies. During these years, the elementary and general courses in professional subjects should also be introduced.
- (b) In the 3rd and 4th years, the curriculum should consist mostly of advanced studies of the professional subjects. These are to be supplemented by such basic sciences and allied disciplines as are essential to the proper understanding of the professional course.
- (c) The fifth year will be a year of specialisation during which the students will elect one subject from amongst the choices offered by the college.
- (d) Theoretical study should be supplemented by adequate laboratory and field work.
- (e) Unnecessary duplication and overlapping of subject matter at all stages should be avoided.
- (f) Syllabuses should be continually revised in the light of modern developments in the scientific and professional fields, particular emphasis being laid on those aspects which are relevant to the conditions and problems of Pakistan.

13. Professional education in the past has been conceived and planned to meet specific job requirements. Not only must it include a thorough grounding in the basic and applied sciences, but it needs to be enriched with a training in the social sciences and humanities. A successful professional worker in the modern world requires a knowledge of both the sciences and the humanities. We recommend that all courses in agriculture include material in the humanities.

14. As far as animal husbandry is concerned, the College at Lahore gives only a five-year course after matriculation. At the College at Mymensingh there are two courses, one of five years leading to the B.Sc. (AH) degree of Dacca University, the other of three years leading to the LVS diploma of the same University. We are in favour of a five-year course for all colleges and we hope that in due time three-year courses will be raised to five years. In such a case past diploma holders with field experience should be given facilities for further studies to qualify for taking the degree examination.

VII. Examinations :

15. This subject has been fully discussed in the chapter on Higher Education and the recommendations made therein are equally applicable here. To ensure habits of sustained studies, we feel that periodic

examinations should be held and due weight given to results obtained in them. For further details reference may be made to the relevant section in the chapter on Higher Education.

VIII. Post-graduate Education :

16. The duration of the M.Sc. Agric. course should be a minimum of two years. Agricultural colleges should also admit students for Ph.D. courses which should take at least two years after the Master's degree.

17. At present there are no arrangements in Pakistan for post-graduate education leading to Masters' and Doctors' degrees in animal husbandry. We recommend that, as soon as possible, arrangements be made for students to take M.Sc. and Ph.D. degrees in animal husbandry under the same conditions as those suggested for agriculture.

IX. Short Courses and Refresher Courses :

18. Many short courses are already offered in one or two colleges. We suggest that all colleges should make arrangements to run short refresher courses. Such courses are expected to be a permanent feature of educational institutions at this level. Careful thought must be given as to which can be most appropriately organised by colleges and which by relevant government departments. For some subjects the courses would best be arranged in co-operation with a research institute or large livestock farm. In any case there should be co-ordination between college, departmental, and research authorities in developing a programme of such courses.

19. Courses which would seem most appropriate for colleges to organize would be: farm management; plant protection; fruit culture; disease investigation; artificial insemination; fisheries.

X. Research :

20. The importance of research in agriculture and animal husbandry should require little emphasis. We must develop not only our existing crops but find new varieties for new areas; open to cultivation lands at present uncultivated; find effective controls for plant and animal pests and diseases; develop new processes for the full utilization of the products of our land. Our colleges have a leading role to play in this field.

21. Research in agriculture is at present mainly conducted in three ways (a) in the agricultural colleges, either in laboratories or in field stations under college control; (b) in field stations run by the departments; (c) in research institutes, which, for all practical purposes, are a separate administrative entity. The point we wish to emphasize here as elsewhere is the necessity to combine research and teaching at the college level. Unfortunately this is not the universal practice at present. In some colleges—particularly the Agricultural College, Tejgaon—there is a divorce between teaching and research, these being carried out in separate institutions. We recommend that, as in other fields of higher education, teaching and research should be combined in this field also. All teaching staff should be expected to conduct or supervise research and all specialist staff at present employed as full-time research officers should be expected to take part in the teaching programme in their special subjects, even at the under-graduate level. This principle should be applied in a flexible

manner and in keeping with individual talents and programme needs. Thus one staff member may devote seven-eighths of his time to research and one-eighth to teaching ; another half and half ; and a third one-eighth to research and seven-eighths to teaching.

22. There are several fields in which research has not begun or could be further strengthened. In agriculture, research work in food technology, agricultural meteorology, bacteriology, and soil physics should be initiated, and in plant pathology, entomology, soil science and crop development work should be strengthened.

23. The animal husbandry colleges are at the moment poorly equipped for research work. Laboratory and library facilities are inadequate and the departments are not organized in a way which permits research on the part of the staff, nor do present teaching loads and routine duties of senior staff members permit them to engage in research and study. Little attention is paid to research records in recruiting staff or in annual reviews of their services.

24. Attention should be paid to research achievements and experience at the time of initial recruitment and promotion to higher posts. We draw attention here to our suggestions in the chapter on Higher Education regarding flexibility in grading posts on college establishments. The aim should be to adapt the hierarchy of posts to the qualification of staff members, and not to a prescribed government manning table. The powers of the principals of colleges to evaluate staff or remove routine practitioners to routine jobs need to be strengthened.

25. In order to give a greater initiative to all research, staff members should continue to carry on research at the institutes and the research sub-stations attached to the institutes as at present, but they should be given liberty to select problems of their choice, specially those related to the needs of the country, in addition to the programme of work approved by the head of the institute.

26. The importance of the fishing industry has been recognized, and this should facilitate its further development. It is suggested that training and research centres for inland and coastal fishing be set up in both provinces for supervisory staff.

27. There is also room for development in forestry. The new College and Research Institute of Forestry at Peshawar should be strengthened for training and research purposes, both at the College itself and in field stations in East and West Pakistan.

28. Large areas of the world are arid and unproductive and intensive efforts are being made by many countries to convert these areas into arable land. Through its major project in this field, UNESCO is attempting to give direction and co-ordination to these efforts. As a considerable part of Pakistan is arid, vigorous research should be undertaken to find out how this can be made arable. Some fields for further research are : improvement of grasses ; new techniques of afforestation ; development of the use of wind and solar power ; plant ecology ; utilization of dew and underground water ; production of artificial rain ; desert animals. Within the frame work of the UNESCO major project, Pakistan has established a programme of research in this field. Progress, however, has been somewhat slow partly due to the inter-departmental nature of the programme

requiring action by various ministries. In view of its great importance to our economic development, we recommend that this programme be given high priority and its implementation be considerably accelerated. Research Programmes in the special problems relating to the use and development of lands in humid zones are equally necessary. In view of the importance of this subject and the large areas found in these zones, UNESCO is formulating a major project in this field also. Considerable areas of Pakistan can be so classified, but action in this field will again require the cooperation of various ministries. We recommend that high priority be given to the launching of a large programme of research into the problems involved in humid zone development.

29. For the progress and co-ordination of research, regular publication of results is essential. We recommend that the publication of progress reports of the work of each section be revived immediately. The first report should contain the results of research conducted since the establishment of Pakistan. Thereafter, progress reports of research should appear in annual reviews, periodic leaflets and bulletins, and a quarterly journal.

30. There is need for planning, evaluation and co-ordination of research in the agricultural field at the national level. Various organizations and institutions are engaged in programmes of research such as the Provincial Departments of Agriculture, the College of Agriculture and Animal Husbandry, the Food and Agricultural Council of Pakistan, the Forest Research Institute of Pakistan, the Central Cotton and Jute Committee, the Department of Plant Protection, and the Department of Fisheries. To co-ordinate and develop research, an effective and well-organized Council of Agricultural Research should be set up. The Council should be able to plan and co-ordinate programmes of research and to offer aid to colleges and universities for research programmes, particularly those which are fundamental to agricultural development. Moreover, the Council should issue periodically a review on the research work undertaken in various fields. The relevant departments should be adequately represented on this Council.

31. It is essential that the universities be closely associated with the work of this Council, as they are in other countries. Besides the training of specialized and technical personnel, the universities must undertake a major portion of fundamental and basic research. The analytical and integrating studies, of natural and physical environments operating on the land, the sea, and fresh water, can best be done through the university departments of the biological and physical sciences.

XI. Extension Work :

32. Research results are of little use unless they are made available in a digestible form to those who are or will be practising farming. We have recommended elsewhere that appropriate courses in agriculture should be introduced into our primary and secondary schools. At present agricultural knowledge is made available to our farmers through the programme of Village-AID and the Department of Agriculture. In the latter case, however, such extension work is combined with other functions, such as the sale of seeds. We feel that, just as research should be integrated with teaching in our colleges of agriculture and animal husbandry, similarly some extension work of an educational nature should

be done by the colleges and universities under the new administrative arrangements for these proposed below. The educational extension work of the Agricultural Department should be co-ordinated with this work.

XII. Administration and Control:

33. It is universally recognized that agricultural productivity is closely linked with agricultural education and research. Considering the importance of the subject to development in Pakistan, our agricultural colleges must aim at the highest level in staffing and equipment. As stressed by the Planning Board, they cannot achieve their highest purpose of intellectual, academic and professional growth and service to the country until they become primarily educational and an integral part of a unified system of education rather than adjuncts of government departments. The present status of the colleges is an inheritance from the past with the function of training high-grade technicians for specific government positions. We are convinced that agricultural education in Pakistan cannot achieve its full stature under the present system of control by a government department, whose officers are not educators and are already heavily burdened with administrative matters, and where the colleges are divorced from the atmosphere of scholarship and research which should characterize all higher education.

34. We have given close thought as to how the colleges could best develop if they were to be so detached and have considered various alternative forms of administration and control. We have come to the conclusion that there is immediate need for the establishment of an Agricultural University in each wing of Pakistan. Such a step, we are certain, would promote the development of teaching and research programmes to the highest level. Such action has been taken recently in India where, with the help of ICA, an Agricultural University has been set up in Uttar Pradesh.

35. The desirability of similar action in Pakistan has been urged on us most strongly by college authorities in East and West Pakistan, by the ICA group of officers in the Agriculture Division and by the Secretary, Ministry of Agriculture and his staff. The object in setting up such universities is to raise the standard of teaching and research. This object would be defeated if the staff engaged were not of the highest professional competence and integrity. The university authorities should therefore be free to appoint the most qualified staff. We have been informed by the Secretary of Agriculture that most of the staff working in the colleges belong to the Agriculture Departments, and that it would be open to the new university authorities to retain only such staff as they judge competent; the remainder could easily be re-absorbed in the field work of the Departments.

36. The new universities should include representatives of the Departments of Agriculture, Animal Husbandry, and Forestry in their various academic and executive bodies. Indeed, the Directors of these Departments should be *ex officio* members of the governing councils of these universities.

37. Our recommendation, therefore, is that there be created a West Pakistan Agricultural University and an East Pakistan Agricultural University. Each of these should have faculties or departments in the following: (a) agriculture; (b) animal husbandry; (c) agricultural economics; (d) agricultural engineering; (e) the basic sciences. The universities

should ensure parity of esteem between the teaching of the basic sciences and the professional subjects, in keeping with the traditions of higher education, and staff of the highest quality should be appointed for all subjects..

38. We have considered the question whether these universities should be new institutions or developed on existing ones and have come to the conclusion that this decision should be taken later in consultation with the provincial authorities and in accordance with the needs of each Province.

39. The estimated requirements of Government and semi-Government agencies as well as private enterprises over the next five years are 400 trained graduates per year. On the other hand, the existing four colleges, working to full capacity, can turn out only 230 trained graduates a year. Obviously the existing facilities are inadequate and need to be expanded considerably.

40. The role of the new universities would, in our view, be to provide leadership in teaching and research in both Provinces in order to raise the standards to the highest level. Whether the proposed universities are started in new centres or developed on existing ones, it is necessary that they should find the most competent staff and provide all necessary facilities. In particular, they should offer a programme of post-graduate teaching and research in the various faculties.

41. Co-ordination between the new universities and the existing colleges would be necessary. It would, therefore, be desirable to link the existing colleges with the new universities on a mutually satisfactory relationship.

42. The colleges of animal husbandry at Lahore and Mymensingh do not possess suitably equipped experimental farms. Arrangements should be made to provide these facilities.

43. We would also recommend that the Forestry College at Peshawar should be given the necessary facilities to undertake a programme of teaching and research so as to produce enough graduates in this subject for both Provinces and carry out research programmes suited to the ecology and needs of both Provinces. The importance of forestry development to the economy of Pakistan cannot be too strongly emphasized. Timber is a potential source of wealth and industrial development. At the same time forestry is of capital importance in the prevention of soil erosion and soil conservation, and has a key role to play in the conversion of the vast arid areas in West Pakistan. We have previously referred to the importance of expanding our programme of research in the fields of arid and humid zones and of the utilization of research results in these fields.

B. EDUCATION AND RESEARCH IN AGRICULTURE AND ANIMAL HUSBANDRY

SUMMARY OF RECOMMENDATIONS

I. The importance of Agricultural Education :

1. Pakistan is essentially an agricultural country. Unfortunately, however, our farming still remains at the subsistence level or a little above it. There, is, therefore, an urgent need for improvement in this vital field. (1-2).

2. Education and research are indispensable to agricultural development. Agriculture has been given considerable importance in the school curriculum, and it should receive the same emphasis at the degree and post-graduate levels. (3-5).

II. Objectives of Agricultural Education :

The over-riding aim of our college education in agriculture and animal husbandry should be to produce graduates with a high sense of vocation, a determination to apply modern knowledge to our agricultural development problems, and the qualities of leadership, imagination and personal integrity. (6).

III. Academic Qualifications for Admission to a Degree Course :

Admission qualifications should be Matriculation, as it has been found easier to develop a sense of vocation amongst those admitted after Matriculation than at a later stage. (9).

IV. Duration of Course :

The duration of the course should be five years after Matriculation. (11).

V. Curricula :

Courses and curricula should devote the first two years to basic sciences, the third and the fourth year to advanced study of professional subjects, and the fifth year to specialization. (12).

VI. Post-graduate Education :

The duration of the M.Sc. course should be at the minimum two years. Agricultural colleges should also admit students for Ph.D. courses which should last for at least two years after the M.Sc. degree has been secured. (16).

VII. Short Courses and Refresher Courses :

Agricultural colleges should make arrangements for short refresher courses which should be organized in close co-operation with the departmental and research authorities. (18).

VIII. Research :

1. As in other fields of higher education, teaching and research should go hand in hand. All teaching staff should conduct or supervise research and all research staff should take part in the teaching programme in their special subjects even at the undergraduate level. However, this principle should be applied in a flexible manner in keeping with individual talents and the needs of the educational programme. (21).

2. High priority should be given to a comprehensive programme of research in the fields of arid and humid zones. (28).

3. A Council of Agricultural Research should be set up to co-ordinate and develop programmes of research. The universities should be closely associated with the work of this Council. (30).

IX. Extension Work :

Extension work of an educational nature should be undertaken by the colleges and universities in co-operation with the Agriculture Department. (32).

X. Administration and Control :

1. Since teaching and research best flourish in an academic atmosphere and since agricultural colleges are responsible for promoting programmes of teaching and research and for producing personnel who will develop the resources of the country, these colleges should be detached from departmental control. (33).

2. An agricultural University should be established both in West and East Pakistan with faculties or departments in the following :—

- (a) agriculture, (b) animal husbandry ; (c) agricultural economics ; (d) agricultural engineering; and (e) the basic sciences. (37).

3. The new universities may be established either as entirely new centres or through the expansion or re-organization of an existing college. In either case it will be necessary for such a university to develop appropriate relationships with the existing colleges. (38—41).

C. LEGAL EDUCATION

I. Introduction :

1. Legal education in Pakistan has been the subject of much public and professional criticism, and little purpose would be served in attempting to gloss over the fact that, due to the special conditions following independence, the standards of this education have fallen considerably. University Law Colleges have been over-crowded and unable to attract highly qualified staff; at the same time there has been a mushroom growth of private Law Colleges which have been content to operate more or less as factories. We are now producing more graduates than the legal profession can absorb and it is questionable whether even those it does absorb are as well qualified as they should be for their professional work.

2. It is time to view legal education in its proper perspective and have clearly in view the type of graduate we wish such education to produce. In broad terms, we require men of the highest ability and character to help, develop and maintain forms of responsible government suited to our genius; we require men to help, develop and maintain international relations; we require men of outstanding probity and intellect to administer justice; we require men with broad liberal legal education to understand contemporary economic, political and ideological forces; our citizens and private companies require legally trained men who can help them obtain justice in their causes; lastly, we need men who can contribute to the world of learning in law. In all these categories we require men practising according to the highest professional ethics.

3. It is obvious that when an institution aims only at the satisfaction of minimum requirements and conceives education to be the memorization of a mass of facts, it is not likely to give us the men of quality for whom we are looking in the legal profession.

4. It is true that certain aspects of law must be studied by some who will not enter the legal profession; political scientists may wish to study constitutional law; accountants, the law of contracts. Law may also be studied as an academic discipline or a field of scholarship and research without necessarily leading to the practice of law as a career. Such considerations must be borne in mind in designing courses of study. Some countries make a clear distinction between the professional and academic study of law. In England, for example, the professional side of legal education (i.e., entry to the Bar) is controlled by the Inns of Court, and the academic side by the universities. In the Indo-Pakistan sub-continent, as in the United States, both are combined in the universities. In other words our universities and colleges have a doubly arduous task in that they must combine the teaching of the technical and procedural side of law with the academic.

II. Admission Qualifications :

5. With these considerations in mind we may suggest what steps, we believe, should be taken to restore legal education to its proper status. The minimum academic qualifications for admission to the law college should be a bachelor's degree from any faculty of a recognized university. Experience has shown that the lowering of the admission qualifications tends to lower the standards both of teaching and of student attainment. Boys coming to the law college at the age of 17 are not mature enough for legal studies; nor have they a sufficient grasp of English. A student must

have a good grounding in some important areas of knowledge as a foundation on which to build his technical study of law. The legal profession and principals of law colleges strongly favour the retention of a bachelor's degree as the minimum academic admission qualification and we concur in this view.

6. The admission to the law colleges should be determined on the basis of the marks obtained in the degree examination coupled with an interview.

III. Duration of the Degree Course :

The best way to raise the standard of legal education is to re-organize the studies on a rational basis and to extent the LL.B. course from two to three years. Three years has been accepted as the barest minimum for a reasonable course in law in all the leading universities of England and the United States. These extension of the course from two to three years was recommended by the Calcutta University Commission in 1919, by the Punjab University Enquiry Committee in 1933, and more recently by the Indian University Commission in 1949. The recommendation of the Punjab University Enquiry Committee was accepted by the University and a three-year course was introduced in 1936. Soon after Independence the course was again reduced to two years and the Punjab University was the only one with a three-year course in West Pakistan. In Sind, Karachi, and the N.W.F.P., persons holding law degrees after a two-year course were permitted to join the profession. On the other hand Dacca University had a three-year course until 1957 when it was forced to reduce it to two years to come into line.

8. An effective study of the comprehensive courses we require would not be possible in less than three years. It is, therefore, suggested that the LL.B., course, leading to the profession of law, should be of three years' duration. It should consist of two parts : Part I of two years' duration and Part II of one year, with a university examination at the end of each year. While the first two years should be devoted to the study of the history and principles of law, the last year should be devoted to the study of procedural law and practical subjects like conveyancing, pleadings, legal drafting, and adequate introduction to the practical side of the profession in the form of weekly law moots, regular visits to courts followed by writing of case histories, preparation of briefs and lectures on professional ethics and medical jurisprudence. The universities may consider the question of awarding the academic degree at the end of Part I to those interested in law as a discipline, while those wishing to join the profession should be required to complete Part II.

9. An advantage of the proposed system would be that the number of students in the final year would be comparatively small, making it possible for the staff to organize and supervise effectively the holding of law moots, visits to courts, and writing of case histories. In order to give proper emphasis to this aspects of their training, it is suggested that the colleges should be required to maintain a proper record of these activities of the students and that it should carry a credit of 10% of the total marks of the Part II examination in law. It is, of course, for the High Courts to lay down the requirements for entry into the profession, but it appears to us that if the graduates in law are to undergo the additional training envisaged in Part II as suggested here, the appropriate authorities should consider permitting such graduates to practise in the High Courts without the restrictions at present prescribed.

Mr. Salim Ullah Janmi

IV. Courses of Study :

10. For a two year LL.B. degree course the curriculum prescribed in the Universities of Punjab, Peshawar and Dacca would appear to be fairly adequate. But, as stated above, it is generally felt that two years is too short a period for effective professional study. Our students are expected to study not only the Common Law system, but also for ideological reasons the system of the Muslim Law. The result is that in the short period of two years an attempt is made merely to pass to the student as much information about the existing laws as possible without emphasizing the principles that underline those laws.

11. For a rational understanding of law, it is essential to have a deep and thorough insight into the Common Law system, and so long as the law degree is a passport to the profession, the fundamentals of adjective laws cannot be ignored. Both substantive and adjective laws should be taught from the point of view of first principles. Only in the three years' course with adequate time available can proper emphasis be laid on these basic principles. New and useful courses such as the History and Principles of Common Law, Interpretation of Statutes, Theories of Legislation, Administrative Law, Insurance Law and Medical Jurisprudence should also be added to the curriculum.

12. As law and its practice from the very basic on which civilized society rests, those who are called on to interpret it must in all their action be guided by the highest standards of ethics, inspiring public respect and confidence. For this reason we believe it to be imperative that lectures on the ethics of the legal profession form an important part of the curriculum.

V. Higher Studies and Research :

13. A notable weakness in our present colleges is the absence of facilities for higher education and research in law. Our colleges have trained men for the Judiciary and Bar but have not performed the academic function of contributing to scholarship and so to the reformation, refinement, and growth of law and the administration of justice. Research is necessary to keep teaching and practice aligned with the dynamic needs of society, and no stimulating study of law at the higher levels is possible without adequate provision for research. Up to now we have produced lawyers but not jurists, and the Commission feels that the time has come to correct this tendency. Moreover, without advanced teaching we cannot produce qualified teachers for our colleges.

14. The Commission feels strongly, therefore, that research work should be guaranteed by the universities, and that provision should be made for advanced courses in law leading to the Master's and Doctor's degrees. It would seem to us that at least two such strong centres, one each in East and West Pakistan, would be of considerable help to our Courts.

15. The course for the Master's Degree in Law should last for a minimum of two years and should be open to students who have passed Part I of the LL.B. degree course. The Ph.D. degree in law should be awarded after three years' research after the LL.M. conducted under the guidance of qualified supervisors.

16. In these centres, the main duty of the staff should be the conduct and guidance of research. At the time of appointment of Readers and Professors of Law, their published research work and their capacity for doing and guiding research should be thoroughly appraised. With a view to stimulating interest and training in research, scholarships should be awarded to young men to undertake research in specific fields of law under the guidance of faculty members. Attempts should be made, so far as possible, to relate the research to actual problems facing the nation such as riparian rights, judicial settlement of international disputes, and reforms in Muslim Law. It can be reasonably expected that these steps would in the course of time lead to centres of legal learning and research comparable with the best to be found in other countries.

VII. Standard of Teaching :

17. Because our colleges have been content to produce graduate lawyers as quickly as possible, the standards of teaching have not been of the quality required for university education. We would emphasize strongly that this position must be corrected. The suggestions given in the Chapter on Higher Education regarding the duties and obligations of teachers of arts subjects as regards hours of work, conduct of tutorials, practicals, student guidance, study and research, should also be effectively implemented in our law colleges.

18. There appears to be general agreement that the staff of law colleges should not consist exclusively of whole-time or part-time teachers but should be a mixture of both. The learning and contribution of practising lawyers to legal education should not be under-estimated, and it is felt that eminent practising lawyers must be associated with colleges and make their knowledge and life-long experience of the professional side of law available to students. Their services are particularly useful in courses on procedural law. The bulk of teachers, however, must be full-time, for without them adequate arrangements for higher teaching and research cannot be made.

19. Our law colleges at present are extremely over-crowded and understaffed with consequent deterioration in standards of efficiency, discipline and attainment. The pupil-teacher ratio is as high as 60 students to a teacher. This is neither desirable nor academically sound. Along with a more careful selection of pupils, efforts should be made to bring teaching staff up to strength.

20. The terms of salaries offered to such teaching staff must be competitive if persons of quality are to be attracted. Their duties must be defined and the conditions of their service stated clearly after the pattern of our suggestions for university teachers in general made in the Chapter on Higher Education.

VII. Recognition of Colleges :

21. A large number of private law colleges have sprung up in recent years and this has led to a lowering of the general standard. We are distressed that some universities have affiliated several of these colleges without ensuring that proper standards were maintained and that affiliation was granted only to colleges which were centres of true scholarship and sound teaching.

22. We urge strongly that the conditions of affiliation as regards staff, building and other facilities and tutorial work, be on the same lines as for other colleges and be strictly enforced. The universities should recognize only those law colleges that have adequate staff and can provide full facilities to call forth the whole-hearted response of their students in the total programme.

C. LEGAL EDUCATION

SUMMARY OF RECOMMENDATIONS

I. Objective :

Legal education should aim at producing graduates of professional competence and character who are capable of administering justice, developing and maintaining responsible Government and contributing to the world of learning in law. (1—4).

II. Admission requirements :

The minimum qualification for admission to the Law College should be a bachelor's degree from any faculty. (5—7).

III. Courses of Study and Duration :

The duration of the LL.B. Course should be extended from two to three years, two years for Part I and one year for Part II, with a university examination at the end of each year. Part I should be designed for the study of the history and principles of law and Part II, consisting of procedural law and practical subjects, for those wishing to join the profession. (7—12).

IV. Higher Studies and Research :

Provision should be made for advanced courses leading to a Master's Degree of two years' duration and a programme of three years leading to a doctorate in at least one university in each wing of Pakistan. (13—16).

V. Standards of Teaching :

The duties and obligations of whole-time teachers in law colleges with regard to hours of work, conduct of tutorials, guidance, study and research should be the same as laid down in the chapter on Higher Education. The staff should be a combination of whole-time and part-time teachers, but the bulk should be whole-time to ensure adequate arrangements for higher teaching and research. The salaries offered must be competitive. (17—20).

VI. Recognition of Colleges :

Conditions of affiliation for law colleges as regards staff, buildings, equipment, and tutorial work should be on the same lines as for other colleges and be strictly enforced. (21-22).

D. COMMERCIAL EDUCATION

I. Introduction :

1. We have on more than one occasion stressed that all education, however specialized, should keep in view the necessity to educate a citizen and an individual as well as a specialist. As with other subjects, commercial education must be developed as part of the broader educational system and must be given an important place in general education at every stage. This we are convinced will produce better specialists.

2. Technical efficiency in industrial or agricultural production may be rendered largely ineffective if the machinery of administration is unable to handle successfully the problems of labour relations, costing, marketing, advertising, banking, insurance, shipping and merchandising, in the widest sense. These supporting services, which are necessary if science and technology are to be successfully applied to industry and agriculture, are the concern of commercial education.

3. The criticism has often been levelled at the present education system that it was designed to produce clerks. We agree with this criticism in so far as it is true that a large number of university students drift into clerical jobs. Yet the majority of clerical posts demand skill which the university courses never give. The result is that university graduates enter clerical occupation with a completely false idea as to the practical worth of their degrees. On the other hand, employers want skilled workers and failing to get those with professional skills, prefer to enlist boys at a younger age whom they can mould themselves and who have no false opinions as to their capabilities.

4. Commercial education should be designed for the education of those who smooth the path of scientists and technicians so that their products are costed, advertised, marketed, trans-shipped and finally reach the consumer at competitive prices.

5. The needs of a modern State cannot be met without a large body of trained personnel qualified for careers in public and business administration, trade, industry and commerce. The concept of commercial education, therefore, involves the establishment of special institutions such as commercial institutes to train those who will pursue professional careers in trade, industry and commerce. It also involves the establishment of graduate and post-graduate courses in our universities in the fields of commerce, business and public administration.

II. Aims of Commercial Education :

6. In the field of commercial education the country needs three grades of personnel roughly parallel to the skilled workers, the technicians and the engineers who are essential for industrial workshops. Translated into commercial terms, these are : first, the skilled clerical workers in many grades whose work is accurate, speedy and reliable ; next, are the supervisory personnel who are well educated, possess many of the skills of the clerical workers they supervise, and who, in addition, can handle their subordinates efficiently humanely and can interpret the policy requirements of the management. Finally, at the top level is the executive class who should be thoroughly conversant with economic and commercial principles and able to frame policy for production and development.

7. Each of these will require different kinds of training at different levels, but experience in the actual commercial enterprise will be the chief factor making for success in the first two categories. As far as skilled clerical workers are concerned there will generally be a common core of office skills which all should receive, and in certain cases, notably in the case of typists, stenographers, and account clerks, basic training in skills can easily and most effectively be given by intensive institutional training courses. In addition, each particular commercial house will have its own specialized methods which can best be learned "on the job".

8. Supervisory and managerial personnel are often recruited from skilled clerical workers who show the qualities of leadership, diligence and efficiency. Their work can, however, be greatly improved by a study of management and industrial relations based upon progressive methods which have succeeded in other parts of the world. Provision of such courses will form an important part of the work of commercial education.

9. At the top of the ladder, the leaders of industry and commerce will require a deep understanding and knowledge of the basic principles of economics and finance, and will in addition be experts in a particular field of commerce such as transport, insurance, banking, publishing, or textiles. University courses in commerce and economics should be designed to give our future leaders in industry and commerce an adequate foundation upon which their inventiveness and enterprise may develop to its maximum potential. Important enterprises may well be built up in a developing economy by men who have had no university training, and it is good that this should be so. Nevertheless, with the modern emphasis upon the public corporation and the limited company, opportunities for leadership in commerce will increasingly be available to the trained university graduates with commercial experience and professional status. The education system must be equipped to provide the basic training which they will require.

10. Facilities for commercial education are at present seriously deficient at all levels. Publicly organized provisions hardly exist for those who wish to acquire basic office skills before taking up employment. Such training has been left almost exclusively in private hands, and the Planning Board, in the "First Five-Year Plan", was very severe in its condemnation of these institutions. In general they are poorly equipped, poorly staffed and badly housed with the result that their products are generally inefficient and have difficulty in finding employment. The Education Departments run a few post-matriculation commercial centres, but with few exceptions the equipment and buildings are poor and the staffs untrained. These institutions also suffer from the fact that they are generally appendages of high schools and have no independent existence or status. Moreover, there has been a failure to understand their problems and the present examination system is sadly defective.

11. Some of the high schools in East and West Pakistan offer a few optional subjects in commerce in Classes IX and X, but the number of pupils taking these options has been negligible. One of the major difficulties has been to find good teachers of these subjects, partly due to the more attractive salaries obtainable elsewhere, and partly due to the lack of special training facilities for such teachers.

12. A number of colleges under the Universities of Karachi, Sind, the Punjab and Dacca offer intermediate and degree courses in commerce.

There is a general complaint, however, that the system of teaching is mainly theoretical ; that the teachers and lecturers are not experienced in practising the subjects which they teach, and that, as a consequence, the graduates produced by these courses are not suited to the requirements of industry and commerce in this country.

13. To reorientate education so as to meet the needs of the people we propose that two steps be taken :

- (a) To diversify the school curriculum so that pupils may take up, in accordance with their aptitudes, a few elective subjects in the field of technical, agricultural and commercial studies in addition to the core of compulsory subjects.
- (b) To provide special institutions, such as Commercial Institutes, at which students may take up courses at the professional level.

Students who take elective subjects in Classes IX and X would be able to enter employment in business and commerce direct or they can join commercial institutes to secure professional qualifications. Those who take the elective subjects in the present Intermediate classes would be able to proceed to the university for higher studies. However, if a student does not wish to go in for higher education, he would be able, with the education that he has had, to enter business and industry with a certain degree of confidence.

14. The first major diversion from the traditional pattern will take place after Class X to enable the students to join the commercial institutes. In the chapter on Technical and Vocational Education, we have provided for the establishment of polytechnics and technical institutes to offer a large variety of courses in technical fields. The commercial institutes will be similar to technical institutes and would also offer a wide range of courses. Indeed, the commercial institute might itself be a part of a polytechnic, wherever feasible. Some institutes would offer a general course of two years' duration in clerical skills and those who complete this course should be able to enter employment as skilled office workers ; stenographers, filing clerks, etc. The institutes would also provide evening classes so that young office workers may combine further vocational education in commerce with their on-the-job training.

15. The second major diversion will take place at the end of the present Intermediate. It will be possible to make a choice from three alternative courses :—

- (a) To enter employment and continue further professional education through evening classes.
- (b) To enter the university for a degree course in commerce.
- (c) To enter into articles, e.g., with an accountant or pleader for on-the-job training. This will be combined with special courses of instruction conducted either by government or by the professional association concerned.

16. As regard the degree courses, it will be necessary to extend the duration of the course to three years and at the same time improve the standard of the Master's degree. In both cases, students are expected to obtain experience of work in a commercial firm during vacation. Finally,

research should be encouraged to provide adequate statistical and other information on our commercial enterprises. For this a Doctorate course should be available.

III. Commercial Institutes :

17. In the past it has been customary for young people to proceed to a university and secure a bachelor's degree before seeking employment in the clerical services. We believe that this has been a mistaken policy and the products of this system have generally failed to enter employment with the right attitude. Their courses have been bookish and unrelated to subsequent requirements of commerce and industry. What is really needed is that young people should enter commercial institutes for specific courses of study. Most employers would prefer to recruit people with such professional qualifications.

18. The commercial institutes will, therefore, train young people in office skills so that they are immediately useful when they enter employment. The course at the commercial institutes would last for two years and would offer basic training in office skills combined with basic background studies and language instruction. With this two years' training *plus* experience in office practice they will be a far more valuable asset in business and commercial work than ordinary graduates.

19. Usually, management prefers to promote its own employees to supervisory posts. In this connection, the role of professional associations is important. The Institute of Bankers has already developed its own course and in certain towns has made provision for instructional classes for its own employees. The Institute of Industrial Accountants has also drawn up its own examination requirements and accepts entries from young men in employment after the intermediate and final examinations. Other professional organizations should also be encouraged to do so if opportunities for advancement are to be made available to clerical workers in Pakistan. There is a wide field, at present undeveloped, in which, with proper provision of facilities for systematic studies, able, intelligent and capable young people can be trained. At this level these should include a wide range of commercial subjects—banking, insurance, accountancy, secretarial work, advertising and salesmanship, personnel management, transport, etc.

IV. Courses at Commercial Institutes :

20. Courses at the commercial institutes will be specially designed to meet the requirements of industry, commerce and the government services. The basic courses will include language (including business correspondence, summary and precis writing,) commercial arithmetic and accounts, typewriting, shorthand, bookkeeping, economics and principles of commerce. In co-operation with professional organizations courses should also be devised in the following special fields : (a) insurance, (b) banking, (c) secretarial work, (d) accountancy (including cost accountancy), (e) advertising and salesmanship, (f) personnel management, (g) transport, (h) textiles, and (i) government office practice.

21. Commercial institutes should work closely with local industry, government and the business world and provide any other courses suited to the special requirements of the area. All students attending the two

years' course will be expected to take language, commercial arithmetic and accounts, economics, principles of commerce and typewriting; and either shorthand or book-keeping. At the end of the first year students will be expected to have reached full efficiency in typewriting and commercial arithmetic, and should then choose one of the major options listed (a) to (i) above, continuing the study of other first year subjects. During the vacation at the end of the first year all students should be encouraged to take up apprenticeship in an office. A successful apprenticeship should help the student in the choice of his special subjects for the final year.

V. Higher Education in Commerce :

22. The aim of commercial education at this higher level should be to produce executives and leaders with vision and imagination capable of promoting our commercial activities at home and abroad. Courses, therefore, must develop an understanding of trade and commerce in our conditions and the ability to think imaginatively and creatively in order to improve the national well-being. We must develop the faculty and ability to reason from collected data so that our commercial problems can be solved successfully. Commercial studies must be directly related to observable experiences and students should be encouraged to evaluate situations, to suggest and defend appropriate courses of action and to test them in practice.

23. Since the aim is to train for leadership, we must make sure that the trainees have the pre-requisites for leadership—mental alertness, speed in making decisions and accuracy in developing judgements. A most useful method of testing such aptitudes is by means of properly designed and standardized aptitude tests. We have discussed the use of these at length in the chapters on Higher Education and Guidance and suggest that the procedure indicated should be widely used in commercial education.

24. *The Bachelor's Degree.*—The course for a bachelor's degree should last for three years. We recommend that the colleges and university Departments of Commerce should re-organize their teaching programmes so as to emphasize tutorial, discussion, and case-study methods to ensure active and continuous participation by the students throughout the course. Due attention in assessing final results should be paid to students' performances throughout the course, as recommended in the section below on examinations.

25. *The Master's and Higher Degrees.*—The master's degree course should cover two years and should be open to the best students among graduates in commerce, and also to graduates in certain other specified faculties who pass a suitable entrance examination. This flexibility is necessary because of the increasing tendency for graduates in science, engineering and agriculture to be employed in managerial posts in modern industrial and commercial undertakings.

26. Advanced courses should also be conducted for the doctorate, and all candidates should be required to submit a thesis or dissertation making significant contributions to the industrial and commercial life of the community. In view of the lack of statistical data and original studies in this field, we believe that the introduction of research work will have a special importance to the industrial and commercial life of the nation.

The preparation of a thesis or dissertation would be an excellent discipline and would enable students to exercise individual choice and judgment in the selection and presentation of relevant facts and in drawing conclusions therefrom. These qualities are essential for those who aspire to leadership in the commercial and industrial life of the nation.

27. *Practical Experience for Students and Teachers.*—We believe that students of commerce must be made aware, in a practical way, of the problems which confront managements in exercising their functions. We therefore recommend that all students for degrees in commerce should spend a period during each vacation in commercial employment. We know that this will present some difficulties in the initial stages, but once the co-operation of the employers is secured, this should operate smoothly. We feel that a period of about two months in each year should be adequate. The active co-operation of employers will be secured if both parties can use the period as a try-out for future employment—the employer will be anxious to test the personal qualities of the students, and the student will be anxious to test his liking for the particular commercial enterprise. We believe that teachers of commerce can be fully effective at this level only if they maintain contact with industry. We therefore suggest that teachers of commerce might be permitted short periods of attachment to business or industry once every three or four years. Such permission should be granted only when it is not likely to interfere with the teaching duties of the person concerned.

28. *Diplomas in Public and Business Administration.*—The importance of studies in these subjects cannot be over-emphasized. A School of Public and Business Administration has been established at Karachi. It belongs to the University of Karachi but it enjoys a large measure of internal autonomy. It is located close to the city so that it is in a position to organize evening courses for the people of Karachi.

29. We recommend that this institute should be strengthened and that students from all parts of the country be encouraged to join it. We hope that other universities will follow the lead and modify their programmes of work somewhat on the pattern of the Karachi School.

30. We believe that courses in public administration would be of great advantage to young persons wishing to enter public service and we have no doubt that once having entered public service, such persons would be able to raise the standards of efficiency in fields of public and business administration.

31. We further recommend that the Karachi School should organize special evening courses in public administration for the benefit of serving officials. The functions a government official is called upon to perform are very often those of a manager of a large business concern. It is, therefore, quite appropriate that officers should be required to attend evening courses of this nature.

32. We believe that courses in industrial management suited to the requirements of small-scale industry should also be developed in Institutes of Public Administration and in the colleges. This matter is of vital interest to our country since it is estimated that about two million persons are directly employed in industry of this type, whose total annual output

is about 300 crore of rupees. It is, therefore, necessary to develop in the minds of those conducting small-scale industry an attitude which will enable them to appreciate the value of systematic thinking, careful planning and efficient production so that costs may be reduced, production increased and the working conditions of employees made more satisfactory. Some of these matters have been touched upon in the chapter on Technical and Vocational Education, with particular reference to the training of skilled workers. It is as well to emphasize in this section that the training of workers cannot be fully effective until managements are fully educated to their own responsibilities to the community in this matter.

33. *University Examinations.*—Our examination system should be designed to promote in students the will and the ability to work persistently and continuously through their course. The surest way to achieve this is to make certain that full credit is given for all work done during the course, and that all these credits will count towards the final examination result. Habits of industry, serious and persistent application and concentration are just as important for success in a career as mental ability. We therefore recommend that regular assignments should be required from students throughout the course ; that this work should be carefully marked, discussed with students and corrected ; and that the marks awarded for such work should be recorded and added to the final examination marks gained by the student. This matter is dealt with more fully in the chapter on Higher Education.

VI. Evening Classes :

34. Opportunities for further study have not been widespread because of the lack of properly organised facilities for evening class instruction under adequate supervision and control. We believe that young people will be willing to consider alternative avenues to gainful employment provided adequate facilities are made available for further study. We therefore recommend that evening class facilities should be made available for clerical and other workers engaged by industrial and commercial firms so that ample opportunities are available for improving efficiency in the spare time of the employee. Commercial institutes and other educational institutions should, therefore, provide evening classes in as wide a range of subjects as possible, suited to the requirements of local employers. In general, we consider that these classes should be self-supporting, or nearly so, though the costs of inspection would be a legitimate charge upon the Education Departments. It should be borne in mind that young people in employment are able to pay reasonable fees ; that the use of existing buildings will entail only moderate additional costs and that the specialized nature of the instruction will require part-time teachers who are engaged in commercial practice during the day and for whom expensive training programmes are not necessary.

35. The evening classes should offer basic training in language, type-writing, arithmetic, and book-keeping or shorthand over a two-year course for juniors who employed in commercial houses. In addition, classes should be conducted for the benefit of those who have completed the commercial institute two-year full-time course in preparation for the examinations of the professional organizations.

VII. Commercial Examinations :

36. To ensure uniform standards of attainment it is essential that Boards of Commercial Examination should be established in the Capital and in East and West Pakistan. These Boards should have advisory councils on which representatives of industry, commerce and professional organizations should be invited to serve. The Boards should keep closely in touch with one another since much of their work will cover common ground. *Inter alia*, duties of these Boards should be :—

- (a) to establish suitable examinations and curricula for the two-year full-time commercial institute courses ;
- (b) to establish other examinations suited to the requirements of persons in commercial employment who attend evening courses ;
- (c) to co-operate with the professional organisations (Bankers, accountants, cost accountants etc.) so that the examination system thus devised meets their requirements as far as possible ; and
- (d) to establish a series of examinations suited to the requirements of Government service at various levels.

VIII. Control of Commercial Education :

37. We believe that commercial education needs to be systematically controlled so that it is properly co-ordinated. Since commercial education is primarily vocational education, that control should be vested in the Directorates of Technical Education in the provinces and co-ordinated by the Ministry of Education. The arguments which we have brought forward in the section on Technical and Vocational Education apply equally to commercial education. We therefore recommend that a specialist officer, qualified by experience and academic distinction should be appointed in each Directorate of Technical Education, and that a similar officer should be appointed to serve in the appropriate section of the Ministry of Education at the Centre.

38. We recommend also that a special Committee of the Council for Technical Education should be set up to advise the Ministry and the provinces in this field.

39. We also recommend that the Manpower Committee, referred to in other chapters of this Report, should also assume the responsibility of keeping a register of qualified personnel, and advising on manpower requirements in this field. Close liaison with the professional organizations is essential if this is to be done effectively.

IX. Teacher Training :

40. The implementation of the proposals contained in this chapter will require the services of trained teachers in the following spheres :—

- (a) Secondary School—Classes IX-X.
- (b) Secondary School—Classes XI-XII.
- (c) Commercial Institutes.
- (d) Evening Classes.

41. So far no special attention has been paid to the training of teachers of commercial subjects, and we believe that this has been partly responsible for our failure to produce results of quality in this sphere. In view of our recommendations for the establishment of commercial institutes we recommend that one of these institutes in each province should have a teacher-training programme incorporated in it.

42. For the training of the teachers needed for the different levels and institutions we have the following suggestions to make :

- (a) *Secondary Schools : Classes IX-X.*—We recommend the recruitment of persons with B. Com. or B. A. (Econs.) for a one-year course of training.
- (b) *Secondary Schools : Classes XI-XII.*—We recommend the recruitment of persons with M. Com. or M. A. (Econs.) for a one-year course of training.
- (c) *Commercial Institutes.*—For subjects such as shorthand and typewriting, book-keeping and accounts, we recommend that emphasis should be placed upon practical experience and skill in the subject which is to be taught. Preference should be given to graduates and the training course should be one-year full-time. Eventually, provision should be made for the recruitment of persons who have obtained the two-year diploma from a commercial institute and who have had appropriate subsequent experience in industry. For other professional subjects a Master's degree with commercial experience would be required followed by six months full-time teacher training.
- (d) *Evening Institute Teachers.*—Short courses of about one month would be adequate in these cases.

43. It is of great importance to secure the best qualified staff possible for teaching these courses. Competition for their services will be keen and the salaries offered will play an important part in their recruitment and retention. We suggest that the appropriate authorities study this problem with a view to evolving a salary structure which will be competitive with outside employment.

X. In-Service Training :

44. The efficiency of an organization depends on the efficiency and integrity of its personnel. Unfortunately, from all the evidence, the state of efficiency in our government service is very low and there is strong need for training.

45. We, therefore, recommend that the Central and Provincial Governments should arrange for an in-service training programme for the employees of the Secretariat and Attached Departments.

46. If necessary the programme may be administered by an officer drawn from the Central and Provincial Secretariats not below the rank of a Deputy Secretary. Some of the new institutes would be staffed by specialists obtained from abroad and their advice would be available to the organizers of these courses.

47. Once the commercial institutes have been set up we recommend that Government should declare it obligatory for Government servants to attend a programme of in-service training and make it clear that further promotion would be made with due regard to the evaluation of results obtained in these courses. So far as English is concerned, the emphasis should be on its use as a language of communication rather than of literature so as to develop facility in proper and easy expression.

48. The programme of in-service training would also provide instruction in professional ethics. One of the main criticisms against Government is that its functionaries are not always civil, and this programme would emphasize the virtues of civility and good public relationship.

D. COMMERCIAL EDUCATION

SUMMARY OF RECOMMENDATIONS

II. Aims of Commercial Education :

1. The objectives of commercial education should be to produce (a) skilled clerical workers ; (b) supervisory personnel who can interpret the policy requirements of the management ; and (c) executives who are thoroughly conversant with economic and commercial principles and able to frame policy for production and development. (1—9).

2. (a) School curricula should be diversified so that pupils may take up in accordance with their aptitudes a few elective subjects in the field of technical, agricultural and commercial studies in addition to the core of compulsory subjects.

(b) Commercial institutes offering professional courses should be established. (14).

3. The first major diversion from the traditional pattern will be after class X and the second after class XII. (15, 16).

III. Commercial Institutes :

1. The commercial institutes should have a two-year course and offer basic training in office skills combined with background studies and language instruction. (18, 19).

2. In co-operation with professional organisations, the commercial institutes should also devise courses in special fields such as insurance, banking, accountancy, secretarial work, advertising and salesmanship, personnel management, transport, textiles and government office practice.

V. Higher Education in Commerce :

1. The course for a bachelor's degree should last for three years. The master's degree course should cover two years. Advanced courses should also be conducted for the doctorate, the thesis for which should make a significant contribution to the industrial and commercial life of the community. (25, 26).

2. *Practical Experience for Students and Teachers.*—Students of commerce should be made familiar with the practical problems of management. They should, therefore, spend a period during each vacation in commercial employment. Teachers of commerce may be permitted short periods of attachment to business or industry once every three or four years. (27).

3. *Diplomas in Public and Business Administration.*—The Institute of Public and Business Administration at Karachi should be strengthened, and students from all parts of the country encouraged to join it. Other universities may also develop programmes of work on the lines of the Karachi Institute. (29).

4. Courses in public administration will be of great advantage to young persons wishing to enter public service as well as to those who have already entered it. The Karachi Institute should organize special evening classes in public administration for the benefit of serving officials. (30).

5. Courses in industrial management suited to the requirements of small-scale industry should also be developed in the Institute of Public and Business Administration and the colleges of commerce. (31).

VI. Evening Classes :

Evening classes should be organized in commercial institutes and other educational institutions for the benefit of workers in industrial and commercial firms and for students preparing for the examinations of the professional organisations. (34, 35).

VII. Commercial Examinations :

Boards of Commercial Examination should be established in Karachi, East Pakistan and West Pakistan, with the following functions :

- (a) to frame suitable curricula and hold examinations for the two-year full-time courses ;
- (b) to conduct other examinations suited to the requirements of persons in commercial employment who attend evening courses ;
- (c) to co-operate with professional organisations (bankers, accountants, cost accountants, etc.) so that the examination system thus devised meets their requirements as far as possible ;
- (d) to hold a series of examinations suited to the requirements of government service at various levels. (36).

VIII. Control of Commercial Education :

The control of commercial education should be vested in the Directorates of Technical and Vocational Education in the provinces and co-ordinated by the Ministry of Education at the Centre.

IX. Teacher Training :

1. At least one commercial institute should be established in East Pakistan and one in West Pakistan for the training of teachers in commercial courses. (40, 41).

2. Teachers for Classes IX and X should be persons with the degree of B. Com. or B. A. (Economics) who have received additional professional training for one year. Teachers for Classes XI and XII should be persons with a Master's Degree in Commerce or Economics who have also received an additional year of professional training. (42, 43).

X. In-service Training :

The Central and Provincial Governments should arrange for an in-service training programme for the employees of the secretariat and attached departments.

E. MEDICAL EDUCATION

1. Recognizing the highly specialized character of medical education the Commission does not consider it proper to discuss the purely professional content of this course of study. We will, therefore, confine our observations to those issues which the medical course faces in common with the other sectors of higher education.

I. Admission Requirements :

2. The first question in this context is the qualifications for admission to medical colleges. The views expressed to us on this subject are almost unanimously in favour of permitting admissions strictly on merit as evidenced by performance in the I.Sc.|F.Sc. examinations, medical group. On the question of aptitude and oral tests, the opinions expressed were divided chiefly because of the fear that such criteria might be misused. We however feel that with the precautions indicated elsewhere in the report, properly developed aptitude and oral tests could safely be adopted to detect those who, though academically well-qualified, may not be temperamentally suited to medical education.

3. Related to this issue is yet another problem, namely, the recommendations of the Pakistan Medical Council to the medical colleges to establish a pre-medical course of two years covering the subjects of the present I.Sc., medical group. We recognize that this recommendation mirrors the dissatisfaction of the Council with the standards which the medical students attain in these subjects in science colleges. We also appreciate the fact that the medical colleges might give these subjects a certain amount of practical bias which would help the medical student in the study of professional subjects. On the other hand, this proposal has the serious drawback of necessitating diversification at the matriculation level when most students are not mature enough to be capable of selecting a course so highly specialized as the study of medicine.

4. Nevertheless, it should be recognized that in the present I. Sc. course, the teaching of certain subjects such as biochemistry, optics, and statistical methods does not receive enough emphasis. The curriculum should, therefore, be revised to remedy this defect so that it will not be necessary to offer separate course in these subjects in medical colleges.

5. We understand that the Pakistan Medical Council have recently decided to withdraw this recommendation but they have not so far circulated the new decision. We suggest that this be done as soon as possible.

II. Curriculum :

6. Of the views expressed to us on the content and duration of the medical course the vast majority favour retaining the present system unaltered with the exception of certain minor details. We feel, however, that despite the close study to which the medical curriculum has recently been subjected both by the Pakistan Medical Council and the Pakistan Association for the Advancement of Sciences, there is an urgent need for fresh enquiry into the matter by an authoritative body of teachers of professional subjects and general sciences with the object of bringing the

medical curriculum into line with modern trends. This is more particularly necessary in respect of the pre-clinical period of the medical curriculum where the basic medical sciences are taught. We consider that the teaching of these subjects deserves to be more closely integrated with that of the other scientific disciplines in the university than has been the practice in the past. Indeed we would emphasise the need for exploring the possibility of including one or more of these sciences in the B.Sc. Honours Course as is the practice in many countries. This proposal, if adopted, will give these subjects the status of independent disciplines with freedom to grow and to develop academic contacts with allied sciences rather than remain in their present restricted sphere of subservience to the requirements of the medical curriculum. We feel that until this is done and until the universities take active steps to foster specialization not only will there be no opportunities for advancement and research in these subjects but there will be none for producing a sufficiency of teachers for the pre-clinical courses in the medical colleges.

7. The syllabuses of the basic medical sciences for the university degree and for the medical curriculum will need to be clearly differentiated. As we have suggested, this task should be entrusted to a special committee of enquiry whose terms of reference should include additional points such as the integration of the teaching of clinical subjects and basic sciences, the improvement of proficiency in laboratory techniques and operative surgery, the extension of the scope of social and preventive medicine in the medical curriculum, and the introduction of tutorials, seminars and pre-registration internship.

8. As regards the humanities and social sciences, the majority view is that while the teaching of these subjects is most desirable they should not be classified as subjects for examinations as the medical course is already overloaded with examination subjects. We are in general agreement with this view but at the same time consider these subjects to be so necessary a part of the educational experiences of a doctor that we would advise special efforts to give them an important position in the curriculum. It may be feasible, for example, to include the basic principles of economics and sociology in the Public health and Hygiene course. Humanities may similarly be introduced in the form of para-curricular lectures on the history of medicine and medical ethics with special reference to the contribution of Muslim scientists and philosophers.

III. Number of Doctors :

9. At the time of independence there was only one fully functioning medical college in the country with an admission rate of about 120 students a year. Two other colleges had already started classes but they were still in the second year of the five-year course.

10. At the present time there are nine medical colleges in the country admitting 765 students annually. Of these, three colleges have not yet reached the final year but the remaining six turned out 417 medical graduates in 1957 and 488 in 1958. The output of graduates will progressively increase and is expected to reach the figure of 600 a year by 1963. Thus, during the last twelve years admissions to medical colleges as well as the output of medical graduates has gone up five-fold while in another three years the increase will be six times the 1947 rate.

11. Clearly there has been a tremendous expansion of medical education in the past twelve years. Unfortunately this expansion took place under severe handicaps imposed by the limited resources of the nation. It was not always possible to provide the qualified teachers, adequately equipped laboratories or properly staffed and equipped teaching hospitals which are essential to good medical education. As a result, although facilities for medical education have increased there has been a grave deterioration in standards in medical colleges. The most urgent and immediate task facing our system of medical education is to reverse this trend through a carefully planned programme formulated by competent medical people. Such a programme should include among its objectives the training of a large number of well-qualified teachers at all levels, the provision of well-equipped laboratories, the procurement of audio-visual apparatus on a generous scale and, the revision of the medical curriculum to meet modern needs and conditions.

12. We would also suggest that until adequate resources are available to staff and equip the existing institutions well and to provide for new ones, the main effort should be on consolidation rather than expansion. In making this recommendation we have tried to assess its effect upon the number of doctors in the country which is at present approximately 9,000. The addition of the anticipated annual output of 500 to 600 medical graduates and half that number of licenciates represents an annual increase of about 8% to 9%. Allowing for wastage and anticipated population increases the net annual increase should be close to 5% on the average. This should bring the number of doctors in the country by 1964 to 10,800 or a ratio of 1.35 doctors to 10,000 population. This ratio is undoubtedly low when compared with that prevailing in the USA and the UK where the corresponding proportion is 14 doctors per 10,000 population. We are, of course, anxious that the number of doctors should be increased as rapidly as possible but, as we have maintained elsewhere in this report, no real service is performed when quantity is substituted for quality. Our first objective must be to turn out first-rate medical practitioners and only after we have reached this point we consider increasing their numbers as the resources of the nation permit.

IV. Post-Graduate Training and Medical Research :

13. There is no doubt from the evidence before us that the present facilities for post-graduate studies and medical research in the country are inadequate. The existing diploma courses in clinical specialties and the post-graduate degrees in medicine and surgery are not up to the requisite standard and do not, therefore, command the respect and valuation they should. The chief reason for this unfortunate situation is that post-graduate training is being attempted on a no-cost basis. Professors and senior teachers who already carry a heavy load of under-graduate teaching have neither the time nor the incentive to pay much attention to the post-graduate students. As a result, the educative aspect of house appointments and resident posts in teaching hospitals where medical specialists usually begin to take shape is completely neglected. Moreover, the existing medical colleges have neither the library services nor the facilities of up-to-date diagnostic laboratories fitted to carry out biochemical and micro-biological tests. Nor do they possess suitably equipped radiological departments for post-graduate instruction.

14. In these circumstances, a very special effort will have to be made if we are to bring the standards of our post-graduate training in medical colleges and institutes in line with those of the corresponding courses in foreign countries. We have already emphasized that until we are able to organize local post-graduate specialist courses of the highest standard covering a wide variety of subjects we cannot achieve the degree of independence and self-sufficiency which is essential for the future development of higher education. This applies with equal if not greater force to medical education. The question of whether these courses are to be spread over many colleges or concentrated in a few colleges or post-graduate institutes should be referred to a body of specialists who should decide the issue after assessing the facilities available in the country.

V. Examinations :

15. Since the standards of professional examinations are under the constant surveillance of the Pakistan Medical Council we do not feel called upon to comment on the nature and contents of these examinations. The weaknesses and defects of the medical examination system as a whole are, however, exactly the same as in other subjects. These have been discussed at some length in the chapter on Higher Education where we have proposed remedial action which we suggest should be suitably adapted for application to medical examinations.

VI. Technicians :

16. As in other institutions in the country, there is an extreme shortage in medical colleges and hospitals of technicians of all categories, but more particularly of those designated as "skilled operatives" and "supervisors" in our chapter on Technical and Vocational Education. As a consequence, a great deal of machinery and equipment is lying unused for want of proper maintenance and repair. Since most of the articles of equipment are imported, their replacement has become extremely difficult if not impossible because of the paucity of foreign exchange. The teaching staff is, therefore, denied the advantage of teaching students the latest techniques through practical demonstration and the handling of apparatus. The provision of an adequate maintenance and repair organization manned by technicians properly qualified at polytechnics is thus an essential requirement of our medical teaching institutions.

17. Apart from these, the various departments of the medical colleges and teaching hospitals require a large number of technicians with specialised knowledge of the different areas of medical science. A notable defect of the present system is that the technicians selected for such training do not possess adequate academic qualifications, the majority being non-matriculates. This restricts the scope and horizon of their attainments so that, despite experience and practical knowledge accumulated over the years, they fall short of the competence and skill expected from a technician who is required to play a vital role in the advancement of teaching methods and research techniques. We appreciate that the only effective method of producing professional technicians on an adequate scale would be to continue, and if necessary to intensify, the present system of in-training but we would urge that only those persons

be selected for such training as possess a matriculation certificate either from a vocational school or from a multi-purpose secondary school with facilities for technical courses.

VII. Nursing Education :

18. We are convinced that the nursing profession will not prosper to any substantial degree until the status and pay scales of nurses are raised. Although we have received certain concrete suggestions in respect of variations in the contents of the syllabuses and improvement of amenities in training schools, it is not our intention to enquire into the strictly professional aspects of nursing education which we feel can best be left to the consideration of the Pakistan Nursing Council and to medical and nursing experts. We fully recognize the influence of the raising of status and pay scales of the nursing staff on the future of nursing education, but we feel that this is not the complete answer to our problem. We consider that a radical change is necessary in the prevailing attitudes towards the nursing profession if a permanent improvement is to be effected. It is necessary that the public be educated to look upon the nursing profession with the respect it deserves. We realize, however, that given our present social structure, it will be necessary to awaken in our girl students an active interest in and a liking for the nursing profession. Our recommendations to introduce courses of practical arts with emphasis in home economics in the secondary schools is intended to serve that purpose. Another measure recommended for adoption is to devise and effectively use special aptitude tests for admission to nurses' training schools. We realize that this may appear superfluous at present when the number of applicants is often smaller than the number of vacancies, but we feel that unless admissions are selective there is no likelihood of improvement in the tone of nurses' teaching institutions or in the quality of their products.

E. MEDICAL EDUCATION

SUMMARY OF RECOMMENDATIONS

1. Admissions to medical colleges should be after 12 years of successful study and by merit on the results of the I.Sc. Examination medical group and suitably evolved aptitude and oral tests. (2).

2. The syllabus of the pre-medical course should be revised to give greater emphasis to certain subjects such as bio-chemistry.

3. The feasibility of including pre-clinical sciences in the B.Sc. course, as is the practice in many countries, should be examined. (6).

4. The main effort should be directed towards improving the standards of the existing institutions. Arrangements should also be made for the post-graduate training of specialists of the highest standard. (12 & 14).

5. The medical profession is seriously handicapped by the absence of well-educated and proficient technicians. Arrangements should be made for the in-training of these technicians, selected from amongst those possessing the requisite academic qualifications. (17).

6. The status and pay scales of nurses should be improved. Courses of practical arts should be provided in secondary schools to promote the interest of girl students in the nursing profession. (18).

CHAPTER 3

SECONDARY EDUCATION

I. General :

1. The secondary schools of this sub-continent have long been the subject of deep concern. Reforms have been suggested time and again but few have been carried out. The tradition of the literary type secondary schools has been so strong among the public as well as among educators that resistance to change has frustrated the intention of nearly all reformers. The result is that in many important respects these schools retain many unwelcome characteristics dating from the last century.

2. Yet this stage in the educational ladder is universally recognized to be the critical one in determining the effectiveness of a national system of education, and current school reform movements in Western Europe, the U.S.A. and the U.S.S.R. are concentrating most of their attention on it. It is the stage where most of the skilled manpower of a nation will be trained, where the quality of future university students will be determined, where character building and the qualities of leadership can best be developed. It comes at a time when the child is in his most impressionable and formative adolescent years, when the features of the future man, woman and citizen are beginning to appear and require full encouragement, scope and sympathetic help in their development. The education offered should provide for the development of all individual talents and social values while equipping those who follow it with those basic skills judged necessary in modern society. These many aims can be pursued successfully only if this stage in the education ladder is given the separate and specialized attention it deserves. We have already proposed in the chapter on Higher Education that Classes XI and XII should be separated from the control of the Universities and become part of the secondary stage along with Classes IX and X. This action will permit the treatment of the four years immediately preceding higher education as a single unit, to be planned according to the special needs of children of this age group, including those who intend to go on to university as well as the larger number who will leave after Classes X and XII.

3. The present defects of our secondary school system are well known, but it will be useful to summarize them here as the starting point for the reforms we propose :

- (a) It has mainly served the purpose of training civil servants and office workers, with completion of the school course as the passport to government service. Designed along these lines, the curriculum was over-loaded with literary subjects.
- (b) When in this century our society underwent a rapid series of changes, our schools remained static, isolated from the social, economic and industrial evolution around them, and failed to meet contemporary demands. The main weakness of our secondary education is the absence of full opportunities for training in technical and other vocational subjects, and its inflexibility and lack of diversification which fails to correspond to social needs and individual aptitudes and interests.

- (c) Matriculation has come to be regarded as the qualification for university admission and not as a terminal examination. The result is that the schools have become increasingly dominated by university requirements despite the fact that most children drop out at points along the secondary school route and never enter a university.
- (d) The present curricula for secondary schools lay too much stress on mental ability—particularly in literary subjects—and too little on other equally important attributes of the developing boy or girl—physical well-being, personality and character—and on developing hand skills or fostering a pride in dexterity and technical achievement.
- (e) Prevailing teaching methods can only be described as the mechanical communication of theoretical book-learning to reluctant children. Too much stress is laid on memorization and far too little on initiative, independence of thought, habits of industry, imaginative use of knowledge and selfreliance.
- (f) The teachers work to prescribed syllabuses and textbooks in overcrowded classrooms ; in addition, many labour under the handicap of insufficient training, low salaries, and little standing in the community ; it is small wonder that the best talent is not attracted to teaching and that these conditions have led to a deterioration of standards and a sense of frustration among the teaching profession.

4. Two of our most urgent national needs are the substantial improvement of our productive efficiency and the development of nation-building attitudes among our young people ; the secondary school has a critical role to play in both directions. Productive efficiency depends largely on the work of the engineers, scientists, and agricultural specialists produced by our universities. These cannot, however, translate their productive ideas into goods and services without the backing of a large body of efficient and reliable technicians in industries, offices and on the land. Both the universities and institutions for the training of technical and professional personnel depend on the secondary schools for students to be trained.

5. On the other hand, the majority of children who enter secondary schools never go beyond this stage, and these constitute the bulk of the educated community. It is of the highest importance that steps be taken in the secondary school to develop in them a sense of patriotism and love of their country, combined with a spirit of service. No nation can develop in independence and freedom without a solid core of citizens imbued with a sense of personal dignity and social consciousness. These qualities can best be developed during the secondary stage of education.

II. Objectives of Secondary Education :

6. The analysis of these weaknesses in our present system helps to pin-point the true objectives of secondary education. It is usual for educational systems to lag behind actual needs and the recent accelerated rate of social change has made this criticism true of nearly all countries. Our own secondary system is so far removed from our actual and immediate needs, as to make it hopelessly inadequate. We can no longer afford to postpone reform : given our limited resources, however,

our reform plans must be spread over a reasonable period so as to cause as little dislocation of the present structure as possible, leaving adequate room for healthy and organic growth and drawing in broad outline the framework within and around which a new system can evolve and grow.

7. We shall now define what we consider should be the principles governing secondary education and inspiring its curricula, syllabuses, textbooks, teacher-training programmes and teaching practices.

8. The first and basic principle is the recognition of secondary education as a complete stage in itself and the need to demarcate it clearly, in respect of objectives, purposes, methods of teaching curricula and equipment, from university education. It should not be considered to be subsidiary to such education or be designed merely as preparation for it. Rather it should be accepted as a separate academic and administrative unit and organised as such. This reform is implied in our previous recommendation that Classes XI and XII should be separated from university control. Secondary education must be designed to prepare young people for careers and equip them intellectually, physically, morally and vocationally for a full life, as individuals and citizens. It cannot carry pupils to a high level of specialized knowledge. Some, indeed, will wish and need to pursue learning for professional work and scholarships at college and university, but that fact should no longer be allowed to dominate; all that is required is that the nature and duration of certain courses at the secondary level should be such that the potential college student is properly equipped to make the fullest use of his degree study. But in essence, secondary education is a self-contained unit, terminal for the majority of pupils and coming at a time in their lives when it presents its own special problems and purposes.

9. The second principle is that secondary education caters for pupils who will enter a variety of careers, who have a variety of talents and interests and who are able to remain at school for varying periods. It should provide general education to pupils in such subjects as will enable them to understand and enjoy the fruits of social progress and of scientific discovery and invention. It should also enable them to participate in economically useful activities and thereby earn a living and lead honourable lives. There thus should be a common core of subjects to ensure the development in all pupils of certain basic mental and manual skills and traits of character. This should be supplemented by a diversity of courses which would on the one hand suit the aptitudes of different children and on the other prepare them for different vocations.

10. But the addition of new subjects or courses to the secondary stage, though vital to the reform of our present system, is not by itself sufficient. A new conception of teaching is also necessary. No one contests the view that the elementary bases of education—reading, writing and arithmetic—provide an insufficient foundation for modern society. Simply extending it by adding other subjects will still not be enough, for the acquisition of a mass of knowledge is less important than the way in which it is acquired, ordered and used. Memorization, useful though it may be, is less important than the development of mental skills, character, and aesthetic and spiritual values. Such matters are of special importance at the secondary stage, when teachers have their greatest impact on pupils; and timetables, teaching methods, and teacher-training should be devised accordingly. This is the third principle we would lay down.

11. The importance of creating a spirit of nationhood in all Pakistanī citizens cannot be over-emphasized. As a newly emergent nation, Pakistan must consolidate and develop the concept of Pakistan nationhood with particular emphasis on Islamic values. The school has a major role to play in the process, not only by training the men and women who will love and serve the nation and make sacrifices for it but also in developing the characteristics of good neighbours, good citizens, and true patriots. We should foster among school children a love of their country and a desire to serve it, based on a deep appreciation of its history, aspirations and cultural and social patterns, and a determination to correct its weaknesses and social injustices and contribute to its development as a free, progressive and prosperous nation.

12. But narrow nationalism in the modern world is not enough ; and if we gave the child only this we would be doing him a disservice. Nations are a part of one another, and none stands alone. Pakistan is in the particular position of having cultural, historical, and spiritual ties with the Middle East, Asia, Europe and North America. This rich heritage is itself a national asset and provides an ideal starting point for teaching international understanding and a realization of our membership in a comity of nations.

13. Implicit in the last three paragraphs is the concept of teaching directed to character-building. This concept is basic, and is dealt with at length in a separate chapter. Education has a responsible part to play in developing those qualities in the child which will enable him to live harmoniously with himself and his fellows. These include self-reliance, self discipline, helpfulness, a sense of justice, habits of industry, honesty, courage and self-confidence. Activities in and outside the school, teaching methods and the standards set by the teachers themselves should be conducive to the development of these qualities.

14. Following on this analysis we believe that what is now needed for our secondary schools is no less than a re-definition of aims, a re-orientation of school courses and structure, the provision of trained teachers and facilities to ensure that subjects at present included in the curriculum are actually taught and taught properly, a drastic reform of teaching methods and a unanimous resolve to have done with slipshod work, malpractices and loose discipline : in short, the construction of a system which will meet the needs of our children and our country.

15. We consider that in order to fulfil the aims of secondary education in Pakistan, the appropriate education authorities should take the necessary steps to ensure that teaching practice, the content of teacher-training and the construction of curricula and time tables are such as to bring about the full development of the child (a) as an individual , (b) as a citizen, (c) as a worker and (d) as a patriot. Secondary education can realize these aims if it is directed towards the following objectives :

(a) *Development of the individual :*

- (i) To foster in children the spirit of enquiry and independent thought and the ability to apply their knowledge to real life situations.
- (ii) To relate all teaching to the needs and interests of the adolescent.

- (iii) So to design teaching and the organization of school activities as to develop the qualities of leadership.
- (iv) To develop the aesthetic sense and an appreciation of cultural values among children.
- (v) Through games, sports, and physical education to cultivate in children a liking for and skill in physical activity and the enjoyment of sports.
- (b) *Development of the citizen :*
 - (i) To rear children in the habits of industry, self-discipline and honesty.
 - (ii) To cultivate a sense of social responsibility and the habit of participation in socially useful tasks.
 - (iii) To develop the spirit of co-operation and service.
 - (iv) To relate teaching to the needs of practical life and local environments.
- (c) *Development of the worker :*
 - (i) To cultivate a deep appreciation of the dignity of labour.
 - (ii) To provide full facilities for technical, scientific and other vocational education as preparation for further professional education or qualification for a career.
 - (iii) To provide the services of educational and vocational guidance and thus direct children towards the most appropriate courses and subsequent careers.
- (d) *Development of the patriot :*
 - (i) To provide a form of education which has its roots in the national culture and in Islamic values.
 - (ii) To nurture a pride in the nation, an understanding of its history and aspirations, and a willingness to serve it.
 - (iii) To create an appreciation of the universal brotherhood of man and a spirit of international understanding.

III. Duration of Secondary Education and its Stages :

16. Pre-university education in Pakistan as a whole is divided into the following stages :

(a) Pakistan, except former Sind :

Stage	Duration	Age
Primary	5 years	5+ to 10+
Middle	3 years	10+ to 13+
High	2 years	13+ to 15+
Intermediate	2 years	15+ to 17+
		17+

(b) Former Sind :

Stage	Duration	Age
Primary	4 years	5+ to 9+
Upper Primary or Middle	3 years	9+ to 12+
High schools	4 years	12+ to 16+
Intermediate	2 years	16+ to 18+
		18+

17. The first public examination, the Matriculation, is taken at the end of 10 years' schooling (11 in former Sind) and the second, the Intermediate, at the end of 12 years (13 in former Sind). These are known as the Secondary School Examination and the Higher Secondary School Examination in the area under the jurisdiction of the Board of Secondary Education, Lahore.

18. In the past universities in Pakistan were responsible for the regulation and organization of education and examinations from class IX onwards. In recent years the trend has been to assign this responsibility to the Boards of Secondary Education, of which there are now three—at Dacca, Karachi and Lahore. The matriculation stage is included in the jurisdiction of the Karachi and Dacca Boards while the Lahore Board is in charge of both matriculation and intermediate. In the Peshawar and Sind regions both are still controlled by the respective universities.

19. In all advanced countries, education preceding admission to university degree courses is recognized as school education and referred to as the secondary school stage. Admission to the university is at the age of 18 or 19, and the total duration of pre-university schooling is about 12 years.

20. The secondary stage thus covers post-primary education below the university level. It is, as stated, a self-contained unit with its own problems which differ fundamentally from those of university education. At the university stage, the students is comparatively mature and should be given full freedom to work by himself. The principal method of teaching is by lecture and tutorial, and the student is treated as an adult. At the secondary stage, he is an adolescent who must be carefully guided. Instruction methods are more illustrative, and a larger amount of time is devoted to corrective work. Guidance is more personal and a sense of discipline has to be inculcated by closer supervision.

21. We have already recommended in the chapter on Higher Education that classes XI and XII (the present intermediate) be transferred to the control of Boards of Secondary Education and be regarded as an integral part of secondary schooling. This step will permit us to plan more thoroughly for adequate secondary education.

22. As stated in the chapter on Primary Education, our objective is to provide free and compulsory education up to class eight. This would constitute the elementary stage, after which secondary education would extend over a four-year period and be followed by higher education. This is a long-term objective and we have taken the view that, for the present, free and compulsory education should be provided for five years and that the three years' middle school period (classes VI to VIII) should be treated as part of secondary education. We must now consider the separate stages of secondary education.

23. It is generally agreed that pre-university education should be of twelve years duration, though some argue that this should be thirteen years. If it should be twelve years, then it is further argued that the stages should be five years for primary, four years for lower secondary and three years for higher secondary. We have given this matter careful consideration and we are in favour of the *status quo*, namely five

for primary, three years for the middle, two years for the secondary and two years for the higher secondary. Our reasons are the following, among others.

24. The fixing of a stage at the end of the ninth year would mean in practice that the present stages ending after eight and ten years would be replaced by one stage of nine years. This would raise our target for elementary education from eight years to nine years. It is our hope that it will be possible over a period of time to push the period of compulsory education beyond eight years but in view of our resources, this is a very distant goal, quite beyond our range at present. On the other hand, this action would also reduce the two diversionary stages at class VIII and class X into one stage. The end of class VIII forms a convenient point in schooling for the diversion of pupils into trade and vocational courses and also leaves open the possibility of a further diversion, at the end of class X, into technical education at polytechnics, technical and commercial institutes, etc.

25. Moreover, by making the ninth class a finishing stage, we would be making it virtually equivalent to the present matriculation class. This, we fear, would lower the standards, which are already unsatisfactory.

26. There is considerable force, nonetheless, in the argument that the final pre-university stage should be of three years to provide adequate preparation. However, the methods suggested for achieving that end would disturb unnecessarily the structure of our educational institutions and could be quite effectively realized by other means.

27. Further, if the duration of elementary education were extended from class VIII to IX, all pupils of class VIII would go up to class IX. At present there is a large drop after class VIII. The expenditure involved in the prolongation of the course by one year would be considerable. Again, after class X there is a considerable drop. If class X were added to classes XI and XII, the students would continue studies up to class XII. This again would cause a severe strain on our limited financial and manpower resources.

28. While it is true that the tendency throughout the world is to push up the age of university admission (which in some countries is as high as 19), we regard it as inappropriate for the moment, in view of our limited resources, to consider an extension of the pre-university course by a year, particularly in view of the fact that we are separately proposing the extension of the degree course by a year. Apart from this, we feel that it would be possible to improve the functioning of the two years' pre-university course by certain fundamental reforms. For example, pupils waste considerable time due to preparatory leave before examinations, further leave after examinations and also at the opening of the school year. We propose that the matriculation examination should be held not earlier than April and that the summer vacation should end by the beginning of September. This would add about two months to the school year and would improve academic standards. Other similar steps could be taken to make better use of the time covered by a two year course.

29. As stated previously, our ultimate objective is to have only two categories of schools—elementary schools from class I to class VIII and secondary schools from class IX to class XII. Our objective in the meantime should be to allow maximum freedom to meet local conditions,

facilities and preferences. The present pattern of primary, middle and high schools and intermediate colleges should not be disturbed and gradual evolution should be encouraged. We should allow the establishment of four year institutions with classes IX to XII side by side with two year institutions with class XI and XII. The present high schools should continue to function as they are, with their students joining the higher secondary classes in neighbouring four-year or two-year institutions.

IV. Curriculum :

30. We have already stated that, for historical reasons, the present secondary curricula are predominantly theoretical and bookish. They do not adequately cater for all the talents of adolescents or the needs of our society, and are dominated by examinations and requirements outside the control of school authorities. At the same time, they contain subjects which have been added without proper planning and with little correction and grouping between them.

31. Curriculum development at the post-primary level must be concerned to correct this position and relate what is taught in secondary schools more closely to the actual needs of our society and to the talents and interests of our young people. There is a good deal of controversy over the stage up to which all children must study the same subjects. The influence of scientific discoveries and inventions on the daily life of man is gradually increasing the stock of knowledge necessary to meet the needs of everyday life. It is, therefore, sometimes argued that the knowledge required by every citizen for leading a useful life has gradually grown so large as to need at least 10 to 12 years education to acquire it. General education, needed by every citizen, should therefore, it is argued, be the same for all pupils up to the age of 17. It is further argued that diversification and specialization at an earlier stage would be academically and psychologically unsound. Those who oppose this point of view contend that special interests begin to emerge at the preadolescent stage and opportunities must be provided for their development. Moreover, the financial resources of the State and of parents do not permit them to educate every child up to the age of 17. Those who have to terminate their education earlier must be equipped to take up a career.

32. The consensus among educationists is that opportunities for diversification at about the ages of 13 and 15 must be provided besides those at the end of the secondary stage. We accept this view and recommended that the curriculum at the secondary stage be based on two basic principles. Firstly, it must provide adequate knowledge of subjects that will be needed by every pupil for leading a useful and happy life in a fast developing society. This should form the core of compulsory subjects which every student must take up. Secondly, the curriculum should include such additional subjects and training as will form a preparation for specific vocations and careers.

33. For this purpose we propose two steps which we believe will be of far-reaching consequence. The first is that our high schools should be developed as multipurpose-schools, offering, besides a basic core of subjects, a range of optional subjects, particularly in the practical and industrial arts, which will permit children to choose, under the guidance of their teachers, a combination of subjects suited to their talents and ambitions and better related to our social and national needs. Our

second proposal is that a net-work of technical and vocational institutions be set up to which children with appropriate aptitudes and interests can be diverted after the VIIIth and Xth classes. This latter proposal is dealt with in detail in the following chapter and, if implemented, should do much to correct the greatest weakness in our existing secondary schools. It is with the first proposal that we are concerned in this chapter.

34. We find that in our educational system all subjects taught are regarded as of almost equal importance and the same number of periods are devoted to them; the result of this is that only a few subjects are included in the curriculum. In other countries, subjects are allotted varying degrees of importance in respect of teaching time and are introduced and terminated at different levels and in different years. The introduction of a subject does not mean that it should be taught throughout the five years from classes VI to X. The essential thing is to ensure that at least a basic knowledge is imparted of the subjects needed by an educated citizen.

35. At certain stages of schooling, and in this context particularly at the middle stage, it is common practice to group certain related subjects and teach them as an integrated whole in terms of problems or situations. Thus the elementary and introductory nature of the teaching of chemistry, physics and biology to be given to classes VI to VIII can be grouped together as "general science" and the teaching related to familiar every-day problems of natural phenomena. Similarly history, geography, and civics are commonly grouped and taught at this stage as one subject under the heading "social studies".

36. The application of these two ways of thinking about the curriculum will show that it is possible, by laying greater stress on one subject than another, by varying the number of periods devoted to its study in different years and by grouping some subjects at particular stages, for a child to have acquired a preliminary understanding of some 10 to 12 subjects by the time he has completed high school instead of the four to five our headmasters are now content with.

37. Those who plan the detailed curricula must, however, resist the pressures of specialists to crowd material on their subject into the various courses and make them too difficult for the classes for which they are intended. They must provide for a proper diversification of specialist courses linked to a core of common subjects; plan the curricula of different stages so that they naturally grow out of those of preceding stages and lead naturally to those of the following stages; assign due weightage to the subjects in terms of hours of study and attainment levels; indicate suitable groupings; and aim at an integrated and properly organized curriculum for the school system as a whole for its separate parts.

38. All these tasks are continuing ones. Experience in other countries shows that it is not possible to construct a curriculum which holds good for all time. Constant adaptation and refinement are necessary as the frontiers of knowledge expand and the needs of society and the individual evolve. This will be especially true of Pakistan over the next 10 years as we develop away from the traditional curriculum and introduce the structural changes advocated in this report. We

consider, in consequence, that as part of the implementation machinery for this report, syllabus committees should immediately be set up to review existing prescriptions in the light of our proposals.

39. On a long-term basis, permanent sections should be created to carry out continuous study and research into curriculum matters. These sections should be free to consult subject specialists but should preferably be staffed by experienced general educators so as to avoid the risk of the curriculum reflecting sectional interests.

40. Apart from these general considerations, we would emphasize that, in common with general world trends, the teaching of science, mathematics, and the practical arts must be strengthened and made compulsory from the VIth to the Xth classes in a manner related to the age, aptitudes, and future careers of the pupils.

41. It would seem a truism to remark that, in an age when science and applied technology determine the rate of progress of a nation, the teaching of science and mathematics should be given a strong place in our secondary school curricula. These subjects have, however, had to yield their rightful place in our schools to language teaching and other literary subjects for so long that the point must be made. Yet today great nations such as the USA and the USSR vie with each other in their teaching of these subjects in their education systems. In the USSR instruction in science and mathematics occupies as much as 45% of the total time devoted to instruction in the VI to X Classes, and there can be no doubt about the contribution this effort has made to the scientific and technological development of the country.

42. We believe that a balance should be maintained between the teaching of literary subjects, social studies, other elements of the curricula and the teaching of science and mathematics. Nevertheless these should occupy a very strong position and we recommend that considerable time be spent on their teaching in the VIth to Xth classes. While mathematics should be studied throughout from classes VI to X, it should have two levels in classes IX and X—general mathematics, compulsory for all pupils, and advanced mathematics, to be limited, for example, to those intending to specialize in science. Again, general science would be compulsory from classes VI to X but there should be two courses of science in classes IX and X, one at ordinary level for pupils taking non-science subjects, and the other at advanced level.

43. The practical arts must be interpreted to mean manual skills and understanding related to our conditions. For a large proportion of our children this will mean a development of knowledge about agriculture and we strongly urge that wherever possible garden plots or even small simple farms be attached to middle and secondary schools and that the boys be required to spend at least two periods a week on these.

44. Practical arts also means craft work and the learning of skills in the use of hands and machine tools. It means the commercial subjects of typing and book-keeping, and for girls home economics and simple nursing. For the proper teaching of these subjects special workrooms must be added to our middle and secondary schools and we

urge that this, together with the training of the necessary teachers, be given the highest priority. Departments should ensure that a proper study is made to develop standardized plans and standardized equipment so that costs are reduced to the minimum while maintaining standards.

45. At the middle stage, instruction in the use of the commoner hand tools should be compulsory. Projects in wood, cardboard, raffia, cane, leather, simple electricity and locally available materials should be devised. Girls' schools would require corresponding instruction in home crafts, needle work, embroidery, and other suitable hand work of an artistic kind.

46. At the end of the middle stage a certain number of children will wish to pursue vocational education further and these can be diverted to suitable vocational schools as they become available. Others may wish to continue general education in the high schools with some technical education as a preparation for later specialization in polytechnics, professional colleges or in-service training. The possible future careers are many, and as the high schools must also continue to prepare for university courses of all kinds and also supply a firm basis of general education to all they can only serve these several aims by becoming, as we have suggested, multi-purpose. A start has already been made in small number of schools and plans exist for further development. These should be pushed forward with vigour and the policy adopted of transforming all secondary schools into multi-purpose schools within a fixed period of, say, 10 years.

47. As far as introduction to the practical arts at the secondary stage is concerned, we consider that suitable subjects of the following kind should be introduced as optional for Classes IX and X :

- (a) Workshop courses in metal work, woodwork, electricity, for boys of proven aptitude wishing to take up engineering or other construction courses ;
- (b) agricultural courses, including agricultural crafts, for boys wishing to take up agriculture ;
- (c) commercial courses, excluding shorthand, for those wishing to enter clerical professions ;
- (d) home economics for girls ;
- (e) courses in art, artistic and ornamental crafts for both boys and girls.

48. These courses would be closely related to subsequent careers, but it should still be possible for any pupil who has completed any one of them to continue, up to university if necessary, on an arts or science course. The basic general education core should be included in every school course even though its bias, in courses such as these, would be towards aspects relevant to the practical arts. Careful curriculum planning and integration would be needed to ensure that these aims are met.

49. In the case of higher secondary schools, there should be full provision for technical courses, including industrial, agricultural, commercial, home economics, with the final examinations patterned accordingly. This

would provide pupils with pre-professional training and enable professional colleges to eliminate much of either preliminary instruction. Engineering colleges, for example, would be able to shed a considerable amount of instruction in tool-handling and simple machine drawing, which now absorbs so much time in the first year, and substitute matter more suited to university work.

50. The grouping of subjects at the higher secondary level should be particularly aimed at preparation for the various professions, with every group duly directed towards its particular objective. For instance, students intending to go on to an engineering college should have a course in drawing in addition to physics, chemistry, and mathematics.

51. Our students must acquire a reasonably high level of achievement in the national language. Proficiency in reading and writing will largely determine success in future studies and contribute materially to success in the chosen career.

52. As far as Urdu is concerned, we believe that present teaching is ineffective, nor a sufficient time devoted to its study. In our view, it should be taught from Classes VI to XII in the schools of West Pakistan, with a greater proportion of hours devoted to it during the middle stage and a gradual decrease in the higher classes as the pupils become more proficient. The same standard should be adopted for the teaching of Bengali in East Pakistan.

53. English, too, should in our view be a compulsory subject from classes VI to XII. Proficiency in English is a necessary element for success in all professions and most university course of study. It will also be necessary equipment for those who go on to study science and technology. The stress, however, should be on the functional nature of English, its use as a living language, rather than on the study of English literature. It should be given maximum emphasis in classes IX and X.

54. The amount of time we give to the teaching of a language should be in direct relation of its usefulness to the individual and our society. The greatest amount of time must, therefore, be given to the national language and to English.

55. Provision should also be made, if possible, for the teaching, as options, of other modern languages of Europe, the Middle East and Asia. Arabic and Persian have a special significance for us. We should, however, put greater emphasis on them as living languages and stress the functional aspects of these widely spoken languages. We should strengthen training in the method of such teaching at our training colleges and make serious efforts to recruit to the staffs of these colleges native speakers of English, Arabic, and Persian, who have been trained to teach them as functional foreign languages.

56. Apart from these languages, teaching in such other languages as French, German, Russian, Chinese, should be offered in at least a few of the secondary schools of each wing. Social studies, comprising history, geography, and civics, should be studied by all pupils from classes VI to X. In addition to the above range of compulsory and optional subjects, appropriate forms of physical and moral education should be given to all pupils. These, along with religious instruction and the medium of instruction to be used, are dealt with in separate chapters as they affect all levels of our educational system.

V. Evaluation and Examination :

57. Evaluation of the pupil's development is an integral part of any educational system, but to be fully effective it must cover not only his intellectual but also his moral, social, and physical growth. A regular record of personality development on these lines should be kept by every school and communicated to the parents and to the next school (or college) attended.

58. The present system of evaluation is confirmed to intellectual attainments and is based on written examinations conducted by the schools at the end of every term. These are hardly more than formalities and are not taken very seriously by either the pupil or the teacher, and there is not attempt to base promotion through the school on an objective and comprehensive assessment of the work done throughout the year.

59. On the other hand, the public examinations held at the end of classes X and XII are taken too seriously and absorb the entire attention of the teachers and the school authorities. Their short-comings are notorious : they consist solely of written tests in which success can be achieved through mere memorization, and practically no effort is made to test the pupil's intelligence, and no credit is given for the work done during the two years' course covering the examination curriculum. This completely destroys any incentive to study until "E-Day" looms near, for it is too distant a goal to encourage sustained effort over a long period. The few weeks beforehand are then spent in an orgy of cramming. The whole effect is to undermine school discipline and to arrest the development of character.

60. It has been suggested that public examinations should be abolished and replaced by tests held at frequent intervals by the schools, which should be authorized to issue their own certificates. Periodic tests are undoubtedly most useful in providing short-term objectives which are within the pupil's range of vision and whose successive achievement breeds self-confidence and self-reliance. They also keep pupils busy throughout the year and thus contribute to regular habits and the formation of character.

61. Though useful, however, they are no substitute for public examinations, which are essential for testing overall grasp of the subject and call for a high degree of mental effort. They are also a yardstick for comparing the merits of pupils from different schools and foster a competitive spirit among the examinees and between their schools. They provide an arena for specially gifted persons from a wide area to show their mettle, and their abolition would end the spur of competition between schools and between their pupils.

62. We, therefore, consider that instead of being abolished, the public examinations should be supplemented by an assessment of school work done throughout the year by giving due credit, in determining the final result in the public examinations, to performance in periodic tests to be conducted by the teachers. It has been argued that an assessment of this kind would almost certainly be abused by the teachers-examiners who would give undue weight to their own pupils' efforts in the periodic tests. We do not share this view. Trust in a person's integrity usually inspires him to deserve that trust, and we are confident that teachers will not

betray it. As a safeguard, however, we recommend that the result of the periodic tests be publicly recorded by the teacher on the notice-board as well as in the pupils' progress reports. This will be a sufficient check, in our view, for no teacher will be able to face his class if he gives high marks to examinees whom their classmates know to be weak.

63. We consider that the tests should be held in all schools fortnightly, and that a substantial weightage should be given to performance in them in determining the result of the public examinations. Different views have been expressed on the extent of this weightage, and a figure of as much as 75% has been advocated. This, we feel, is on the high side, and we suggest that to start with there should be a weightage of 25%, leaving 75% for the final examination.

64. To make the teacher's evaluation as comprehensive as possible we suggest that the 25% should cover the pupil's entire school record and will include results of fortnightly tests and judgements on habits and general behaviour. The marks given for habits and general behaviour should relate to the pupil's habits of cleanliness, punctuality, truthfulness, honesty, and the like.

65. The results of the proposed system should be carefully watched to see whether it fulfils its purpose and how far the teachers have honoured the trust reposed in them. Education authorities and in particular the Ministry of Education should take the initiative to set up a Board for keeping the system under constant review, so that the weightage can be adjusted in the light of experience.

66. In addition, a more rational relation must be established between instruction and examinations. As present, examinations completely overshadow instruction instead of growing out of it and being its natural climax. It is essential that completed examinations should themselves be subjected to critical analysis so as to find out whether they have properly tested what the examinees have been taught on the basis of the prescribed curriculum, how far they have tested memory and understanding, and what were the factors contributing to failure and success.

67. We consider that the Boards of Secondary Education should make arrangements for evaluating their examinations and set up permanent sections in their offices for this purpose.

VI. External Examinations :

68. A large number of candidates, the proportion being as high as 30% in some cases, take the Matriculation and Intermediate examinations as private candidates. The majority of them do not have the benefit of formal education in a recognized institution. It is now fully recognised that the presence of such candidates in increasingly large numbers has caused standards to deteriorate. The concept of private candidates is not consonant with good educational practice but for compelling practical considerations such as the needs of persons who must earn their living, we feel that it is not expedient to deny those who cannot undergo regular instruction in schools the opportunity of taking the Matriculation and Intermediate examinations, because these are important stages in the educational system.

69. In the reforms that we have suggested we have emphasised the need of personal contacts between the teacher and the students by means of tutorials and guidance. In particular, we have suggested that the student should undergo periodical evaluation and that, in the public examination, 25% of the marks should be assigned to the evaluation of his work by the school authorities. Clearly candidates who have not received formal instruction in school cannot be grouped with those who come from schools, and, therefore, it is necessary to set for them a different type of examination. We recommend that for such candidates the universities and the Boards of Secondary Education should conduct external examinations. The external examinations should, however, be conducted only in such subjects as do not require sustained laboratory work; there should be no external examination in science subject such as physics, chemistry, and biology.

70. We have also recommended that when a student fails in an examination he should be advised not to join an educational institution but to take the examination privately so that the limited places in our institutions should not be given to failures. Such boys and girls, having gone through the experience of regular education under the personal supervision of the teachers, should take the normal examination for regular students. The others must take the external examination.

71. The universities and the Boards of Secondary Education in framing syllabuses for external examinations should ensure that academic standards are maintained at a reasonable level. The general pattern of syllabuses in respect of core subjects and electives should be the same as suggested in this Report.

EXAMINATIONS IN CLASSICAL AND PAKISTANI LANGUAGES

72. Apart from the Matriculation and Intermediate examinations, there are in West Pakistan separate examinations held in Classical and Pakistani languages. Different names such as Adib, Alim, Fazil, Proficiency, High Proficiency, and Honours, are used for these examinations by different educational authorities. A number of persons take the Matriculation and Intermediate examinations after passing the Languages Examinations. Under existing practice they have only to pass in English at a corresponding standard to qualify for the respective certificate.

73. The main object of the classical and Pakistani languages examinations is to provide for broad specialization in a particular language and in the historical and classical studies pertaining to it. As a matter of fact, however, quite a large percentage of persons who pass these examinations eventually qualify for ordinary university degrees and enter Government service.

74. Under the existing rules, it is not necessary for candidates to pass a lower examination in order to be eligible to take the higher examination. With a few exceptions, they do not undergo any regular schooling. Regular instruction is arranged only at Oriental College, Lahore, for a small number of students. Most of the candidates study the subjects privately, and the conditions under which they study and the period devoted to it are not standardized.

75. Two reforms appear to us to be necessary. The first is that the syllabuses for these examinations need revision to bring them into line with present requirements, particularly as regards the content of the various courses. The second is that a system of gradation should be adopted and the higher examination should be allowed only after the candidate has passed the lower examination. In East Pakistan the principle of gradation is observed in the case of the Madrassah Board examination, and a candidate is permitted to take a higher examination only after he has passed the lower examination. This serves the main educational objective of maturity of judgement through study over a long period and of the character training which results from sustained efforts. We, therefore, feel that the same system should be followed in the case of language examination in West Pakistan.

VII. The Teacher :

76. No system of education can rise above the teachers who serve it, and its quality depends ultimately on the quality and efforts of the teacher. Education is a direct nation-building activity and if leaders of thought and action in the various walks of life are to be produced, the country's best talents must be used in the teaching profession.

77. To achieve a teaching profession in which the nation may feel confident certain things are necessary. The teachers must be properly trained before entering the service ; their knowledge and professional skills must be periodically refreshed ; they must receive a salary which will enable them to maintain a certain standard of living so as to preserve their self-esteem, and this must be adjusted to movements in the cost of living ; they should feel they belong to a profession where they can make a career with regular chances for promotion and be willing to shape their conduct according to its demands. We deal with several of these matters in more detail in the chapter on the Training and Conditions of Service of Teachers.

78. The actual situation is far from ideal. A large percentage of our teachers are untrained ; few opportunities for refresher courses are available ; the increase in salaries during the last ten years has never kept pace with the increase in the cost of living, and as the profession is poorly paid, it does not attract the most suitable candidates, and teachers are obliged to undertake tuition work. The system of evaluation and promotion is not conducive to the maintenance of high standards. No special incentives are provided for good teachers or deterrents for bad ones ; it is small wonder, therefore, that they often have little heart in their work and seldom show the devoted zeal that should be the hallmark of their profession. The result of all these circumstances is that the profession is held in low public esteem. Despite all these handicaps a few devoted teachers in some schools have struggled to maintain a standard of work as good as any elsewhere. The general picture, however, leaves no room for complacency.

VIII. Recognition of Schools :

79. Great harm has been done to the teaching profession, and to its dignity and efficiency, by the indiscriminate expansion of schools during the last ten years. The rules for the recognition of school lay down that teachers shall possess the prescribed academic and training

qualifications and there was once insistence on compliance with these rules. Unfortunately, during the last ten years the rules of recognition have been relaxed by the educational authorities either of their own accord or under political and governmental pressure. School have been allowed to open in the full knowledge that the managements did not have the resources to maintain them efficiently. These schools do not have qualified or trained teachers and this has brought the entire profession into disrepute. Over 25,000 teachers in the secondary schools lack the necessary qualifications for their jobs. The number of trained graduates working in the high schools is extremely small.

80. In a recent survey of the staff of high schools in the area under the jurisdiction of the Board of Secondary Education, Lahore, data was received from 629 high schools out of the 707. Of these 629 high schools, 19 had no trained graduates on their staff, 177 had only one trained graduate each, and 129 had two trained graduates each. A large number of these schools have a number of sections in each class and, after taking into consideration this fact, there should have been an average of six to eight such teachers in each school. The position is particularly depressing in the case of schools run by local bodies. Most of these were opened indiscriminately by the District Boards and are maintained poorly. Very few of these schools have science teachers even though science is being thought in the high classes. There are numerous cases where matriculates are teaching matriculation classes.

81. We consider that the provision of properly qualified teachers with the right personality and sense of duty is of paramount importance and no reform will succeed unless the rules of recognition of schools in this regard are rigidly enforced. We repeat that the establishment of schools without adequate and qualified staff is the greatest disservice which can be done to educational development. We also feel that necessary steps should be taken to repair past mistakes as soon as possible.

82. *Training.*—The teacher is the one indispensable part of the whole educational system and he must be properly trained. We are therefore suggesting in the chapter on Teacher Training that present professional training courses be lengthened. Apart from these courses we must consider also basic academic qualifications.

83. Secondary school teachers in all the advanced countries are trained graduates of qualified persons who have had three or four years' training after completing twelve years of pre-university education. This approximates to our B.A. with B.Ed. which should be the minimum qualification for all teachers for Classes VI to X. However, we recognize that lack of resources render this goal not immediately achievable, and we have therefore suggested in the chapter on Teacher-Training, that Classes VI and VIII may for some time to come be taught (except in English) by F.A./F.Sc.s. The teachers of Classes IX and X, and English teachers for classes VI to VIII should all be B.A. with B.Ed. For teachers of drawing and industrial arts (applied electricity, metalwork and woodwork), however, professional training would be more useful than graduation. For Classes IX to XII the ultimate aim should be to have four year institutions employing teachers with the same qualifications and the same scales of pay. When the three years B.A./B.Sc. graduates are available, those with B.Ed. training should be employed. For the existing Classes XI and XII second class M.A. should be accepted as the minimum requirement.

84. At present, the teacher of Classes XI and XII are on the whole fairly well qualified. On the other hand, the situation below this is generally deplorable, and it will be a very long time before our secondary schools can expect to have trained graduates throughout. We therefore suggest, as the target to be reached over the next five years, that teachers of all subjects in classes IX and X and teachers of English in classes VI to VIII should be trained graduates. The rest of the teachers in Classes VI to VIII should be Intermediate pass with two years' training.

85. To meet the target, we consider that the present teaching staff should be given an opportunity of improving their qualifications as rapidly as possible so as to meet the minimum requirements. Those who fail to do so should be relegated to teaching the lower classes. We also consider that arrangements for teacher-training should be suitably expanded by increasing the capacity of existing training institutions and if necessary by establishing new training colleges on a permanent or temporary basis, depending on requirements. Further recommendations on this subject are contained in the chapter on Teacher Training.

IX. Salaries :

86. Scales of pay of secondary school teachers should be substantially raised to be commensurate with their qualifications. This should also help to improve their social status and allow them a sense of self-respect. In the past, whenever, the question of improving teachers' pay scales has come up, there has been strong resistance on financial grounds due to the fact that the scales are determined with reference to those of subordinate services in other departments. Our witnesses have been unanimous in urging that there will be no improvement in the educational system until the salary structure of the teaching profession is treated entirely separately. We accept that view and consider that teachers' pay scales should be dissociated from those of other services.

87. The pay scales of teachers of industrial arts and technical subjects should be even higher than those of their colleagues, for in their case the schools have to compete with industry and commerce in attracting suitable talent.

88. The qualifications prescribed for teachers of classical and Pakistani languages and their pay are relatively lower than for others. We consider that this distinction should be removed and that those teachers should be on a par with teachers of other subjects as far as qualifications and pay are concerned. The same should apply to teachers of drawing and physical education.

89. In our opinion, it is essential that teachers should be adequately paid and not be obliged to undertake private tuition. When a salary scale is inadequate and a teacher is obliged to undertake such work, he usually does so with his own students and thus neglects his primary responsibility to them in the classroom. Teachers are providing a direct service to students. Parents who pay for this service have a right to demand that it be efficient. Conversely, a teacher has a right to demand that he should be paid an adequate salary which would enable him to give his undivided attention to the work of the school. His salary scale should, therefore, be equated with the nature of the service offered to students and society.

90. In the light of all these considerations we propose that existing salaries be raised in the light of the criteria outlined above, the scale of fees paid by pupils, and the actual cost of living.

X. Working Conditions :

91. The teachers, once they have been given reasonable pay scales, must be expected to fulfil their obligations efficiently and creditably and devote all their time to school teaching. We consider that teachers should then be debarred from giving private tuition and should be required to carry approximately the same work load as in other countries. The teacher's work load would include teaching work, student guidance, extra-curricular duties and preparation of lessons. We consider that every teacher in our secondary schools, from Class VI to X should be required to put in at least forty-four working hours a week. This should comprise twenty-two hours for teaching, ten hours for preparation of lessons, six hours for guidance and correction work, and six hours for extra-curricular activities.

92. Teachers should also be expected to keep abreast of the latest developments in teaching materials and techniques. Every teacher should attend refresher course once every five years for a period of at least two months. Those who succeed in coming out among the top on conclusion of the course should be given special increments and those who fail to attend or prove incapable of benefiting from it should have their increments withheld.

93. We are in favour of a regular system of comprehensive assessment of the teacher's work, including not only his class examination pass percentage but also his community relationships, moral influence on the children, efforts to build up the school, keenness to experiment with new teaching methods, and ability to make full use of local materials in his teaching work. As we have stated elsewhere, such assessments, to be useful, must be precise and complete, giving an accurate and continuous guide to the strength and weakness of the teacher.

94. We consider, also that teachers whose work is found unsatisfactory on the basis of such assessment should either have their annual increments withheld or promotion deferred, but that the good teachers should be given special increments and accelerated promotion and the opportunity of being sent abroad for further training and study of foreign teaching practices.

XI. Status :

95. We suggest that the work of good teachers should be recognized by special awards made annually on appropriate occasions by the President and the Governors of the provinces.

XII. Facilities and Equipment :

96. The creation of the diversified series of optional subjects, recommended by us in the section on the curriculum to achieve the objective of multi-purpose secondary schools, will demand additional resources for the schools in the way of class-rooms, science laboratories, workshops, garden plots, playgrounds, libraries, and equipment to be used in them.

Few of our schools are adequately supplied with any of these and great efforts on the part of the education authorities, the schools themselves, and the communities will be necessary for their improvement. We believe that our recommendations given elsewhere with regard to the financing of secondary schools will prove helpful in this regard.

97. A school should rightly be the centre of academic activity and social progress in a locality and an inspiration to young and old. It should be able to win the community's support and co-operate with it to serve its needs. In particular, it should be the duty of teachers to disseminate a knowledge of all development plants and other matters of national moment and explain their impact on local economic and social life.

98. Within the school, they should show initiative in solving educational problems and work as a team for its continuous improvement. In manual tasks, too, such as building boundary walls, doing repairs and laying out gardens, they should set a personal example to the pupils. This applies particularly to the use of local materials for equipment for science and industrial arts. Instead of waiting for ready-made equipment, teachers should improvise from whatever material is at hand. The UNESCO studies on the improvisation of scientific equipment can be used to good effect, and the educational authorities can give a lead in this respect. Particular attention should be paid to the rational design of school furniture so as to save wood and space.

99. The academic heart of the school should be its library, which should be specially stocked to meet educational requirements.

100. The provision of workshops and craftrooms for industrial arts and handwork, referred to earlier, need not be expensive if standard plans are worked out after the courses and schedules of equipment have been carefully planned. This will also permit the framing of teacher-training programmes based on advance knowledge of working conditions, as well as the compilation of suitably illustrated manuals. The provision of school gardens for agricultural and horticultural training should present no major difficulty.

XIII. The Functioning of the School :

101. We suggest that the academic session should be of 225 working days with a vacation of two months and two other recesses of ten and fourteen days respectively. Terminal examinations should be held immediately preceding vacations so that the teachers can mark the answer books during the holidays. The exact periods for summer, winter, and spring vacations may differ according to climate conditions, but the essential thing is that their total duration should not exceed eighty-six days during the year. On an average a pupil would work for seven periods a day of forty-five minutes duration for the XI and XII classes and forty minutes duration in the lower classes. There would thus be 1,400 periods of instruction for every student during the year.

102. The common habit of stopping serious instruction a few days before vacation and starting it a few days after the school resumes should be entirely discarded. It must continue to the very last period of the last day before the vacation and begin from the first period of the first day after the vacation. Surprise visits to schools should be paid by the inspecting authorities to see that this principle is observed.

103. The habit of abusing the principle of casual leave should be stopped. A total of not more than five days leave in a year for genuine emergency cases should be permitted.

104. Instruction is normally adapted to the average pupil, which means that the needs of specially gifted or below-average ones are not adequately catered for in class. Two special classes, for the separate groups, should be organized during the summer vacation, with methods and levels of instruction adapted to their requirements. The programme would give the pupils an opportunity of repairing their deficiencies during the summer vacation. These steps would thus ensure full utilization of the long vacation.

105. Teachers should ensure that their practices conform to their precepts; a contradiction between them saps the younger generation's faith in moral values and its loyalty to the nation.

106. Pupils should be given responsibility for managing their own affairs as far as possible. The running of games and tournaments, the hostel mess and annual functions, such as prize distributions, debates, and declamation contests, should all be run by the pupils under the teacher's guidance. They should have full freedom in expressing their views and assessing the success of their efforts.

107. A history of each school should be prepared, and brought up to date every year, describing the work of the founders, the difficulties with which they met in setting up the institution, and the way they overcame them, shining examples of self-sacrifice in the school's service, the achievements of old boys in study, sports, and life, and the work of the Headmaster and staff in consolidating the school and promoting its welfare. It would be an important aid in winning the confidence of the local community, strengthening the loyal support of the old boys and developing a civic sense among the pupils.

XIV. Guidance :

108. Just as the university student needs counsel and guidance in facing the problems of late adolescence, so does the secondary school child have his own difficulties of growth and adjustment which it is the teacher's duty to understand and help overcome. Guidance at these adolescent and pre-adolescent stages must be of two kinds: educational and vocational. The teacher must be capable of appreciating the intellectual, emotional, and social needs of his pupils and earn their confidence by his sympathetic and helpful approach. Human personality develops organically, and a change in any part affects the nature of the whole. Thus social and emotional disturbances in the life of a child react upon his powers of learning and intellectual progress, while difficulties in learning create emotional complications in their turn.

109. At this period of a child's life his social relationships are changing and widening year by year. New emotions are beginning to emerge, and very often the home, the neighbouring environment and even the school create tensions which he has difficulty in resolving. The school, for example, expects him to adjust himself to the discipline and dictates of school life after the less intensive years of primary education; but if the growth of his personality is to be smooth, the adjustment must

be mutual. The school must also be able to adapt itself to the child and deal with him in the light of his particular condition. In this way, adjustment and guidance will together contribute to the personal happiness and scholastic success of the child and make him a more balanced individual in tune with his environment and capable of making a useful contribution to society.

110. An appreciation of the special traits and interests of the child, based on an understanding of his social relationships and emotional make-up, will enable the teacher to assign him only such responsibilities as he can efficiently and usefully discharge and to provide guidance in the selection of courses to be followed. At a later stage, the guidance will also become vocational, based on the teacher's intimate knowledge of the child's character and aptitudes.

111. The proposed diversification of courses will give fuller scope to the child to satisfy his desires and requirements and greater opportunities to the teacher for advising him on his future career. To rationalize the task of vocation guidance, we suggest the appointment of a staff member at all secondary and vocational schools as a Careers Officer. This teacher should have a wide knowledge of career opportunities and the prospects offered by particular vocations as well as an intimate knowledge of courses of study available in preparation for these. He should be assisted in his work by annually revised careers handbooks to be issued by the Departments.

112. It is essential to place greater emphasis on the study of child psychology at teacher-training colleges so that teachers are equipped for their future tasks. In addition, refresher courses should be arranged for teachers in service so as to give them a better insight into the adolescent mind and development of personality. Specialized psychological services should be made available at selected areas, particularly in densely populated and industrial ones where the social pattern is undergoing rapid change and where emotional tensions and vocational possibilities have alike increased. Lastly, mental health services should be made available for maladjusted children.

XV. Organization :

113. In the past, as already stated, the universities have controlled the syllabuses, the conduct of examinations and affiliation of classes IX, X, XI, and XII, but the trend has been to transfer the control to the Boards of Secondary Education. However, the process of transferring control to Boards of Secondary Education is still very incomplete and some universities still control both Matriculation and Intermediate while others have transferred the Matriculation stage to the Boards of Secondary Education but look after the Intermediate stage. The only university that has transferred both stages is that of the Panjab.

114. We have stated that the secondary and higher secondary stages (Classes IX to XII) should be placed under the Boards of Secondary Education. One such Board already exercises that function—that at Lahore. The territorial jurisdiction of the Boards should follow the jurisdiction of the various universities in the country. New Boards should be set up at Peshawar, Hyderabad, and Rajshahi; and the jurisdiction of the Boards at Karachi and Dacca should be extended to include the Higher Secondary (Intermediate) stage.

115. Boards of Secondary Education should be entrusted with the responsibility for the regulation, control and development of education at this stage. Their functions would, therefore, be to recognise schools, lay down courses and syllabuses, determine academic policy, and conduct examinations.

116. The Board should be an autonomous body consisting of ten to twelve members including the Chairman, who should be a whole-time officer. It should include representatives from the university, Education Department, schools, and colleges, and one or two persons from public life devoted to the cause of education. Some members should be *ex officio* and others appointed by the Controlling Authority, as in the case of the universities, thus removing the necessity of elections. The Board should be its own executive, but it should have a separate Academic Committee to advise it.

117. We consider that the final authority in the Boards of Secondary Education should rest with the Controlling Authority who would occupy the same position as the Chancellor does in a university. The Controlling Authority might be the Governor of the Province and in the case of the Federal Area the Minister of Education.

118. The Chairman of the Board should be the principal executive officer, to be appointed by the Controlling Authority on such terms and conditions as the latter may determine. He should be a person of high attainments and status and also have capacity to give leadership in the academic field.

119. There should be close and effective liaison between the Boards and the universities, which should be represented both on the Boards and on their academic committees. Similarly, the Chairmen of the Boards should be *ex officio* members of the executive and academic bodies of the universities.

120. An important function of the Board would be to grant affiliation to Secondary and Higher Secondary (Intermediate) schools. It is of the utmost importance that this power should be exercised with great care. Our educational standards have collapsed mainly because, during the last few years, affiliation to schools and colleges has been indulgently granted by the appropriate authorities either of their own accord or under pressure.

121. The Boards do not at present possess an agency for the inspection of schools and have to rely on the reports of the Education Department Inspectorate before granting affiliation. While we would favour the maintenance of the *status quo*, we would urge the Boards to refuse recognition wherever they are convinced that the recommendation is not justified. In the case of Intermediate colleges, the Boards grant recognition on the report of their own Inspection Committees and we would like the Boards to exercise due vigilance in this function.

122. The education of students from the IX to the XII Class is of critical importance and it is necessary that the schools at the Matriculation level should be encouraged to develop new ideas and techniques in their programme of work. The Boards should, therefore, give a few selected schools the opportunity to undertake new experiments in curriculum studies and recognise those for the purpose of examination. Such

an arrangement would keep the Boards in touch with educational experiments and improve their efficiency. We want our schools to establish a reputation in teaching and counselling which may extend beyond the provincial and national frontiers, and we are, therefore, anxious to secure for them opportunities for experiment both in teaching programmes and in other education work.

XVI. Finance :

123. Rising costs have in recent years affected every aspect of education, teachers, buildings, and equipment alike, and educational reform, if it is not to be accompanied by a further deterioration of standards, calls for additional expenditure under all these heads. A trained graduate whose monthly salary some thirty years ago was Rs. 45 to 60 now receives a minimum salary of Rs. 160 rising to Rs. 350; and this is no longer adequate. The cost of building, teaching materials, and equipment has gone up several times over. On the other hand, tuition fees have remained more or less the same, with the result that the gap between income and expenditure has steadily widened. Government has with difficulty been able to open a few new schools but it has had little to spare for grants to these schools.

124. The only way out of this difficulty has been for the schools to admit excessively large numbers of students and, neglecting the provisions relating to buildings, equipment, and the qualifications of teachers, Boards of Secondary Education (or the universities where it was their responsibility, have failed to enforce the rules of recognition, partly under pressure from Government and partly to win popularity with the public.

125. Since 1947, the position has very much worsened. In addition to the overcrowding of existing schools, new schools have sprung up most of which lack qualified staff or adequate facilities. This ill-considered expansion has lowered educational standards. The needs of existing schools have in consequence grown desperate. At the same time there has been a mushroom growth of schools run by local bodies many of them established in the full knowledge that the money to maintain them could not possibly be found. Some of these schools are without one trained graduate, and matriculation classes are being taught by people who have gone no further than Intermediate.

126. The major increase in enrolment has been in the urban schools. Their classes are crowded with as many as 60 to 70 students and proper teaching under such conditions is impossible. Malpractices of various kinds have also become common, such as charging unauthorised fees, holding tuition classes after school for extra payment, or paying teachers less than their contractual salaries. Moreover, many schools compel boys to buy 'notes' in addition to textbooks and an unduly large number of exercise-books as well, thus materially increasing the financial burden on the parents. In East Pakistan, new schools have been established so close to existing schools that both have become uneconomic units. As a result of these conditions the whole atmosphere of secondary education has been vitiated and the schools have been able neither to maintain academic standards, nor to provide a suitable moral atmosphere for the training of character.

127. The academic and moral training of pupils depends largely upon the pupil-teacher ratio. Individual attention to the needs of a pupil, and an understanding of his personal difficulties so as to be able to provide the necessary guidance, demand that the teacher be in charge of a manageable class. Advanced countries of the world have been attempting to reduce the pupil-teacher ratio and during the last few years the USSR has brought down its average pupil-teacher ratio from one to twenty-seven to nearly one to twenty-two. In contrast to this world trend, the ratio in Pakistan has been rising year by year.

128. There is no doubt that as a consequence of unplanned expansion without adequate funds the system of secondary education has virtually collapsed. Over-crowded classes, teachers without qualifications, inadequate materials, and unsatisfactory buildings—these are the things that characterize our present secondary education.

129. The cost of running a secondary school has risen at least three or four times during the last thirty years, while fees, grants and private donations have either remained the same, or been only slightly increased. The main way in which the schools have increased their revenue has been by admitting additional children, and by ignoring the regulation that when a class reached a maximum of forty (or forty-five, according to the area), it had to be split into two.

130. The deterioration in our secondary schools has several unhappy consequences, the chief of which is that the public have lost confidence in our system of secondary education and, where they have been able to afford it, have begun to patronise privately owned schools some of which are neither recognised nor supported by Government. All of these schools charge high fees, and, while many are run on sound educational lines and have long waiting lists, others can be best described as mere profit-making establishments. Many parents, particularly in the towns, engage private tutors and often have to make heavy sacrifices to do so.

131. A school must have adequate, qualified, properly paid staff who must not be driven to take up private tuition. To engage such teachers and provide other facilities the school must have funds, and the situation is, we believe, now one that cannot be met merely by increasing Government grants or by private philanthropy. At a time when rising costs affect the price of every commodity in the market, it is reasonable and inevitable that the consumer should have to pay a higher price for his children's education. We have seen only too clearly what happens when we try to provide education too cheaply. We, therefore, recommend that the present limits set on fees be revised so that our schools may have a reasonable income and provide efficient service.

132. There has been a steady and world-wide increase in costs during the last thirty years and we fear that this trend will continue. As the cost of living rises, teachers will expect and need higher scales of salaries. Since the teacher plays a pivotal role in our educational system and must be paid a reasonable salary if good people are to be attracted to the profession, we are anxious that their salaries keep pace with the cost of living. At the same time the cost of buildings and equipment are also likely to rise.

133. After very careful consideration we have concluded that the income of a school, in order to meet its necessary expenditure both now and in the future, should be raised from three sources (i) fees, (ii) contributions from the management, and (iii) a grant from Government. We are of the view that fees should provide 60%, management 20% and Government 20% of the recurring expenditure of secondary schools.

134. There are certain areas of the country which are economically or educationally backward where Government has provided free education up to certain levels either for the entire population or for some section of it. In these areas Government can either continue to allow these privileges, or it can achieve the same results by awarding scholarships to the groups concerned. The essential point is that the standards prescribed in the educational codes must be met. It is not enough to say that education shall be free without providing the facilities for a good educational programme.

135. Some say that managements cannot be expected to reach the 20% figure. On the other hand, we are frequently told that private schools are opened in response to public demand. It is, therefore, surprising that the school managements should not be able to obtain contributions from the communities for the upkeep of these schools. The conclusion is irresistible that many of these schools are opened by enterprising managements to seek political recognition or by teachers organizing themselves to earn a living. If they are to justify their continued existence, they must be required to give evidence in financial terms that they are in fact meeting a real demand.

136. As the resources of Government are limited, it will not be possible to assume the payment of a 20% grant as a matter of course, although one may hope that such assistance will be forthcoming. Where a Government grant is not awarded the contributions of managements and from fees will have to be higher. Neither do we wish to suggest that Government should award grants automatically. It will be necessary for Government to be satisfied about the programme of work undertaken by the school, the qualifications of its staff, its buildings and its equipment. We have stressed the need for diversification of courses and for particular stress on technical, commercial, and agricultural education. Government resources should not be spent on aiding schools which are inherently weak or which do not offer courses in the political subjects we consider to be of particular importance.

137. The formula suggested here will apply to schools which conform to the minimum standards prescribed in the educational codes. We are anxious that as many schools as possible should establish standards much higher than the minimum. More specifically we would like some schools to have a pupil-teacher ratio as low as one to twenty-five or thirty-five and to make extensive use of audio-visual aids. Such schools might be considered as "special schools" and their grants fixed on a different basis. Residential schools, the importance of which we have stressed, should also receive a special type of grant so that they may keep their fees at a reasonable level. Finally there may be some schools which do not want any grant. So long as these schools are operated on a sound educational basis and are not profit-making, they should find an honourable place in our educational system.

138. Non-Government schools occupy an extremely important position. In the past some of them have set the standard for other schools. Their headmasters and teachers have been men of eminence in their profession and their pupils have assumed positions of leadership in our national life. In order to restore the prestige of these schools it is necessary to insist on the fulfilment of the minimum standards prescribed in the Codes. Secondly, we believe that they should be administered by a small committee of management composed of persons with a reputation for integrity and for their devotion to the cause of education. The Chairman should be a man of distinction and should be given a small honorarium. We are confident that such a committee would bring the school and the community together and stimulate private philanthropy. In other countries managements such as this are able to collect substantial sums in small subscriptions from former pupils and others and the amount collected is rightly considered an index of the esteem in which the institution is held. As evidence of financial stability we suggest that the managements of private schools be asked to raise an endowment sufficient to provide an annual income of Rs. 15,000 to 20,000 or to give other evidence of their ability to maintain their schools according to the prescribed standards.

139. So far we have dealt with the question of maintenance costs. The costs of building, equipment, and apparatus are no less important. The major problem in constructing school buildings is the cost of land in the urban areas. In this connection we have two suggestions to make. The first is that when Government introduces legislation for new urban development, it should be made obligatory for the development authorities to provide land for schools with playgrounds and to construct the buildings, debiting the cost to the development charges. The second is that in existing areas the Corporations should draw up programmes for the construction of new school buildings from year to year and, if the funds are not available for their construction, levy a special tax for this purpose.

XVII. A Programme for Development :

140. We believe that these proposals will enable schools to maintain the minimum standard of efficiency. We must now consider what can be done to bring up to standard the large number of existing sub-standard schools and to develop some institutions of high quality. To do this we propose that vigorous measures, both long-term and short-term, should be initiated immediately.

141. The Boards of Secondary Education should rigidly enforce the rules for the recognition of schools. Surveys should be made to ascertain the number of trained staff required and to establish new training colleges as necessary. This should be regarded as a matter of high priority. As it will take some time to train the desired number of teachers, particularly in science, it will be necessary to organize "short-term courses" for the training of science teachers. Soon after the war many countries successfully organized this type of course to solve temporary shortages. We are assured that in this way we can improve the teaching of science and other subjects.

142. The total rehabilitation of our present secondary schools would require an enormous sum from Government, local bodies, and the community. It seems to be more realistic to set a fixed target for the full conversion of a proportion of them into high quality institutions. We

recommend, therefore, that the education authorities set as their goal the full development of one-half of the existing schools over the next five years.

143. When we speak of conversion or development in this context we have in mind a school with a fully qualified staff, a pupil-teacher ratio of one to thirty-five or one to forty at the outside, and adequate buildings, laboratories, workshops, libraries, and teaching aids. In addition, country schools should have playgrounds and agricultural plots. In the towns where playgrounds are not available, there should be well-equipped gymnasia. Wherever possible, they should have hostels. These schools would pay particular attention to developing technical, agricultural, commercial, and home economics courses.

144. We have stressed the pursuit of quality and leadership throughout this report and are suggesting a comprehensive scholarship scheme to discover and help talented students. So that those who are selected will have an opportunity to develop their talents fully, it is essential that there be enough good schools at which they can pursue their studies.

145. Government should take the lead in this matter and set an example with its own schools. It is important to ensure, however, that schools run by local bodies and privately managed schools pursue a rehabilitation programme simultaneously and that there is a fair geographical distribution of schools selected for improvement.

146. Specially we recommend that Commissioners and Deputy Commissioners|District Magistrates should select an adequate number of schools in each district, according to its population and resources, to be organized into high quality, multi-purpose schools. In large cities, such as Lahore, Peshawar, Hyderabad, Karachi, Rawalpindi, Multan, Lyallpur, Dacca, Rajshahi, Chittagong, and Khulna, there should be at least three such schools. At other district headquarters there may be one or two.

147. The management of these schools should be in the hands of a small Board composed of three to five members with the Commissioner or his nominee as Chairman in the case of schools at divisional headquarters and the Deputy Commissioner|District Magistrate or his nominee as Chairman in the case of other schools. The Headmaster should be an experienced educator with enough personality to carry through a programme of development. He should also have sufficient authority to handle effectively the internal administration of the school. We feel that with the financial arrangements suggested by us, the Commissioners and the Deputy Commissioners|District Magistrates should find little difficulty in raising the funds to establish such institutions.

148. At present approximately 15% of the students on the roll pay either half fees or none. These concessions should be maintained, but they should be awarded strictly on merit. In addition to this we have suggested elsewhere a substantial programme of scholarships to the extent of one crore and fifty lakhs a year. We would be happy if the Commissioners and Deputy Commissioners could encourage the setting up of private scholarship funds to augment further the amount available for scholarships.

149. Although the process of bringing income and expenditure into balance must lead to a rise in fees, these increases will be offset by the number of scholarships and concessions so that many children of the low-

income groups will be able to have full equality of opportunity with children of adequate means. Indeed, there will be several other economics. Private tuition will be eliminated, better quality text-books at low cost will be available and compulsory purchase of notes will be abolished. Similarly, the copybooks to be purchased by children should be standardized in number, size, paper and price and further economics effected here. Action on all these matters will produce relief to parents, while the children will have the advantages of a much better type of secondary school. We are convinced that an organized effort along these lines, with balanced budgets and quality education, will restore the status of our high schools, generate public support, and attract better qualified teachers.

150. *Residential Schools*.—The second form of action we recommend is the recognition of the value of residential-type schools through the improvement of existing ones and the establishment of new ones. When we speak of residential-type schools we have in mind not only schools where pupils are in full-time residence but also those which offer today pupils the kind of education and the intimate personal and community contacts that are characteristic of this type of education.

151. In a residential school where the child is under the supervision of his teacher practically twenty-four hours of the day, an ideal situation exists for the development of character and the organization of work on a rational basis. Guidance of the individual child can be personal and intimate. The organization of corporate activities and the development of a health competitive spirit can both take place in an ideal environment. The physical growth of the child, including his diet and health habits, is also open to close supervision. In short, all that the child thinks, feels, observes, and does are available for cultivation and development in way possible only in a residential institution. We attach the greatest importance to this form of secondary education and to its extension in Pakistan.

152. One particular virtue of these schools in our conditions is worthy of separate treatment. In our opinion they can serve ideally as vital centres for the cultivation of national sentiments, for fostering understanding between different parts of the country, and for cementing ties between those of differing backgrounds. By living and working together children at the pre-adolescent and adolescent stage not only form deep and lasting personal attachments but also play an important part in each other's mental and moral development. By sharing a common set of tasks and a common way of life they learn to shed the prejudices against people from other parts of the country which may persist in their homes and localities and come to value the merits of others.

153. Residential schools can thus play an important role in developing a national consciousness. For this fundamental reason residential schools, whether under the control of the military authorities or of the civil authorities, should be open to students from every part of the country. Each of these institutions should have enrolled in it students from both wings and, so far as possible, from all areas of both wings. Admission should basically be on merit, but this should be reconciled with geographical distribution, a certain number of places being reserved for each Wing and each area on a reciprocal basis. As the cost of education in residential institutions should be practically the same in all cases, education in a school far from home should not imply an additional burden on the parents of children so chosen, except for transport which, in the

case of those going from one Wing to the other, should be borne by Government.

154. West Pakistan was fortunate in inheriting a number of residential schools, and since Independence there have been significant additions. The former Punjab Government, at the initiative of the army, established a pre-cadet college at Hasan Abdal. This provides education of five years from Classes VIII to XII with a particular bias towards a career in the defence services. Nearly 33% of the seats are reserved for free students and 33% at half fees, based on a means test. The school is thus able to draw on the best talent from the poorer classes and it has been extremely successful. On the model of this institution, Government has recently established a residential school under a Board of Governors at Chittagong. Simultaneously, under the same stimulus, the Government of West Pakistan has started another institution at Pataro near Hyderabad. The basic feature of these institutions is that students live in conditions which are most suited to develop corporate life. They provide a very substantial number of free seats, and facilities are given for students to develop a bias towards a military career. The students are, however, free to go on to the university or to compete for admission to the defence services. The education they receive in these institutions is outstanding. We have visited the schools at Chittagong and Hasan Abdal and we have been much impressed. We are aware of the demand for more schools of this type and we recommend that East Pakistan should have at least one more such school, and that one more, possibly in the Peshawar or Quetta region, may be developed in West Pakistan. We should prefer these schools to be run through Boards of Governors on the Chittagong model, and we understand that the Government of West Pakistan is already considering converting their schools at Hasan Abdal and Pataro to this model.

155. It is a fact that residential schools have in the past been regarded as the preserve of the privileged few. This reputation can be broken down by making available scholarships in larger numbers to those who would not otherwise be able to attend. Finding places for these scholarship holders will, of course, entail extra expenditure for the school for building, equipment and staff. Government would, therefore, have to make grants to these schools based on the number admitted as scholarship holders.

156. In addition to the pre-cadet institutions mentioned in the preceding paragraphs, we recommend that Government should establish one more residential school in each wing immediately and plan a phased programme for the development of residential schools so that in due course every Division should be able to have one. The responsibility for developing institutions of this type should be given to the Commissioner who should take steps to raise money through private philanthropy.

157. In implementing our recommendations for better types of schools, we are assuming that the needs of the girls' schools will be kept in view and similar facilities provided for them.

158. *Commercially Operated Schools.*—These institutions are numerous in urban areas, such as Karachi, Dacca and Rawalpindi and we have catalogued their evils in several sections of this report. The fact that they are able to flourish even though they charge exorbitant fees demonstrates that parents are anxious to have their children educated and are willing to make sacrifices for this purpose. It is important that they do not often receive services and facilities commensurate with the

payment exacted. We do not quarrel with the thesis that good education must be paid for in some way, but no school should be allowed to degenerate into a business existing primarily for the profit of its proprietor. The recent trend toward chains of schools run by those whose sole motive is financial gain and self-aggrandizement cannot be too strongly depreciated. The operation of this type of institution must, therefore, be strictly regulated.

159. We recommend that every school be registered ; that it be required to provide adequate facilities in the way of teachers, buildings and equipment ; that it also be required to issue a printed prospectus and publish a statement of its income and expenditure. The fees charged should be regularized and approved by the appropriate educational authorities. Schools in the Karachi area are required to register, and penalties for non-compliance have been established. Legislation along similar lines should be enacted all over Pakistan and strictly enforced.

160. Before leaving this subject we wish to emphasize that we are not opposed to expansion, and our criticisms have been based on two considerations. First we are opposed to schools that are in reality merely shops with no standards, and secondly we are firmly against schools which are basically commercial enterprises. We would like to see the number of good schools grow and we fervently hope that parents and the communities will be willing to make the sacrifices required to provide good education in a programme of expansion.

161. *Education Extension Centres.*—The problems involved in converting present high schools into multi-purpose schools have already been the subject of careful study. With the assistance of the Ford Foundation, a group of Pakistani and foreign educators spent some time studying the educational needs at this level in our country as well as programmes currently being carried out in Europe and North America. On the basis of their advice the Government has established a major project in this field under which Education Extension Centres have been established in both wings to undertake the gradual conversion of a number of high schools in all the regions into multi-purpose schools, and to assist in the training of some of the specialized staff needed for these schools.

162. We consider that these Extension Centres have a most important role to play in the programme of reform we are proposing. In the chapter on Higher Education we have suggested that the Central Government should itself run summer courses for the training of university staff along similar lines. We consider the work of these Extension Centres of such vital importance that we suggest an active co-operation between the Central Government and the Provincial in their operation. As those Centres are intended to strengthen quality in education and foster a basic reorientation of educational programmes, their activities are of mutual concern to both levels of government.

163. *Community Relations.*—No hierarchy of officials can itself give the schools the spirit and quality needed. The attainment of such aims requires the combined efforts of administrations, headquarters, teachers and the community. All efforts should be made to awaken the pride of the local communities in their schools by participation in school activities, attendance at school ceremonies, and the development of parent-teacher associations on a wide scale.

SECONDARY EDUCATION

SUMMARY OF RECOMMENDATIONS

II. Objectives of Secondary Education :

1. Secondary education should be recognised as a complete stage in itself and organised as a separate academic and administrative unit, demarcated clearly in all respects from University education. (8).

2. Secondary education should bring about the full development of the child (a) as an individual, (b) as a citizen, (c) as a worker, and (d) as a patriot to enable him to understand and enjoy the benefits of social progress, scientific discovery and invention, and to participate in economically useful activities. (9, 15).

III. Duration of Secondary Education and its stages :

1. Secondary education should properly consist of classes IX to XII, but until compulsory education is extended to the first eight years, classes VI to VIII should be considered a part of secondary education. It will, therefore, for the present be divided into three stages : Classes VI to VIII (Middle), IX and X (Secondary) and XI and XII (Higher Secondary). (22, 23).

IV. Curriculum :

1. The curriculum at the secondary stage must be based on two principles. First, it must provide a compulsory core of subjects to give every pupil the knowledge he needs to live a useful and happy life in a fast developing society. Secondly, it should include additional subjects and training to prepare him for a definite vocation and career. (32).

2. Subjects should be allotted varying degrees of importance in respect of teaching time and should be introduced and terminated at different levels in different years. Every child should acquire a preliminary understanding of some 10 to 12 subjects by the time he has completed high school. (34, 36).

3. (a) The teaching of the national language, science and mathematics should receive considerably greater emphasis. English should be taught as a functional subject rather than as literature. (41, 51, 52, 53).

(b) Religious education should be compulsory in classes VI to VIII and optional thereafter. (56).

(c) The use of hand tools should be made compulsory in Classes VI to VIII. (45).

4. Practical Arts courses should be introduced into secondary schools. These should include metalwork, woodwork, agricultural gardens, typewriting, home economics (for girls), and courses in the artistic and ornamental crafts.

5. Within ten years, as far as possible secondary schools should be transformed into multi-purpose schools offering a wide choice of diversified courses. (33, 46, 47).

V. Evaluation and Examination:

1. The system of examinations should be reorganized and the award of certificates based on the performance of the student in (a) the public examination conducted by the Universities/Boards of Secondary Education (75% of the total marks) and (b) his school record, including the results of periodic tests and an appraisal of habits and general behaviour 25%. (63, 64).

2. The results of the periodic tests in the schools should be recorded by the teachers on the notice board as well as in the pupils' progress reports. (62, 64).

VI. External examinations:

1. For candidates who do not attend a regular course in recognised institutions separate examinations, called external examinations, should be held. (59).

2. The general pattern of syllabuses for the external examinations in respect of core subjects and electives should be the same as for regular students. (71).

EXAMINATION IN CLASSICAL AND PAKISTANI LANGUAGES

1. Syllabuses for these examinations should be revised to bring them into line with present requirements. (75).

2. The higher examination should be taken only after the candidate has passed the lower examination. This will ensure both educational maturity through study over a long period and the discipline of character from sustained effort. (75).

VII. The Teachers:

1. The teachers must be properly trained before entering service; their knowledge and professional skill must be periodically refreshed; they must receive a salary which will enable them to maintain a reasonable standard of living, and so preserve their self-esteem; they should feel that they belong to a profession with regular chances for promotion and should be willing to shape their conduct according to its demands. (77).

2. Teachers provide direct service to the students, and parents who pay for this service have a right to demand that it be efficient. Conversely, a teacher has a right to demand that he should be paid an adequate salary so that he is not obliged to undertake private tuition and is able to give his undivided attention to the work of the school. Salary scales of teachers should, therefore, be related to the nature of the service offered to the students and society, they should not be associated with those of the other services, and they should be substantially raised (86, 89, 91).

3. The qualifications and pay scales of teachers of classical and Pakistani languages should be the same as those of teachers of other subjects. (88).

4. The provision of properly qualified teachers is of paramount importance, and the rules of recognition of schools in this regard should be rigidly enforced. (81).

5. Teachers of classes VI to X should work for 225 full working days during the year, excluding Sundays, public holidays, vacations, and examinations, and they should put in about 1,600 hours distributed as follows :—

Teaching Tutorials Guidance Preparation of lessons correction work :

800	200	100	300	200	(91, 101).
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6. There should be a comprehensive assessment of the teacher's work including his keenness to experiment with new teaching methods, his class examination results, his moral influence, his community relationships, and the efforts to build up the school. On the basis of such assessment good teachers should be given special increments or accelerated promotion, and those whose work is found unsatisfactory should have their annual increments withheld or promotion stopped. (93, 94).

7. The work of good teachers should be recognized by special awards made annually on appropriate occasions by the President and the Governors of the Provinces. (95).

XII. Facilities and equipment :

1. All efforts should be made by the educational authorities, the schools, and the communities to provide facilities like class-rooms, science laboratories, workshops, libraries, garden plots, playgrounds, and equipment, in order to achieve the objective of multi-purpose secondary schools which will provide diversified optional subjects. (96).

2. The teacher can win the support and co-operation of the community in providing these facilities by bringing the school closer to the life of the community and by making it a centre of social progress in the locality. (97).

3. The teachers and students can also help in improving facilities in the school by building boundary walls, doing repairs, and laying out gardens. The teacher should set a personal example in undertaking such work.

XIII Functioning of the school :

1. The academic session should be of 40 weeks with a summer vacation of two months, a winter recess of 10 days, and a spring recess of 14 days. Students should have about 1,400 periods of instruction every year. (101).

2. All types of interruption during the academic session should be eliminated, and teachers should not be permitted more than five days' casual leave in a year, which should be granted in emergency cases. (103).

XIV Guidance :

1. The teacher should have intimate knowledge of the child's character and be able to give him educational and vocational guidance. Careers Officers should be appointed in secondary and vocational schools to assist the teachers in carrying out this task. (108, 110, 111).

XV. Organisation of Secondary Education :

1. The regulation, control and development of education at the secondary and higher secondary stages (classes IX to XII) should be entrusted to the Boards of Secondary Education. The territorial jurisdiction of the boards should follow the jurisdiction of the various universities in the country. New boards should be set up at Peshawar, Hyderabad, and Rajshahi, and the jurisdiction of the boards at Karachi and Dacca should be extended to include the higher secondary (Intermediate) stages. (114, 115).

2. (a) The final authority in the Boards of Secondary Education should vest in the controlling authority, who should be the Governor of the Province, and in the case of the federal area, the Minister of Education. (117).
- (b) The Board should be an autonomous body consisting of 10 to 12 members including the Chairman, who should be a whole-time officer appointed by the controlling authority. It should include representatives from the university, the Education Department, schools, and colleges, and one or two persons from public life devoted to the cause of education. (116, 118).
- (c) There should be an Academic Committee to advise the Board on academic matters. (116).

XVI. Finance :

1. The cost of running a secondary school has risen 3 to 4 times during the last 30 years while fees, grants, and private donations have remained practically the same. The result has been that the gap between income and expenditure has steadily widened. A large number of new schools have sprung up under pressure without qualified staff or adequate facilities. Inadequate financial resources and ill-considered expansion have lowered educational standards and led to malpractices of various types (123, 125, 126, 129).

2. As the cost of living rises, teachers will expect and need higher scales of salaries, and we must ensure that a school has funds sufficient to meet its expenses both now and in the future. (131, 133).

3. The income of a school should be raised from three sources, (i) fees, (ii) the contribution of the management, and (iii) the grant from Government. The appropriate proportions would be approximately 60% from fees, 20% from the management and 20% from Government. (134).

4. The Government grant of 20% should be paid only if a school fulfils the minimum requirements in respect of staff, buildings, and equipment, and offers diversified courses. (136).

5. Schools maintaining better standards in equipment and staff should be regarded "special schools" and their grants fixed accordingly. (137).

6. Residential schools should be given financial support to enable them to reduce their fees. They should be treated as 'special schools' for the purpose of grants. (137).

7. Non-Government schools occupy an important position in the educational system, and they must be enabled to assume their position of leadership. Their management should be in the hands of persons who can bring the school and community together and stimulate private philanthropy. They should raise an endowment sufficient to provide an annual income of Rs. 15,000 to 20,000 or give other evidence of their ability to maintain the schools according to the prescribed standards. (138).

8. Apart from expenditure on maintenance, schools also require funds for buildings and land. Government should undertake legislation making it obligatory for development authorities to reserve necessary land for schools and to construct buildings, with the cost debited to development charges. As regards the congested areas the appropriate authorities should renovate schools buildings or set up new ones by levying a special tax, if necessary, for this purpose. (139).

XVII. A Programme for Development :

1. It is necessary to bring the large number of existing substandard schools up to a proper standard and also to develop some institutions of high quality. To do this, vigorous measures, both long-term and short-term, should be initiated immediately :

- (i) Surveys should be made to ascertain the number of trained staff required and to establish new training colleges to meet the shortage.
- (ii) "Short-term" courses for the training of science teachers should be organized. (141).

2. The rehabilitation of secondary schools will require enormous funds. The Education authorities should, therefore, set the immediate target for developing one-half of the existing schools. Government should take the lead in the matter at once, and should start rehabilitating its own schools. Simultaneously, local bodies and private effort should undertake a programme of rehabilitation.

3. Some of the schools should be developed into schools of better quality. Commissioners and Deputy Commissioners should select an adequate number of schools in each District, according to its population and resources, which might be organised into high quality multi-purpose schools. The management of each of these schools should be in the hands of a small Board composed of 3 to 5 persons with the Commissioner or the Deputy Commissioner or his nominee as Chairman. (146, 147).

4. Talented but poor students should receive scholarships of substantial amount. (148).

5. In areas where free education has already been provided up to certain levels Government can either continue these concessions or sanction special scholarships for these areas. (134).

Residential Schools :

1. The value of schools of the residential type should be recognised and every encouragement given to their development. They should be open to students from every part of the country and efforts should be made to bring students from all regions into each of these institutions. In the immediate future, a residential school of the Pre-Cadet type should be established in each wing. (150, 151, 152, 153).

2. A phased programme for the development of residential schools should be drawn up so that in due course every Division has at least one residential school. To make a start, one more residential school should be started in each wing immediately. (154, 156).

Commercially Operated Schools :

Schools should not be allowed to degenerate into business concerns existing solely for the profit of their proprietors. Every school should be registered and provide adequate facilities in respect of teachers, buildings, and equipment. It should publish its prospectus and a statement of its income and expenditure. The fees charged should be regulated and approved by the education authorities. Legislation for the registration of private schools should be enacted all over Pakistan. (158, 159).

Education Extension Centres :

Education extension centres have been established in both wings to improve the quality of education and foster a basic reorientation of educational programmes and also to assist in the training of specialised staff needed for the gradual conversion of a number of high schools into multi-purpose schools. The work of these centres is of national importance and should be undertaken jointly by the Central and Provincial Governments.

CHAPTER 4

TECHNICAL AND VOCATIONAL EDUCATION**I. Introduction :**

1. We have elsewhere identified a number of basic weaknesses in our present education system. We have seen that our elementary and secondary education are predominantly bookish in content and provide little training in the practical arts and little diversification of courses. We have stated that our professional education—and particularly engineering—has been for historical reasons too often content with producing technicians rather than professionals in the creative sense of the word. We have emphasized the need to strengthen our education at all levels in the teaching of science and the applied arts. In this chapter we shall be concerned to show how this can be given concrete form at institutions below the degree-granting level.

2. Technical education is at the moment receiving great emphasis in all countries and it is proper that we should profit from experience elsewhere. We must fully develop the skills of our manpower if we are to achieve national self-sufficiency and materially raise our standards of living. In addition we must reverse the national aversion to the use of the hands, develop in our people a sense of the dignity of manual work and a pride in technical achievement. We must develop our manpower skills at all levels if national progress, self-sufficiency, and welfare are to be achieved.

3. In societies where full industrialization was achieved more than a generation ago, children grow up with a familiarity with machinery and learn in their everyday life some of the skills and knowledge necessary for its maintenance and operation. No such situation exists in Pakistan and a doubly heavy responsibility is, therefore, placed on the educational system. To develop and maintain an industrial community, a whole range of skills is necessary in an ascending order of complexity. This should begin with widespread knowledge of simple mechanical tasks of daily life, such as the ability to replace a blown fuse or to repair a bicycle, and extend through the skills of the trained operator, the artisan and the technician, up to the skills shown in creative design by the engineer or the executive of a public or private enterprise.

4. From the educational point of view we can classify this range of skills into four categories. At the lowest level are the so-called unskilled workers in industry who require manual dexterity for the performance of their duties. Our next category would be the trained operator in factory and office whose skills in industrial and commercial processes produce consumer goods or commercial services. The third category is made up of technicians who generally constitute the supervisory personnel in industry or office, whose practical skill enables them to appreciate the problems of the skilled worker at his machine and whose theoretical training enables them to understand the ideas of the engineer or executive and to interpret them to the skilled worker. At the top of the pyramid is the fourth category: the creative engineer and executive, capable of developing new techniques, methods and designs, sensitive to needs and local conditions but well versed in world knowledge and experience.

5. Our education system must be designed to produce all four categories. The unskilled worker will, by and large, come from the elementary stage of schooling. The engineer and executive will be trained in professional colleges. It is the education of the skilled operator and technician which has been most neglected in our school system. These will be recruited mainly from those who continue in school up to the matriculation level but without entering a university, or who continue their schooling in some other form, or follow part-time study or apprenticeship courses.

6. To achieve an adequate training programme for these categories of workers we must make some radical innovations in our school programme. In the first place we must make handwork and practical activities compulsory in the school course at the primary and secondary levels. Secondly, we must diversify the school curriculum by enriching it with a series of optional practical courses in technical, agricultural, commercial, and home economics subjects. Recommendations in regard to these steps will be found in the chapters on Primary and Secondary Education. Finally, a system of separate technical and vocational schools must be provided to which children with the necessary aptitudes and interests can be diverted at various levels.

7. Our first stage of diversification will be after Class VIII. The duration of the course in vocational schools at this stage will vary from two to three years and will include 50% general education and 50% craft and trade instruction. The aim will be to prepare pupils either to enter industry as partially trained employees or to enable them to take up apprenticeship courses to perfect their skills.

8. The second major diversification we propose should be possible after Class X where provision for the specialized training of the skilled technician should be made. We have too often in the past misused our engineers by compelling them to carry out tasks which could be entrusted to a supervisor, or, in reverse of this, have entrusted such supervisory work to artisans or mechanics. The first is a wasteful use of professional graduates, the second an unproductive allocation of personnel. The situation has arisen from a misconception of the role of the different categories of workers in a technology and from a lack of facilities for training the supervisory staff. The latter deficiency has been partly rectified by the opening of the polytechnics at Dacca, Karachi, and Rawalpindi, but we must make fuller provision for vocational training in day or evening courses in a wide range of trade, technical, and commercial subjects at this level. It is at this level that not only the education authorities but also private industry and commercial enterprises have a responsibility to the community.

9. Our last stage of diversification will be after Class XII, when students will be qualified to enter a range of professional colleges and university courses for higher studies.

10. In addition to these provisions for full-time technical and vocational training and for the courses in practical manual skills in our primary, middle, and general secondary schools, we must also provide a wide range of training possibilities in the form of apprenticeship courses for those wishing to perfect their skills or learn a new trade. We believe that the introduction and expansion of this full range of

21. Fortunately, there is an awareness of the need for the development of technical education, and plans are afoot for the establishment of a number of technical institutions in both provinces. Once all such institutions are brought under unified control, it will be possible to operate an effective programme of vocational and technical education.

22. The courses offered at existing institutions are restricted in range and scope and it is necessary to add new courses to meet modern requirements. We propose that additional diploma and certificate courses in the following fields be provided for :—

- (a) Instrument making and repair.
- (b) Watch and clock repair.
- (c) Radio maintenance and repair.
- (d) Refrigerator maintenance and repair.
- (e) Jig and tool-making.
- (f) Typewriter mechanics' work.
- (g) Boiler-makers' work.
- (h) Plumbing and pipe fitting.
- (i) Coachbuilding.
- (j) Motor-body building.
- (k) Electrical installations.
- (l) Furniture and cabinet-making.
- (m) Industrial design and Commercial Art.
- (n) Gas technology and supply.
- (o) Paper technology.
- (p) Boatbuilding and small craft design.
- (q) Leather technology.
- (r) Glass and ceramics technology, including technology of scientific glassware.
- (s) Food technology, including catering and canteen management.
- (t) Printing trades technology.
- (u) Building trades technology (masonry and brickwork, slating and tiling, concrete construction including formwork and shuttering).
- (v) X-Ray Technician's work.
- (w) Ore dressing and mineralogy.
- (x) Musical instrument construction.
- (y) Agricultural science and animal husbandry.

The specialities listed above are in addition to the courses which are already being offered at the polytechnics. In developing these courses

attention should be directed to the use of locally available materials and to design methods which will emphasise economy in the use of necessary imported raw materials.

23. In some instances Technical Institutes have been developed to meet the requirements of specific trades such as textiles, leather, ceramics etc., and are known as monotchnics. We consider that this provision is a wise one and we suggest similar institutions to train for the following trades :—

- (a) Printing and the graphic arts.
- (b) Furniture trades to promote the use of plywood and machine construction methods.
- (c) The building trades to include experimentation with local materials.
- (d) Navigation, including coastal navigation and principles of small craft construction and marine engine maintenance and repair.

24. Courses in industrial relations and management and allied studies are already emphasized in the polytechnic diploma courses and should be incorporated at an appropriate level in all technical institutions. Costing and budget control, business economics, industrial relations and psychology, factory organization and management, foremanship studies, methods of training within industry, and similar courses should be offered as an integral part of all diploma studies. They should also be available to management, which should be encouraged to regard these institutions as centres, not only for training technical personnel, but also for assisting managerial and professional staff to become more efficient.

25. At present Supervisors' Certificates are issued on completion of Institute courses and before any experience of industry has been gained. We do not think that this arrangement is satisfactory for the industrial managements are bound to regard such certificate holders as theorists without practical knowledge. We feel that a Supervisor's Certificate should only be awarded to a person who satisfies the following conditions :—

- (a) Successful completion of a technician's Diploma Course at a polytechnic or technical institute.
- (b) Two years' subsequent experience in an industrial workshop.
- (c) A post-diploma course [full-time, part-time or evening in industrial relations, industrial psychology and Training-within-Industry (TWI) methods].

26. Provision has been made in West Pakistan for a course in architectural draughtsmanship. We suggest that a similar provision should be made to suit the requirements of East Pakistan. Other courses in industrial design have been developed in West Pakistan and are proving successful, and we recommend that similar provision should be made in East Pakistan.

27. During the short time at our disposal we have not been able to assess precisely the requirements for technical personnel. We are recommending in a later portion of this Chapter the appointment of a

Committee which would periodically assess the requirements of manpower to enable appropriate authorities to determine their educational programme on a realistic basis. However, with the information available and in the light of our visits to technical institutes and discussions with the appropriate authorities, we have come to the conclusion that arrangements should be made immediately for the production of 7,000 technicians of various types every year. In order to improve productivity in the fields of agriculture, industry, and commerce the country requires an ever increasing number of trained personnel. Our existing engineering colleges are producing approximately 500 engineers a year and we would need to step up this programme appreciably during the next five years. It is extremely important that the production of engineers should be accompanied by a corresponding production of an intermediary stage of supervisors and technicians. With the tremendous advance in science, the Defence services also depend increasingly on the supply of trained personnel. We have seen a number of technical institutes run by them and have been much impressed by their efficiency. We are convinced that if the Defence services and their auxiliary services have to be maintained efficiently, the educational system must be geared to provide a much larger output of technical personnel. Similarly, the needs of the trade, industry and other services of Government such as communications, transport, etc., require an ever-increasing technically-trained manpower. We should aim at a ratio of about ten technicians to one engineer in our training programme so that the existing shortage of technicians is gradually made up. In the USA, Britain and the USSR a ratio of one to five is considered desirable. However, keeping in view the fact that Pakistan is at the initial stage of industrialization and that the teachers and equipment are not readily available, we have kept the limit of 7,000 in the confident hope that the pace will be appreciably quickened in subsequent years. To give effect to this, arrangements must be made to expand the existing facilities at the Karachi, Dacca, and Rawalpindi polytechnics, to strengthen the existing technical institutes and monotronics and to establish new institutes. It will be necessary to draw up a phased programme of work over the next five years.

IV. Evening and Part-time Classes :

28. Evening and part-time courses are particularly suited to the requirements of vocational education and we recommend that all polytechnics, technical and other institutions should offer such courses as a regular feature of their programmes. Such courses would bring existing and proposed facilities within the range of a much greater public without adding to the capital costs incurred in developing the institutions. Moreover, industry would itself show great interest in the institutions at which its employees are receiving further training, and we hope that this interest might manifest itself in endowments, scholarships and prizes for successful work.

29. It would be necessary to recruit additional staff to deal with the increased workload, but, as far as possible, evening and part-time classes should be run on a self-supporting basis. The range of courses should be extended to meet the special requirements of local industry, and highly skilled personnel should be recruited for evening and part-time instruction from local industrial undertakings.

30. Special attention should be given to the problem of the small employer in organising such courses. These "extensions" programmes must, therefore, offer short courses in skills and techniques devised for the benefit of 'mistris' employed by the small-owner, and also courses suited to the business needs of the small proprietor in management, business accounting, materials, etc., so that his methods of doing business may be improved. The idea of improving the small business by getting the proprietor to attend classes may take some time to 'catch on', but it is one which we must promote and foster.

31. At the end of evening and part-time courses certificates of attendance should be issued to all who have attended the full course of studies. These certificates should list the subjects taken, the hours of attendance at classes and an objective assessment of the standard of proficiency reached.

V. Management, Industry and Apprentice Training :

32. Training given on the job or in apprenticeship schemes accounts for a large part of technical training in advanced countries. The highly specialised and costly tools and machines available today for industrial processes and techniques require careful handling and maintenance if they are to stay in use. Those who operate them must know when things are going wrong and when it is more profitable to stop for repairs than carry on and risk permanent damage to expensive equipment. It is essential to provide systematic training for operatives who can keep machines running, and for mechanics and skilled workers who can put them right when they go wrong. This, however, is primarily a function of industry, whose cardinal responsibility it is to pay for the training of its own employees in the interest of efficiency. Any industrial undertaking which underwrites a planned and purposeful training scheme for its employees will more than offset the costs in terms of better labour relations, and lower overhead costs. Breakdowns will be less frequent, machines and equipment will have longer lives, and useful suggestions for improvements will always be forthcoming from intelligently trained operates.

33. There has been very little awareness on the part of private employers of the need for such training schemes. Government has a vital interest in seeing that manpower is trained to the highest possible level in craft skills and in machine processes so that cost of production may be reduced and the standards of living of the people improved. It must, therefore, insist that all industrial undertakings provide their own training schemes in their own works.

34. Government is itself a large employer of industrial manpower and has either direct or indirect financial control over a number of industrial undertakings. It must, therefore, set an example to industry by adopting properly conceived training and apprenticeship schemes for these undertakings. In future development schemes, government should insist upon the establishment of model factories using up-to-date production methods in well-planned workshops. All training and apprenticeship schemes should be approved by the appropriate authorities to ensure that conditions of employment and the educational content of the courses are satisfactory.

35. Large-scale industry should be encouraged to draw up its own training schemes for approval by the appropriate authorities. A scheme should be approved only if the buildings, equipment, and staffing provided for training conform to proper standards.

36. Small-scale industries will, in general, be unable to operate their own apprenticeship schemes except on a group or co-operative basis. As this seems unlikely at present it will be necessary to establish apprentice training centres in appropriate areas. These centres should devote about 25% of the training time to general education, biassed, where possible, towards practical instruction. Where there is insufficient demand for a local Centre, consideration should be given to the provision of mobile workshop vans which can stop in localities for short periods to train local personnel. In other cases it may be found advisable to give the necessary training in evening or vacation courses in existing technical institutes, polytechnics and schools equipped with workshops.

37. Little difficulty should be experienced in securing adequate data on the training requirements of large-scale industry. Small-scale industry presents a more difficult problem. We suggest that the following steps be taken to bring small-scale industry up to modern requirements and to secure the necessary data on training needs :—

- (a) A Central Manpower Committee should be established to deal with (b), (c) and (d) below, to collect data and pass information on to interested parties. This Manpower Committee should be fully representative of East and West Pakistan and of the Central Government and should be a permanent body with its own staff. Several Departments as well as the Defence Services will have a vital interest in the work of this Committee and should be consulted as to its composition and powers.
- (b) The Factory Acts should be enforced and revised, where necessary to ensure proper conditions for the conducting of on the job' training schemes.
- (c) The terms of the Essential Personnel Ordinance should be enforced so as to make available up-to-date statistics on the numbers and categories of skilled and semi-skilled workers in industry in all areas. This will enable an assessment to be made of apprentice trainee requirements.
- (d) Surveys of small-scale industry should be undertaken on the lines of the technical survey of the slow-speed diesel engine industry made in Lahore by Western in 1958, to provide data for co-ordination of industrial effort and for the drawing up of training programmes.

38. It is axiomatic that 'know-how' improves productivity, and it is, therefore, necessary for government to ensure the availability of polytechnics, technical institutes, and training centres, to supplement on-the-job training. It is only reasonable to expect that the costs involved in using these institutions for such training should be borne substantially by industry. Where firms conduct their own training schemes with the approval of the appropriate authorities, the full cost of such training, including capital cost, spread over a sufficiently long period, should be accounted as costs of production. Similarly, the contribution made by industry direct to government for the organization of technical institutions should be treated as capital costs of production. Moreover, government contracts should be awarded only to those firms which employ a proper proportion of engineers, technicians, skilled workers, operatives, and apprentices, with provision in the contract to ensure that there is no violation by sub-contractors.

VI. The Control of Technical Education :

39. Technical education is in its infancy in our country. It has never been considered part of the education programme and it has been run by different departments of government to meet the requirements for trained personnel in their specific fields. This position needs to be corrected immediately. Technical Education is well recognized to be an educational process and forms an integral part of education systems elsewhere. Indeed, no reform is possible without making it an integral feature of our own system. The time has come to co-ordinate the whole effort in technical education, to direct it along well-defined channels and to rid ourselves of a multiplicity of agencies.

40. This matter has engaged the careful consideration of numerous expert committees. To give Technical Education its due place, the Pakistan Council of Technical Education recommended the establishment of a Directorate of Technical Education as an integral part of the Education Department in each province, and this recommendation has been endorsed by the Advisory Board of Education. More recently, the Planning Board made a similar recommendation, and a number of expert committees have reaffirmed this view. In pursuance of this recommendation the government of West Pakistan has already established a Directorate of Technical Education, and the Government of East Pakistan is contemplating the establishment of one in the immediate future. We attach great importance to this reform and wish to stress the fact that the Director of Technical Education should be of the same status as the Director of Public Instruction, and that he should have adequate staff, with requisite qualifications to administer this programme efficiently. We recommend that all technical institutions other than those administered by the universities should be transferred to the unified control of the Directorate of Technical Education.

41. Likewise, the Ministry of Education should have a strong section with the requisite specialised staff to direct the programme of technical and vocational education on sound lines. The section should be headed by an officer, with a higher status than that of the Directors of Technical Education in the provinces. He must be a person of high academic qualifications, broad vision and suited to give leadership in this important field. This section should have appropriate complementary staff so as to co-ordinate the work of technical education at three district levels :

- (i) Engineering Colleges and post-graduate research ;
- (ii) Polytechnics ;
- (iii) Diversification of courses at the school level.

42. A Council for Technical Education should be established with branches in each province, consisting of educationists and representatives of industry, agriculture, commerce, of the Armed Forces, Technical Institutes, and professional bodies. The Council would act in an advisory capacity to Government, in order to—

- (a) co-ordinate efforts in the field of technical education ;
- (b) collect information on the requirements of industry and commerce, Government Departments and the Defence Services for personnel requiring education and training in engineering and technical institutions ;

- (c) improve academic and technical standards by drawing up syllabuses of instruction and unifying examination requirements ;
- (d) make the requirements of industry, science, and technology known to the Education Departments ;
- (e) bring advice and guidance of experts in industry and commerce to the Education Departments.

43. The representative of the Ministry of Industries and the Directors of Industries will occupy important positions in the Council of Technical Education and its branches, particularly on the Manpower Committee. It would be the responsibility of such sub-committees to assess the requirements of trained personnel and to advise the appropriate education authorities on the organization of courses in technical institutions.

VII. Vocational Guidance :

44. Children leaving school, particularly if their parents are poor and there is consequent economic pressure to enter employment quickly, often enter jobs unsuited to their abilities, aptitudes, and interests. This leads not only to personal frustration but to lowered efficiency and manpower wastage. One way to avoid this and to place young persons in more suitable employment is by the use of the techniques of vocational guidance. It seems to us that the introduction of such provisions is a necessary corollary to the full utilization of the programme of technical and vocational education we are proposing. It would complement the suggestions for educational guidance we have made in the chapter on Secondary Education and elsewhere and ensure that a pupil was guided into the educational course which best suited his talents and interests and later into the job which most appropriately fitted his training. We feel strongly that such a scheme should grow with the diversified form of education we are recommending.

45. We believe, therefore, that the Ministry of Education at the Centre and the Directorates of Technical Education in the provinces should immediately appoint a Vocational Guidance Officer whose responsibility it would be to maintain close contacts with industry, commerce, and the schools so that he is fully informed about employment opportunities, the prospects they offer and the facilities available for further education which may lead a willing pupil to success in his chosen vocation. These officers should be trained educators, familiar with the problems of the adolescent, and should be sympathetic, understanding, and confident in their dealings with young people.

46. The Ministry of Education, in co-operation with the Directorate of Technical Education and in close consultation with the industry, the professional organizations, and Government Departments, should prepare *Handbooks of Careers* listing the main avenues to progressive employment, with full details of salaries and wages to be expected, prospects of promotion and facilities for further studies on a full-time, part-time, or evening basis. These manuals should be made as exhaustive as possible, and should be re-issued yearly with up-to-date amendments during the first five years, so as to ensure proper revision in the early stages. Copies should be available in every school and in every community.

47. A member of the staff of every school giving craft and practical instruction should be appointed "careers master". He should be thoroughly familiar with the back ground and family history of his pupils and their special aptitudes and be given special facilities to visit local employers and industrialists in order to gain first-hand experience of working conditions, prospects and remuneration. The Departmental Vocational Guidance Officer should arrange special courses for career masters in their probationary period and should be responsible for certifying their efficiency.

VIII. Examinations in Technical Subjects :

48. The lack of unified control of institutions providing technical and vocational education and training has been responsible for the wide differences in practice and values attached to the certificates and diplomas issued to students completing the courses. We believe that this should be rectified at the earliest possible moment. In view of the different requirements of East and West Pakistan a single examining body will scarcely be adequate. We therefore, suggest that Boards of Technical Examinations should be set up by the appropriate administrative authorities in East and West Pakistan and the Capital and that the Ministry of Education should prescribe the procedure for the co-ordination of work between the various Boards. These examining bodies should maintain very close contact with industry and should set up panels in engineering, textiles, agriculture, building, leather, ceramics, typography, furniture, radio, and electronics.

IX. Training Programmes for Technical Teachers :

49. The success of schemes of technical education and training will depend to a very great extent upon the quality of the staff employed to give the necessary instruction. At the present time we have no institutions which impart training in methods and instructional techniques to those teachers giving technical instruction in our schools and institutes. Our first task will be, therefore, to develop training courses for the following categories of teachers and instructors :—

- (a) Teachers of handicrafts for Classes VI—VIII.
- (b) Technical instructors for vocational schools.
- (c) Technical teachers for secondary schools (Class IX and upwards).
- (d) Technical instructors for polytechnics and technical institutions.
- (e) Apprentice-trainers or supervisors for industrial undertakings.
- (f) Teachers of science, mathematics, mechanics, and technical drawing working in vocational schools, secondary schools with workshop classes, polytechnics and technical institutes.

The teachers listed under (f) will normally possess University degrees. Unfortunately it has been found from experience that the holder of an academic degree in science is out of touch with the requirements of practical mathematics, applied mechanics, and engineering science. Such teachers will therefore need short extension courses to re-orientate their teaching and bring it into practical application in the field of technology. Training programmes for the different types of teachers required are dealt with in succeeding paragraphs.

50. *Teachers of Handicrafts.*—Prospective teachers of handicrafts for Classes VI—VIII should possess the minimum educational standard of matriculation with passes in mathematics, science and drawing. They should then be given a general course of training in handicrafts for schools for a period of two years. This two-year course should cover (a) the elements of woodwork, metalwork and simple electricity incorporating the use of the common hand-tools and either, (b) arts and crafts, or (c) agriculture crafts. Particular emphasis should be laid upon the techniques of instruction in the practical shop, care and maintenance of tools and equipment, and methods of recording and assessing practical work. During the training course, students should also receive instruction in language, civics and social studies, basic craft science, craft calculations, and drawing.

51. *Technical Instructors for Vocational Schools.*—Prospective instructors who wish to teach in vocational schools should possess the minimum qualifications of matriculation (with mathematics, science, and drawing), a technical diploma from a polytechnic or a technical institute, and at least two years' experience in an industrial workshop. Such instructors should therefore be highly skilled and experienced craftsmen with a fair degree of basic theoretical knowledge relating to their craft subject. Such men will require a refresher course in skills and basic technology together with instruction in teaching methods and techniques applicable to workshop requirements. Professional training in the methods of teaching and its subsidiaries will be the main requirements for men of this category. The course would therefore be of one year's duration.

52. *Technical Teachers for Secondary Schools.*—Prospective candidates for training as teachers of technical subjects in secondary schools should possess the minimum educational requirements of intermediate with passes in mathematics and science, and a pass in drawing at matriculation level would also be desirable. The training course should be of three years' duration and should include practical training in woodwork, metalwork (bench and machine), electricity, and engineering drawing; professional training should include methods of instruction suited to workshops, care, use and maintenance of equipment, and recording and assessment of practical work. Language instruction should also be given so that technical teachers are able to keep abreast of modern knowledge by reading technical journals in English. Practical mathematics, applied mechanics, and engineering science should also be studied and directly related to the practical content of the course.

53. *Instructors for Polytechnics and Technical Institute.*—Just as in the case for technical instruction in vocational schools, the first requirement is that a candidate for training should possess a high degree of craft skill and some basic theoretical knowledge. He should therefore possess matriculation and a diploma in technology from a polytechnic or a technical institute, and at least two years' experience in an industrial workshop. He should in addition receive a course of training for one year covering technology, methods of instruction in the workshop suited to his speciality, assessment and recording of practical work done, and care and maintenance of workshop tools and equipment. The course should also emphasise the relationship of background studies to the technology studied—practical mathematics, applied mechanics, engineering science, applied economics, and design.

54. *Apprentice-trainers or Supervisors.*—Apprentice-trainers or supervisors will be experienced men already employed in industrial undertakings and having an understanding of the problems of the trainee. These men will generally require short courses of about a month's duration in methods of TWI so that their critical and analytic powers are developed, and their understanding of job breakdown for purposes of training is improved. They should also be given some details of the basic background studies of the young apprentice attending evening or part-time classes, and the reasons why such training is given. These courses might well be conducted over one year in the evening wherever technical institutes are in operation.

55. *Teachers of Science, Mathematics, etc.*—Instruction is given in science, mathematics, mechanics, and technical drawing in technical institutions and schools because these subjects offer logical explanations of the processes of technology. In other words, they are component parts of a technology which can only become completely intelligible with their aid. From this it must follow that students must see how to apply the technology they are studying. Purely academic teaching of principles is of little use to the technical student—he needs both the principles and a knowledge of their application. All teachers of these subjects in technical schools and institutions will therefore require short 'extension' courses to give them an understanding of the application of these subjects to engineering, building construction, and technology generally. Courses of from two weeks to one month should therefore be arranged for this purpose.

56. *Five-year Training Programme.*—To meet our requirements for technical teachers to man our institutions and schools over the next five years the following numbers of teachers and instructors will be required, as nearly as we can judge :—

(a) Teachers of handicrafts (Classes VI—VIII) ..	800
(b) Vocational School Instructors	600
(c) Technical teachers (secondary schools) ...	300
(d) Technical Instructors (polytechnics, etc.) ..	900
(e) Apprentice-trainers supervisors	500
(f) Teachers of Science, mathematics, etc. [mainly for (a), (b) and (c)].	600

57. To meet the requirements of this programme we shall have to establish training institutions on both a permanent and an emergency basis. We therefore recommend that the following steps should be taken to provide technical teacher-training :—

- (a) Three permanent teacher-training institutions should be established in East and West Pakistan and the Centre to produce teachers of handicrafts (two-year course) and technical teachers for secondary schools (three-year course).
- (b) The three polytechnics should establish training courses for technical instructors (one year course).

- (c) Polytechnics and technical institutions should establish short extension courses for apprentice-trainers, teachers of mathematics, science, etc.
- (d) Training courses should be established on an emergency basis at existing technical institutions to meet immediate training demands in any of the above categories.

58. *Need for Flexible Planning.*—We are well aware of the grave difficulties in drawing up accurate plans in this field since we have no previous experiences to go upon. We are also well aware of the recruitment difficulties which have been encountered in the past, and of the fact that technical institutes and polytechnics have never yet been able to secure the staffing which they have needed. The above training recommendations must, therefore, be planned from this point of view. It may well be that one-year courses for technical instructors in the polytechnics will be difficult to organize initially since all the untrained staff recruited may be required for teaching duties immediately. However, in such a case we recommend that the requirement of one year's training should be kept, but that it might be spread over several years, and conducted largely in the vacations, a step which has already been taken at one polytechnic for some of our existing teaching staff. Similarly, it may be desirable to spread the training requirements of other grades of technical teachers over a longer period. These facts should not, however, lead us to abandon desirable standards which are needed to ensure sound development.

X. Salaries of Teachers of Technical Subjects :

59. The implementation of a scheme of technical and vocational education will require the creation of new categories of teachers, many of whom will have had good industrial experience, and who will have to be attracted into teaching in face of competition from alternative sources of employment in the industrial field. This raises the question of competitive salary scales. We have so far failed to attract to the existing technical institutes and schools men of the right kind—those who possess technical skills, good general education, and personality, for these are the very men who are most sought after in industry. It will, therefore, be necessary to review the position carefully and to revise the salary scales with attendant benefits in such a manner as to attract suitably qualified personnel to this important field.

TECHNICAL AND VOCATIONAL EDUCATION

SUMMARY OF RECOMMENDATIONS

I. Introduction :

1. Technical education is an integral part of the educational system.
2. The curriculum of general education in schools should be diversified by including practical courses in technical subjects, agriculture, commerce and home economics. At the same time the curriculum of technical and vocational schools should include courses in social studies and humanities.
3. All students should pursue a common course through the middle stage, after which the first diversion of students from general to vocational and technical schools should take place. The second diversion should take place after Class X when the students may join polytechnics and technical institutions. (4—8).

II. Vocational Schools :

1. A network of vocational schools should be established throughout the country, with the aim of training students who have manual skill and show an aptitude for craft work, for apprenticeship schemes in industry.
2. The curriculum at these institutions should consist of 50% craft instruction and 50% general education.
3. The duration of the courses in vocational schools should be two or three years.
4. Existing trade and industrial schools should be remodelled on the pattern of vocational schools and be properly staffed, equipped and supervised.

III. Polytechnics and Technical Institutes :

1. The objective of these institutions is to train technicians of the supervisory cadre who should possess :—
 - (a) skill in certain industrial processes ;
 - (b) an understanding of the principles underlying these processes and the skills involved in them ; and
 - (c) training in the handling of industrial workers.
2. Admission should be based on the result of the secondary examination (Class X) supplemented by an aptitude test developed experimentally and adapted to local conditions.
3. The curriculum of all courses should :—
 - (a) Lay special emphasis on the utilization of local resources and on the development of processes appropriate to local conditions. (22).

- (b) Include subjects basic to technology, *viz.*, mathematics, drawing, and those related to management, *e.g.*, costing and budget control, business economics, industrial relations and psychology, factory organization and management, and foremanship. (24).

4. Types of courses:—

- (a) Existing facilities in civil, mechanical, electrical, power, radio-electronic, automotive, ceramics, leather, and textile technologies should be strengthened and extended.
- (b) New diploma and certificate courses should be introduced in the fields listed in paragraph 22 and particularly in (i) instrument making and repair; (ii) Coach building; (iii) Motor-body building; (iv) Electrical installations; (v) Gas technology and supply; (vi) Paper technology; (vii) Boat building and small craft design and construction; (viii) Navigation, including coastal navigation; (ix) Scientific glassware; (x) Printing trades technology; (xi) Building trades technology (masonry and brickwork, slating and tiling, concrete construction including formwork and shuttering, etc.); (xii) Agricultural science and animal husbandry; (xiii) Architectural draughtsmanship. (22).

5. *Duration of Course.*—The duration of the diploma course should be three years; that for the certificate course may be shorter, depending on the extent and coverage of the course and on the previous industrial experience of the student. (18).

6. *Need for Technicians.*—The shortage of technicians in the country has led to the posting of engineers to perform routine supervisory duties. Arrangements should be made during the next five years to set up more technical institutes for producing annually 7,000 technicians in various fields. (27).

IV. Evening and Part-time Classes :

All polytechnics and other technical institutions should offer evening and part-time courses as a regular feature of their programmes. Such classes should run on a self-supporting basis as far as possible, and the range of courses should be designed to meet the special requirements of local industry and of the small employer. (28—31).

V. Management, Industry and Apprentice Training :

1. Industry should provide systematic training for operatives who can keep machines running, and for mechanics and skilled workers who can repair them. Government should insist that industrial concerns provide their own training schemes in their own works. Large-scale industry should be encouraged to draw up its own training schemes for approval by the appropriate authorities. For small industries, training should be given in mobile workshops and in the evening courses in polytechnics, and apprentice training centres should be established in suitable areas on a co-operative basis. (32—36).

2. Government should provide that in all development schemes model factories should be established with up-to-date production methods in well-planned workshops. (34).

3. A Central Manpower Committee should be established in order to collect data and give information to interested parties, and to :—

- (a) enforce the Factory Acts to ensure proper conditions for 'on the job' training ; and
- (b) conduct surveys for small scale industry and to provide data for the co-ordination of industrial effort and drawing up training programmes. (37).

4. Industry should bear a substantial portion of the cost of establishing technical institutions. Contribution made by industry for the organization of these institutions should be treated as part of the capital costs of production. (38).

5. Government contracts should be awarded only to those firms which employ proper proportions of engineers, technicians, skilled workers, operatives and apprentices. (38).

VI. Control of Technical Education :

1. All technical institutions other than those administered by universities should be under the control of the Directorate of Technical Education in the Department of Education. (40).

2. The Ministry of Education should have a strong section with specialized staff to direct the programme of technical and vocational education along sound lines. (41).

3. The Council of Technical Education should have effective branches in each province to co-ordinate all efforts in the field of technical education, to improve academic and technical standards of instruction and examination, to act as a liaison between the industry and the Education Department, and to advise and guide the Department on all matters of Technical Education. (42-43).

VII. Vocational Guidance :

1. The Ministry of Education and the Provincial Directorates of Technical Education should appoint immediately Vocational Guidance Officers, and should prepare handbooks of careers, so that the pupils may get advice and information about various career opportunities (44—46).

2. A member of the staff of every school giving practical instruction should be appointed 'Careers Master'. He should be able to advise the parents and school authorities on the aptitudes of the students and the careers suitable for them. (47).

VIII. Examinations in Technical Subjects :

Boards of Technical Examinations should be set up in East and West Pakistan and the Federal Area to conduct public examinations in Technical subjects and to issue certificates to successful candidates. The Ministry of Education should prescribe the procedure for co-ordinating the work of these Boards. (48).

IX. Training Programmes for Technical Teachers :

Training courses must be developed for the various categories of teachers and instructors of technical and science subjects in middle schools, vocational schools, secondary schools, polytechnics, technical institutes, and apprenticeship centres. For the next five years, such training should be offered according to the following plan :—

- (a) Three permanent teacher-training institutions, one each in East and West Pakistan and the Federal Area, should be established to produce teachers of handicrafts (two-year course) and technical teachers for secondary schools (three-year course).
- (b) The three Polytechnics at Karachi, Rawalpindi, and Dacca should establish training courses for technical instructors (one year course).
- (c) The Polytechnics should establish short extension courses for apprentice-trainers, teachers of mathematics and science.
- (d) Training courses should be established on an emergency basis at existing technical institutions to meet immediate personnel requirements in any of the above categories. (49, 57).

X. Salaries of Teachers of Technical Subjects :

The position regarding salary scales of teachers of technical subjects should be reviewed carefully, and the scales should be revised with attendant benefits in such a manner as to attract suitably qualified personnel to this important field. (59).

CHAPTER 5

PRIMARY EDUCATION

I. Introduction :

1. At the very outset of a discussion on this matter we must make clear that a distinction exists between compulsory education and primary schooling. In advanced countries the period of compulsory schooling often goes beyond what is strictly the primary stage so that each child receives a year or more of some form of secondary education. In such countries the period a child must spend at school will generally be as long as nine or ten years, more rarely eleven or even twelve. Historically these countries began by making primary or elementary education compulsory and gradually extended this period upwards beyond the primary stage as their own resources permitted and the needs of society demanded. Compulsion can begin with the primary stage but may be extended indefinitely up the educational ladder.

2. In the introduction to this report we had occasion to acknowledge the fact that in those countries where a marked increase in national wealth had taken place in this century, this progress could be dated from the time when schooling was made compulsory. Such education is known to be the only certain means by which universal literacy can be attained within a community and the only way through which the talents of gifted children can be located so that they may be guided into further courses of study.

3. A modern technological society based on the application of industrial processes to the exploitation of the forces and resources of nature, can only be built and function when there is available a large body of skilled and literate workers, apart from the engineers and technicians who help create it. The availability of such a body of skilled manpower can only be ensured when some part of education is made compulsory and so universal.

4. Such universal education is also normally a concomitant of parliamentary democracy. A democracy requires that its citizens can distinguish between the claims of rival political parties, can interpret news intelligently and critically, and are willing to serve on local bodies, committees or councils.

5. The achievement of these aims of educating an individual capable of leading a full and productive life and a citizen who can play an intelligent and constructive role in the working and development of the nation, demands a universal form of education of sufficient length to bring the individual child to a point at which he can exercise these privileges and responsibilities independently. We must now examine what this sufficient length should be.

6. We have already pointed out that in advanced countries this period varies from eight to twelve years. The experience of these countries also is that four years is the minimum period in which the elements alone of functional literacy can be attained by an average child with any assurance that they will not be quickly lost and the efforts and money expended on achieving them nullified. But the elements of literacy, though a decided advantage, are insufficient equipment for a skilled worker, a responsible

citizen and a developed individual. There is little time available to the teacher in a four or even a five-year course to nurture the other, aspects of a child's personality, introduce him to an understanding of social forces and scientific knowledge, and give some preliminary training in vocational skills. We believe that these objectives cannot be fully attained nor can a sound foundation for the vocational and other courses we are proposing after Class VIII be laid in less than eight years' schooling.

7. The question now arises as to whether in our country any part of this eight-year period can be made compulsory and if so, how much of it. The introduction of universal compulsory schooling has been repeatedly urged since the 1947 First All-Pakistan Educational Conference. Legislation for it exists, in fact, in most regions and our concern today must be how existing legal enactments can be made effective. We believe the time has come for us to accept the implementation of universal compulsory education as a part of our national policy and for fixing a target date for this implementation, whatever be the difficulties and problems involved.

8. In most areas of Pakistan at the moment, the basic requirement of such education is a five-year course. Practice often falls below legal requirements, however, and it is well known that a very large percentage, and in some areas a majority of the children who enrol in our schools, never complete the course, large numbers dropping out from the second year onwards. Nevertheless, we believe that our first goal should be to make the five-year course a universal and compulsory one and that we should try to achieve this in ten years. Looking beyond this target, we recommend that our second goal should be to make eight years' schooling compulsory within fifteen years.

9. With less than 50% of our primary age group children at present in schools and with a constantly increasing child population, the achievement of even the first of these goals will call for tremendous efforts in school buildings, teacher training and school finance. Its achievement in ten years may, therefore, seem over-optimistic. When we remember the phenomenal progress in some other countries of Asia in a similar period and the great economic progress possible with the application of modern science and technology, we can see that such an effort is not only possible but necessary to us. We believe that the proposals for self-help we make in the chapter on Financing Education combined with a sustained effort by our departments of education will make this target realizable.

10. These two targets of first, a five-year compulsory period, and second, one of eight years, happen to coincide with the end of the primary and middle stages of diversification recommended in the chapter on Technical and Vocational Education and fit in with the twelve-year pre-university course recommended in the chapter on Higher Education. No dislocation in the school structure will, therefore, be caused by pursuing them.

II. Introducing Compulsory Education :

11. There is good reason to believe that more than 50% of our children actually enrol in primary education at some time. On the other hand, as we have already stated, this is offset by the very serious dropping out of children before they have completed more than two or three years of schooling, such wastage at times reaching the figure of 75% in some

areas. No child can achieve even literacy in this period, and there is no need to underline the useless drain on our limited resources such wastage involves.

12. We are, therefore, faced with a double problem: large numbers of new children must be found school accommodation and vigorous steps must be taken to ensure that children enrolling in or attending primary schools complete the minimum five-year course we have suggested. We recommend that the first step to be taken is to compel all parents of children enrolling in primary schools to keep them in these schools at least until the age of nine or ten plus or until the course has been satisfactorily completed. The second step is to introduce compulsion progressively for the entire age group, five plus to ten plus. This can be done in a variety of ways, and, considering the different rates of progress made in the various regions of Pakistan, it would seem best to allow each region to determine its own manner or procedure. One area may wish to begin making attendance compulsory for all five-year olds, then for all five and six-year olds the following year and then for five, six and seven-year olds and so on until at the end of ten-years, with suitable breathing spells for consolidation and training of teachers, the entire age group is covered. Another area may prefer to introduce compulsion district by district, whatever method is adopted, it can be prolonged beyond the ten-year period to the fifteen-year period to cover the eventual full compulsory course of eight years. We believe that the proposals we have made regarding the financing of compulsory education will encourage parents to derive full benefit from such schooling.

13. With the introduction of progressive compulsion along the above lines, certain other administrative and educational measures, which are now common practice elsewhere, should also be applied. Schools should be permitted to enrol new children only in the first month of each new school year and only five-year olds should be admitted as new pupils. A teacher cannot give proper instruction in a short school year or school course. In our circumstances, when traditional considerations will move us to wish to enrol willing pupils of any age at any time and demographic considerations make it difficult to know a child's age with certainty, such measures may appear harsh and difficult to apply. We believe, however, that if we are to proceed in an orderly fashion and avoid excessive strains on our school system, these measures must be applied strictly.

14. The above administrative measures should be accompanied by a necessary educational reform regarding the promotion of children from class to class. One of the major contributing factors in the dropping out of children from school is the practice of forcing them to repeat classes. Promotion of children by age rather than by results in end of year tests is now common in the primary schools of advanced countries. Unless such a measure is adopted progressively in our schools, (with the rare exception for the very retarded child), we risk clogging the first two classes with backward and over-age children once compulsion is introduced and having few or no places free for the new-comers. We strongly recommend that this matter should be seriously studied by departments. Applied with intelligence, it will be found that such a promotion policy will go far to reduce the number of withdrawals from schools and make the introduction of compulsory attendance a reality. A headmaster should reserve the power, however, to hold back up to say four children out of a

class of forty. Any greater number should be held back only with the agreement of the inspector. This will be sufficient power to enforce continued work by the children.

15. Compulsion, however, is in itself not enough to ensure adequate education or to remove the reasons for children's non-completion of the school course. The retention power of the school itself must be improved by making it more attractive to its pupils, through better teaching methods and through offering a curriculum more clearly related to national, community, and individual needs and interests. We make some suggestions on these matters below.

16. One other consideration in regard to compulsory attendance is of relevance to our conditions. In areas of sparse population it may prove possible to provide schools with only Classes I and II in small villages. In these cases Classes III to V should be available in a central village. The existing limit of two miles which children should be required to travel should be respected, however. Again, for certain sections of the community—migratory ones for example—compulsion will prove difficult to enforce and special techniques—such as mobile schools—will have to be worked out.

17. We may end this discussion on compulsory education with a recommendation regarding the amount of work which should go on in the five years' period suggested. Most countries fix by government decree the number of working days in a school year and the number of hours to be worked per week. These vary from country to country, and after a consideration of them and of the conditions prevailing in our country, we recommend that the minimum number of working days for primary schools should be fixed at 200 and the minimum working week for Classes I and II be twenty-six hours and for Classes III, IV and V be thirty hours.

18. After this discussion on compulsory and universal education and the necessity and methods of introducing it in Pakistan, we may turn our attention to the problems of primary education since, as we have seen, this will coincide with the first target set for introducing compulsory education. In discussing this stage in the educational ladder, we must remember that, at least until the compulsory period is lengthened, it will constitute a terminal stage for the majority of our children. It must, therefore, be thought of as a self-contained unit, even if it is also preparatory for the minority of children who will pursue further studies. We shall have to consider its form and fix its objectives with this point in mind.

III. Age of Admission to Primary Education :

19. The main criterion for determining the age of entry for Pakistan children would seem to be the age at which parents are most likely to withdraw their children from school. From this we can calculate backwards the age from which children could most easily be held in a five-year course. An additional point to be remembered in our context, as compared with advanced countries is that whereas in setting a late starting age they can often count on extensive facilities for pre-primary education, such facilities are almost non-existent in our country.

20. We find that in this country there is a temptation, for economic reasons, to withdraw children early from school. All known factors

considered, it would seem that parents feel this temptation most keenly when their children reach the age of ten plus. It would, therefore, be realistic to calculate the entry age from this point. We thus arrive at the age of five as the indicated age of admission.

IV. Objectives of Primary Education :

21. When the full compulsory schooling of eight years has been instituted, this stage of education will include some craft instruction and pre-vocational courses. In the meantime, we must set realistic aims for a five year course. While making children completely functionally literate must remain a basic and constant concern at this level, we must remember that functional, literacy in itself is not enough. We should, therefore, strive to keep the aims of our primary education sufficiently broad so as to equip its pupils to lead full and productive lives, to be prepared to pursue further education with profit and to lay the basis for the future expansion of the compulsory course into a full eight year one. With these considerations in mind, we believe that the objectives of primary education can be stated broadly as follows :—

- (a) to provide such education as will develop all aspects of a child's personality—moral, physical, and mental ;
- (b) to equip a child according to his abilities and aptitudes with the basic knowledge and skills he will require as an individual and as a citizen and which permit him to pursue further education with profit ;
- (c) to awaken in a child sense of citizenship and civic responsibilities as well as a feeling of love for his country and willingness to contribute to its development ;
- (d) to lay the foundation of desirable attitudes in the child, including habits of industry, personal integrity and curiosity ;
- (e) to awaken in the child a liking for physical activity and an awareness of the role of sports and games in physical well-being.

22. The pursuit of such broad objectives is handicapped in a number of regions by the excessive burden of language teaching. The main emphasis in such teaching at the primary stage should be placed on the national language which is usually the mother tongue of the pupil. If too much language teaching is attempted the timetable becomes so clogged with it that attempts to meet the objectives we have suggested are nullified. The full achievement of these and the development of our system of primary schools into an effective instrument of general education will require reform of present practices in the fields of administration, finance, teacher training and teaching methods, the provision of textbooks and class-room aids, school buildings and equipment. Suggestions regarding reforms in these will be found in different parts of this report.

V. Curriculum :

23. The courses taught to the child aged five plus to ten plus should naturally be adapted to the mental abilities of this age group, and be so designed as to develop fundamental skills to a level sufficient for a child to cope with most normal situations in every-day life. The curriculum

should, in addition, include courses in simple science and social studies which will give the child an introductory knowledge of the world around him.

24. The curricula now in force in the various areas of Pakistan generally include reading, writing arithmetic, elementary science, social studies, physical education, the practical arts, and moral instruction. There is at times, however, a tendency to overload the curriculum and pay insufficient attention in framing it to the special requirements of the child of the five plus to ten plus age group and particularly to those of the child who is gifted or who is backward.

25. As we have stated in our Introduction, a basic weakness of our entire educational system which, in a sense, reflects a weakness in our society, is the minimal demands made on the pupil's use of his hands. For this reason, we urge that courses in simple handwork be made compulsory for all children at the primary level. Wherever possible these should be supplemented with practical courses in school gardens so that children acquire some elementary knowledge of the soils and plant growth.

26. We have also said that the school has an important part to play in developing national consciousness. The basic character traits of a child are formed by the age of ten or eleven and, as already stated, the primary school will be a terminal stage for the majority of our children. It is, therefore, most important that this sense of patriotism be cultivated throughout this stage of schooling.

27. When, in framing the curriculum, a proper balance has been achieved between courses designed to develop the basic skill in the three "R's", and those relating to social studies, elementary science, handwork, and the nurturing of a sense of national conscience, the orientation of the courses taught must be decided. Our belief is that teaching in our primary schools is over-standardized and does not sufficiently reflect local interests nor make sufficient use of the centres of interest deriving from local community pre-occupations. This in turn means that our teachers rely too much on centrally prepared text-books and do not exercise sufficient initiative in finding material for their lessons in the resources of their village and the community around them.

28. In the chapter on the Talent Scheme, which appears later in this Report, we suggest the introduction of a national system of scholarships and free places for the encouragement of gifted children. These children will be first discovered at the primary stage and it is 'therefore' important that the teaching provided at this level be of such a nature as to allow such children to develop to their full capacity and become candidates for the scholarship examination. Whenever facilities permit it, headmasters and teachers should arrange for ability grouping in each class, allowing the gifted child to proceed at his own pace, beyond even the requirements of the syllabuses in his strong subjects, so as to prepare himself for the scholarship examination at the end of Class V.

29. We have already recommended in the chapter on Secondary Education that the process of curriculum construction and its revision in the light of evolving social and individual interests and needs be a continuous one. Curricula and the subject syllabuses which are derived from them must meet these interests and needs and be contemporaneous with

them. They must also be designed to fit the psychology and learning capacities of the age group for which they are prescribed. Much more detailed study of the psychology and intellectual habits and capacities of the Pakistani child at different age levels is needed. We hope that some fundamental work on this will be done by the Institutes of Education it is proposed should be set up in both provinces. In any case, even in the absence of such detailed knowledge, it is necessary to have within each Department of Education, a Section or Division charged with the task of studying and elaborating the curriculum for our primary schools. This will entail a series of short studies on various subject matters. At the same time, close contact with research centres, Teachers' Colleges and Departments of Education in the different universities should be maintained and an effort made to keep up-to-date on modern overseas practice through the information services provided by the Bureaux of Education.

30. A further task of these sections will be to work with those who will organize refresher courses for teachers and ensure that full information on new syllabuses being introduced is made available to them. They should also take the initiative in organizing conferences and training courses for headmasters and inspectors of schools on modern practices in curriculum revision and the teaching or syllabuses prescribed for different subjects. It would also be useful if arrangements could be made for experimental courses of study to be tried out in some model schools before these experiments are generalized in the schools of a region or of a province. The sections should equally have the responsibility for making sure that the necessary textbooks and teachers' guides to accompany syllabuses are prepared well in advance of their instruction. We would recommend a greater use of such guides prepared by subject specialists and produced by the Departments of Education. These guides should advise the teacher on how the subject should be treated and correlated with other subjects in the curriculum, suggest teaching methods, and give guidance on how to handle the backward, difficult or gifted child.

31. While headmasters and teachers will be making use of syllabuses, textbooks and other material prepared professionally at the departmental level, they should at all time attempt to relate this material and all their teaching to the local environment of the child. Teaching methods should, whenever possible, use the activity or project approach and the teacher should show initiative in the use of local materials as teaching aids.

32. In framing their class time-tables for the teaching of the different syllabuses of instruction, headmasters should bear in mind that all subjects need not be introduced in Class I nor need the same number of class-hours per week be devoted to each subject throughout the school course. A preponderant amount of class time may be spent in the first two classes in teaching the basic skills in reading, writing and simple counting, as well as in developing control over hand muscles through painting and simple handwork, combined with group activities aiming at socializing the young child. Weightage of time given to such subjects will change with Class III when teaching might begin in simple science such as nature study, simple geography and history.

33. Deriving from these general remarks, we have the following specific suggestions to make regarding the content of what is taught at the primary stage :—

- (a) The primary school should open each day with an assembly at which the national anthem is sung. At regular intervals,

this morning assembly should be accompanied by the hoisting of the national flag, and short talks emphasizing patriotism and character building should be given.

- (b) We have suggested that handwork be made compulsory in the primary school. In addition, the headmasters should devise other activities which will awaken in the child a liking for manual work and a sense of the dignity of labour. These should be related to the special interests of boys and girls and might include work on a school garden, in home making, or accepting responsibility for the repairs and upkeep of school property and should be planned so as to nourish the habits of co-operative work and a sense of responsibility.
- (c) A strong emphasis should be placed on the proper learning of the national language at the primary stage.
- (d) Religious instruction should be compulsory at this stage with courses graded suitably for the different ages of the children. This question of religious education we examine in a separate chapter.
- (e) The reading materials, school experiences and activities of children should be organized in such a way as to build up desirable attitudes, character traits and industrious habits in children as well as a scientific outlook on life. These materials, experiences, and activities should also be related to the child's environment and national preoccupations.
- (f) Teaching in the first three classes should by the correlation of subject matter attempt to integrate and synthesize the knowledge taught.
- (g) The curricula should specify and the schools develop programmes of teaching to meet the needs and capacities of both backward and gifted children.

VI. Facilities :

34. An examination of the elements of the curriculum we have just discussed will show that we have had in mind the teaching of certain things—patriotism and character building for example—which are of national significance and at the same time the orientation of at least part of the teaching to local interests and the local environment. This double relationship of the primary school—to the local community and to national responsibilities—should be a feature of all aspects of its work. We find that in all countries, whether advanced or underdeveloped, considerable efforts are made to involve the local community in the opening, upkeep, and operation of primary schools.

35. Such action can be justified in Pakistan on two grounds. The first is sociological, in the sense that the more the villagers or other local communities are involved in and responsible for the operation and upkeep of primary school, the more they will feel a sense of proprietorship, of it being their school, and the more importance they will attach to education and the necessity for their children taking full benefit from it. The second ground justifying such action is economic. It will be beyond

the resources of Government to find the money for all the costs involved in implementing compulsory education. A considerable part of the effort will have to be made by local communities.

36. One obvious responsibility which can be given to the local community, is that of the erection and upkeep of the school building itself. School buildings should fit in with local building habits and need not be expensive structures. They can easily be made with local materials and still be neat, clean, and kept in good repair. Colour can be introduced into the class-rooms, and flowers and a garden provided. These things do not cost much money but do require local interest and co-operative effort. To accomplish this teachers, pupils and the local community should work together. The departments can help by having plans prepared, adapted to the different building materials which might be used and to climatic conditions, and made available with simple directions on how to go about the job.

37. In urban areas where enrolment will be large and land costly, the problem is different. Here it may well be necessary to erect two or three storeyed buildings and skilled direction and construction will be necessary. Teachers and the local community can still play a helpful role, however, in providing manual labour to work in groups under skilled direction for such things as concrete mixing or even brick laying.

38. If Government provides the buildings, costs will be prohibitive and expansion will be slowed down. We realize that there are certain areas which are extremely poor and because of this also apathetic. In order to ensure equality of opportunity, it will be necessary for Government to supplement the resources of such communities and perhaps also take the initiative.

39. Communities can in the same way be given the responsibility for providing housing for the teachers. In the case of women teachers, who should be more generally used at the primary stage, this should be a strict rule.

40. What we have said regarding the provision of a school building should apply equally to school furniture and as far as possible to teaching materials as well. For most areas the construction of simple desks, tables, and chairs should present little difficulty. Teaching materials can also be made out of material available locally. Even simple scientific experiments can be carried out with scrap materials available in every village. The departments can here again give a definite lead to the teachers and headmasters by preparing and distributing simple designs for school furniture and making suggestions on the construction of teaching materials.

41. We recommend, therefore, that the allowance being made for particularly poor and for urban areas, the responsibility for the construction and upkeep of school buildings, teachers' houses, and school furniture be transferred to local communities and all efforts made to encourage teachers to make their own class-room aids.

VII. Teachers :

42. As has already been pointed out, less than 50% of the children of primary school age are at present enrolled in these schools. If we are to achieve effective compulsory primary education within the ten years:

suggested it will be necessary to more than double the present number of teachers in service. This, in turn, will mean a great expansion of present training facilities. To ensure that these are provided in time and in an orderly manner we recommend that a survey be carried out immediately to find the number of teachers required and to determine the provision that should be made for training them. The nature of the training to be given we deal with separately in the chapter entitled The Training and Conditions of Service of Teachers.

43. Training facilities should be opened as indicated by this survey. First, priority should be given to the establishment of Institutes for the training of college staff, the nature of which is discussed in the chapter on Teacher Training just cited. The situation is made more difficult by the fact that many of our teachers presently in service are untrained, insufficiently trained, or badly in need of new insights into the skills of their profession. We recommend that widespread facilities be made available at district and divisional levels for the running of refresher courses.

44. To expand the teaching service, concerted efforts will have to be made to recruit into it young people with the proper attitudes, interests, and skills. We suggest that this recruitment process begin in the secondary school while the child is still deciding on his future career. All teachers, and particularly those appointed for guidance work as suggested in the chapter on Secondary Education, should in this way play a part in the recruitment campaign.

45. We have suggested elsewhere that women are ideally qualified to teach in the primary school and particularly in the first three classes. Care will have to be taken to make the conditions of service for them acceptable, as there is here a great field for further recruitment to the service.

46. We are suggesting that the academic requirements for entry into the service as a primary school teacher should be matriculation. Training will be for two years after this and will include courses aiming to deepen the student's knowledge of his subject and to train him in methodology, child psychology, and professional ethics, as well as allowing him scope for practice in schools.

47. We have said in regard to the teacher in the secondary school that he should have the feeling of belonging to a profession in which he can make a steady career and which gives him a sense of security. This applies equally to the primary school teacher. Here, too, a regular system of assessment of the teacher's work should be instituted. This assessment should be specific and comprehensive and include evaluation of his class success, his community relations, his eagerness to experiment, his extra-curricular activities, and his use of local materials. These assessment, to be effective, should form the basis for promotion, demotion, and the granting of annual increments.

48. The salary a primary teacher receives must be sufficient to give him a minimum standard of living. As the cost of living varies considerably between the rural and urban areas, it would perhaps be necessary to provide a different scale or special allowances for teachers working in

more expensive urban localities. We recommend that the appropriate authorities should review the existing scales of salary so as to give the teachers a reasonable standard of living.

49. Two constant worries of the teacher are the possibility of serious illness in his family and the loss of his income after retirement. In order to remove these worries, consideration should be given to the question of the provision of health insurance and retirement benefits.

50. Consideration should also be given to the recognition of a teacher by society. We hope that the increasing association of the parents and the teachers, on which we have laid so strong an emphasis, will provide the necessary stimulus for such recognition. We consider this matter of considerable importance and suggest that teachers' services should be recognized through annual awards made at the highest levels, with publicity through radio, film, and the press. More specifically, we recommend that every year a few teachers who have shown the most outstanding work, should be presented to the President and the Governors at some appropriate function and that these presentations should be widely publicized. Such recognition, we believe, would give the teachers of primary schools the status that they deserve in society.

51. It is to be expected that in return for better pay, better training, a secure career, and public status, the teacher will devote his full time to his work and bring to it some sense of vocation and the high standards of professional ethics. It is not only that the teacher is expected to give the very best education to the children in his charge, the parents and society also naturally expect him to set an example by his professional and personal conduct.

VIII. Finance :

52. The central problem in applying compulsory education is that of finance. We have seen that less than half of our children are presently enrolled in primary schools and this is a measure of the additional expenditure which will be required if we are to have a 100% enrolment at the end of ten years.

53. We find that compulsory education in most countries of the world is free. We believe that it should be free in Pakistan. The adjective "free" must however be carefully examined. Education, like any other service, must be paid for somehow, and it is free in other countries only in the sense that its costs are borne from general taxation. In one way or another, therefore, it is paid for by the people. The only alternative to the charging of fees is the raising of the necessary finances through taxation and, although the Commission is not qualified to make recommendations on fiscal matters, we feel we have the responsibility for suggesting ways in which a solution can be found.

54. Even in advanced countries we find that in the early stages a large part of the costs has been borne by the local community. At times the local community has taken complete responsibility for paying the teacher and housing him, as well as putting up and equipping the school building. As the education system has evolved, more and more responsibility has been accepted by regional and central governments. Even

to-day there are many advanced countries with highly centralized forms of government where the cost of providing compulsory education is shared between the Government and the local communities.

55. In the section dealing with "facilities" we have already stated the several sociological and economic reasons for associating local communities with their schools. Through such association, they come to feel that they are getting a return for their money. Moreover, this is a useful way of developing local government and local responsibility.

56. We have suggested that direct participation by the local community should be through the provision of school buildings, equipment, and teachers' residences. We feel, however, that salaries should be provided through taxation.

57. We do not think that Government can possibly meet the entire cost required for primary education through its normal taxation structure. We therefore recommend that a special tax be levied at the District level, and in the case of East Pakistan perhaps at the Sub-Divisional level, to support specifically the expansion of primary education. There are a number of countries which have levied such special taxes. The fact that compulsory education is decreed by Government, places it in a unique position among the services and makes imperative the provision of the necessary funds; indeed, Brazil has provided for a special tax in its constitution. We recommend that Government should try to raise through this tax 50% of the cost of primary education, leaving the balance of 50% to be met from the resources of Provincial Government.

58. During the period of the British rule, primary education was administered by local bodies. The schools were financed partly by contributions from local bodies, but largely by grants from provincial revenues. Rules determining the contribution of Government and local bodies were framed by each provincial government in accordance with its economic resources. In consequence there was considerable variation not only from province to province but even from district to district within the same province. In particular, the variation was considerable between rural areas and urban areas. As the latter possessed better financial resources, their contribution was naturally fixed at a much higher figure.

59. Under this scheme, education expanded rapidly and the period following 1921 saw a great increase in the number of schools involving considerable additional expenditure both from local bodies and government itself. As administrative power further devolved, certain difficulties began to appear. The members of the local bodies, some of whom were also members of the legislatures and therefore depended for their popularity on the votes of their constituencies, became more and more reluctant to increase local taxation. The result was that the contribution of local bodies towards further expansion became negligible and government had to meet almost entirely the new expenditure. The net contribution made annually by local bodies to-day works out at 25% of the total expenditure.

60. Simultaneously with the devolution of power the Deputy Commissioners were replaced by elected chairmen of local bodies. Administration became increasingly inefficient.

61. It is because of this that the administration of primary education was taken over during the last few years by Government in most of the regions. In the former Panjab, however, schools still belong to local bodies. These receive grants from Government which, in the last few years have in many cases accounted for 100% of the operating costs.

62. Our proposal is that a new start should be made on the financing of primary education with costs shared equally between local bodies and government authorities. When we talk of the sharing of cost in the ratio of 50 : 50, we have in view rural areas only. For urban areas government will have to fix the share of contribution after taking into consideration the economic resources of each area and the Government's own contribution will, of course, be much lower than 50%. Again, when we talk of Government's contribution of 50% we are referring to the total financial contribution to be made by Government in the whole province. However, the funds sanctioned for each local body will have to vary according to the economic resources of that authority. Some areas are rich and others are poor and unless the variations are kept in view in the determination of grant-in-aid, there is a real danger of backward areas or communities being further neglected. To avoid such contingencies, many countries have adopted what is called "equalization funds". In our case, all that is necessary is that Government should fix the grant of each local body after taking into consideration its means. Moreover, Government should revise its basis of grants after every five years. We have suggested that buildings and equipment should be provided free by the local community. As resources vary considerably, Government will have to provide an 'equalization fund' to finance grants to those which are unable to make even this minimum contribution.

63. In most countries, independent schools maintained by private effort exist side by side with State Schools. Some also receive aid from the State. We hope that private philanthropy will be forthcoming to maintain such schools.

64. We also recommend that all important organizations, such as factories, mills, workshops, railways, and irrigation works employing more than 50 persons should maintain their own primary schools. The costs involved should be regarded as costs of production.

65. We find that the provision of compulsory education figures in the constitution of many countries. The importance of implementing our proposal for universal primary education is so great that we believe it must receive continuous attention at the highest levels of Government. For this reason we recommend the creation of a committee in each province with the Governor or a person designated by him as Chairman and with five or six members. This Committee should deal primarily with the question of the generation of additional funds to make compulsory education effective within the period suggested by us. The members of the Committee should include at least two persons with experience and knowledge of revenue laws and taxation structure. The Committee should also include the representatives of the Education Department. We further recommend that a small co-ordinating committee should be set up at the highest level with the Governors of the Provinces, the Central Minister of Education, and a few others. The task of this Committee

will be to review and co-ordinate the work of the provincial committees. Our educational needs will require for a long time to come the generation of additional funds, and we are suggesting in the appropriate chapter the creation of a section in the Ministry of Education to deal with such problems, to be headed by an officer with experience and knowledge of revenue laws and taxation structure. This officer should work as the Secretary of the Central Committee. He would also be available for advice to the provincial committees. We further recommend that the co-ordinating committee should submit to the President an annual report on the progress of work. As primary education is a national objective, it must figure in the discussions at the highest level.

IX. Administration :

66. It is also necessary to consider the administration of primary schools. Formerly these schools were administered by the local bodies but during the last few years the administration has been taken over by Government in all the regions except the former Panjab.

67. On the devolution of power in 1921, education was entrusted to the control of local bodies. So long as the District Boards had official Chairman, administration was reasonably good. On their replacement by elected Chairman, there was a set-back in the administrative machinery. The deliberations of the local Boards were more often influenced by personal and party considerations than by the merits on the case being discussed.

68. Owing to continued maladministration, the Governments of the various Provinces in Pakistan successively took over control from local bodies, except in the former Panjab. However, the teachers of the schools in that region have been petitioning Government year after year to take control into its own hands.

69. After a review of practice in other countries, we find that there is no one general pattern of administration. In some countries while finance is wholly or partly raised by the local community, the administration is in the hands of the Government. In others, the authority supplying finance also controls administration. In view of the unhappy experience of the last 25 years we do not think that it would be wise to entrust the administration of the primary schools to local bodies again. We feel that the administrative pattern should be one which is both simple and efficient and does not involve any cumbersome administrative machinery. In this connection we would like to offer the following suggestion.

70. In West Pakistan, the administrative unit should be the District. As far as East Pakistan is concerned, there are only 17 Districts and these would be too large for efficient administration. The Sub-Divisional level would therefore appear to be a more appropriate unit, though this matter should be left to the East Pakistan Government to settle. At the level of this administrative unit there should be a small Primary Education Committee with the Deputy Commissioner or his nominee as Chairman and with the District Education Officer and three others as members. This Committee should administer primary schools and have the power to

employ, promote, or transfer teachers. The cadre would thus be localized but the salaries would conform to the pay scales as admissible in Government services.

71. To facilitate administrative work, the District (or Sub-Division in the case of East Pakistan) should be further divided into smaller units, with a population of approximately 10,000. The Primary Education Committee should delegate some of their powers to a local committee consisting of a Chairman and two others to be nominated by the Deputy Commissioner. These powers might include the authority to transfer the teachers within the local area, linked with certain other disciplinary powers. The precise delegation of powers between the union and the District Committee should be so made as to ensure efficient administration.

72. A somewhat similar pattern will have to be devised for urban areas.

73. Every primary school should have a local Advisory Committee, on which the parents should be represented. We are not in favour of giving the Panchayats any administrative powers, but we would like them to be closely associated with the school either in parent-teacher associations or on the Advisory Committees.

74. It will be seen from the above pattern that the major share of administrative responsibility is placed at the level of the Union and District or Sub-Division level. So far the Provincial Education Departments are concerned, they will deal with academic matters, including the drawing up of the curriculum, the prescription of syllabuses, provision of text-books, as well as the training of teachers. We have suggested in the chapter on Administration that the school inspectors should pay more attention to academic than to administrative matters.

PRIMARY EDUCATION

SUMMARY OF RECOMMENDATIONS

II. Introduction :

1. Compulsory education at the elementary stage is indispensable for skilled manpower and intelligent citizenship. For this at least eight years schooling is required. (3, 5, 6).

2. The target should be to achieve five years' compulsory schooling within a period of 10 years and eight years' compulsory schooling within a total period of 15 years. (8).

IV. Objectives of Primary Education :

3. Primary education should be designed to :—

- (a) make a child functionally literate ;
- (b) develop all aspects of his personality, moral, physical, and mental ;
- (c) equip him with the basic knowledge and skills required of an individual and a citizen and prepare him for further education ;
- (d) arouse a sense of civic responsibility, love for his country, and willingness to contribute to its development ;
- (e) develop the habits of industry, integrity, and curiosity ; and
- (f) awaken a liking for physical activity and sports and games. (21).

V. Curriculum :

4. The curriculum should be adapted to the mental abilities of children aged five to ten and related to the normal situations they are faced with in everyday life. It must be so designed as to develop the basic skills in reading, writing, and arithmetic, a liking for working with one's own hands, and a high sense of patriotism. (23, 24, 25, 26, 27).

5. Teaching methods should, as far as possible, use the activity or project approach, and teachers should show initiative in the use of local materials as teaching aids. (31).

6. Religious education should be a compulsory subject throughout the primary stage. (33).

7. Due emphasis should be placed on the teaching of the national languages. (33).

8. The school should open with an assembly at which the national anthem is sung and, at regular intervals, the national flag is hoisted and talks on patriotism and character building are given. (33).

VI. Facilities :

9. School buildings and furniture should be simple, inexpensive, adapted to local style and building materials, and yet neat, clean, and in good repair. Plans for buildings should be standardized. (36).

VII. Teachers :

10. A survey should be conducted immediately to determine the number of teachers required to implement the programme of compulsory primary education, and the training facilities needed to make up the deficiency. Refresher courses should also be arranged for untrained or insufficiently trained teachers. (42, 43).

11. Women are ideally qualified to teach in primary schools, particularly in the first three classes. Steps should be taken to recruit women teachers by making terms of service acceptable to them and providing residential accommodation. (45).

12. The salary scale of the primary school teacher should be sufficient to give him a reasonable standard of living, and consideration should be given to the question of providing him health, insurance, and retirement benefits. (48, 49).

13. Consideration should also be given to the recognition of a teacher in society. For example, a few teachers of outstanding merit should be presented to the President or Governors at some appropriate function every year, and wide publicity given to this. (50).

VIII. Finance :

14. Funds required for compulsory primary education are so large that special efforts by Government as well as the community will be needed to raise them. They should be raised as follows :—

- (a) Land, building, furniture, teaching materials, and residential accommodation for teachers should be provided by the community. Government may, however, give financial assistance to local communities in "special" and economically backward areas. (36, 56, 62).
- (b) for maintenance—
 - (i) 50% by a special tax on a District basis in West Pakistan and a Sub-Divisional basis in East Pakistan; and
 - (ii) 50% from the general revenues of the provincial Government. The grant to each District or Sub-Division should be fixed after taking into consideration its means, the requirements of backward and poor localities being given due weightage. (57, 62).

15. Compulsory primary education must receive continuous attention at the highest levels of Government. A Committee should be set up in each province with the Governor, or a person designated by him, as Chairman, with five or six members, including two persons with experience and knowledge of revenue laws and taxation structure, to deal with the question of additional funds required for compulsory primary education. (65).

16. To review and co-ordinate the work of the provincial committees, another committee should be set up at the highest level, comprising the Governors of Provinces, the Central Minister of Education, and a few others. The Central Co-ordinating Committee should report annually to the President on the progress achieved. (65).

17. Educational needs will require for a long time to come the generation of additional funds, and a section in the Ministry of Education headed by an officer with experience and knowledge of revenue laws and taxation structure should be created to deal with such problems. (65).

IX Administration :

18. The administration of primary education should not be entrusted to local bodies. It should be organized on a District basis in West Pakistan and a Sub-Divisional basis in East Pakistan, through Primary Education Committees, each committee consisting of the Deputy Commissioner|Sub-Divisional Officer or his nominee as Chairman, and four other members including the District|Sub-Divisional Education Officer.. (69, 70).

19. The District|Sub-Division should be further divided into units of 10—15 thousand people, with an area or union committee consisting of three members nominated by the Deputy Commissioner|Sub-Divisional Officer, to which certain powers, such as the transfer of teachers, should be delegated. (71).

CHAPTER 6

WOMEN'S EDUCATION**I. Introduction :**

1. There can be no doubt that the women of Pakistan are striving to play their part in raising the status of themselves, their families, and the nation. Our women have already won for themselves an enviable reputation at the highest levels of our national life as well as in international circles. We are confident from the spirit which the women of Pakistan have shown in such achievements as those of the All-Pakistan Women's Association that they can assume a role of great importance in the consolidation and development of the country if their dynamism and dedication can be nurtured and their efforts guided into those channels where they can be of the greatest service.

2. To realize this potential women need education just as Pakistan needs educated women, and it is the purpose and nature of this education that concerns us here. It should be clearly understood that the reform and expansion of education at all levels dealt with in other chapters of this report have been proposed with the needs of both boys and girls, men and women in mind. There are, however, special problems involved in the education of women and it is these unique considerations that have caused us to consider the education of women in a separate chapter.

11. Primary Education :

3. We have emphasized elsewhere that primary education must be made universal and effective because of the direct contribution it will make to national development and also because it is an essential step in achieving the complete literacy of our population. In both these respects the education of women is fundamental. Unless a mother is educated, there will never be an educated home or an educated community. At the same time primary education is the first essential step in the educational programme through which we must secure large numbers of women for teaching, medicine, nursing, and a wide variety of careers and professions. It is essential that the foundation of education for women be firmly consolidated and that the facilities available for girls' education be in every respect equal to those available for boys. We recommend, therefore, that in the future expansion of primary education the facilities provided for girls should be equal both in quantity and quality to those provided for boys.

4. It has been strongly urged on the Commission that the teaching of the early stages of primary education should be entrusted largely to women. Women, it is argued, are best suited emotionally and temperamentally to developing the character and capabilities of the child during these early years. The Commission is in general agreement with this view and hopes that as women teachers become available, it will be possible for them to undertake the teaching of at least the first three classes. As the number of women primary teachers grows, it should be possible for primary education to become increasingly co-educational.

III. Secondary Education :

5. It is from the middle stage of education (Classes VI to VIII) onwards that girls' special needs begin to find expression. At this stage, the curriculum should be designed to fit them more particularly for

their future role. Apart from common subjects, special subjects for girls such as elementary homecraft, including needlework, tailoring, weaving, cookery, and home and child care should be introduced. It is particularly important that these subjects be taught in a practical manner designed to develop the elementary skills required by a wife and mother.

6. At the end of the Class VIII a major diversion should take place. At the present time the only form of education available to girls at the completion of middle school is teacher-training or academic studies designed to prepare them for admission to college. The Commission recommends, therefore, in the interest of the girls and of the nation that they should be guided either "in to secondary schools or into vocational schools offering courses suited to their aptitudes and interests.

IV. Vocational Schools :

7. The pattern of vocational schools described in the chapter on Technical and Vocational Education should include two to three-year courses in such subjects as child nursing, tailoring, photography, typing, textile printing, commercial cooking, hospital aid, interior decoration, and similar subjects. At the end of these courses girls would be able either to enter employment or go on for advanced training. Particular attention should be given to the training of young women to prepare them to be of immediate value to the defence services in times of emergency. This should include courses in typing, stenography, and other aspects of secretarial work as well as specific skills in the operation of telecommunication and electronic equipment and the driving of light and heavy motor vehicles.

V. High Schools :

8. The Commission believes that the pattern of education for both boys and girls should be similar at the high school level although the diversification of subjects would be based on the particular aptitudes and interests of each. As we have already suggested in the chapter on Secondary Education, all our high schools should become as quickly as possible multi-purpose institutions offering a common core of subjects that would be compulsory for all students and a variety of elective courses designed to prepare students for careers. The common core of subjects in girls' high schools should include instruction in home economics covering first aid, nursing, craft, needlework, dietetics, child psychology and household management.

9. The diversification of subjects in the multi-purpose high school should provide for courses in commercial subjects such as typing, stenography and bookkeeping; food technology including dietetics, catering and canteen management; textile design and interior decoration. Diversification should be possible both in Classes IX and X and in Classes XI and XII with the programme in the upper two classes broadening the scope and developing higher standards of competence in the various fields.

VI. Diversion after Matriculation :

10. In addition to the diversification of courses within the secondary school at the higher secondary level there should also be a number of opportunities for girls after Class X in a number of professional and specialist fields. Particular mention should be made of the need to develop courses in midwifery and in child health and nursing.

VII. Higher Education :

11. Girls who complete the secondary stage of education should have a number of opportunities open to them either to continue their education to a higher level or to enter into such careers as are suited to their ability, interest and aptitude. We would like to give particular emphasis to the development of certain areas of higher education for women, and hence will discuss each of these in some detail.

12. *Home Economics*.—The science of home economics is of special significance in the education of girls and women. In its more general aspects it provides a young woman with the knowledge, skills, and attitudes that will help her to be a more intelligent and effective wife and mother, and improve the health, happiness, and general well-being of her family. In its more specialized aspects it offers career opportunities in an increasing number of jobs and professions. For these reasons we have already suggested that the study of home economics should be part of the core of compulsory subjects in the secondary schools and that many of the specialities associated with home economics should be opened up for study through the diversification of courses at the secondary level.

13. The implications of this emphasis upon home economics for the higher education of women are varied. It will be necessary to have a large and continuing supply of teachers of home economics for the secondary schools and these must be trained in higher educational institutions. Moreover there will have to be opportunities for advanced study in many of the special fields of home economics mentioned above. Colleges of Home Economics have recently been established at Karachi, Dacca, and Lahore, and we hope that post-graduate studies will soon be established at these centres to provide lecturers for additional home economics colleges and departments of home economics in other colleges and universities and to serve as research centres for the study of home economics education as well as the various phases of the science of home economics.

14. A high priority must be given to the opening of departments of home economics in women's colleges and in the universities and the establishment of additional institutions designed specifically for the study of home economics. These departments and colleges would not only become the primary sources of teachers of home economics in the secondary schools, but they would also provide training to qualify women for positions as child welfare workers, dietitians and nutrition experts in hospitals, schools and large organizations, supervisors in Village AID programmes and the public health services, directresses of women's hostels, nursery schools supervisors and in a number of positions in private industry in the areas of food processing, textile design, and home decoration.

15. The basic consideration in framing the course of study in home economics should be the orientation of the subjects to conditions found in our country. Although familiarity with the use of electric stoves, refrigerators, and other modern appliances is important, these are not widely used in Pakistan and hence cannot form the basis for improving the diet and home life of the average woman. Students should learn about the problems of nutrition, clothing, health, and child care within the context of life in Pakistan and seek their solution not in the use of expensive imported equipment but through means that are generally available and acceptable to our people.

16. *Other professional Colleges.*—So far the professional education of women has been limited mainly to teaching and medicine. We have noted with much gratification that there is an increasingly strong desire among women to enter all of the professions and we wish to encourage these ambitions in every way possible. In addition to teaching and medicine, we believe that qualified women should be admitted to programmes in law, nursing, commerce, art, engineering, architecture, and all other professional colleges on equal terms with men.

17. Commercial colleges and departments should make special provision for the training of women in secretarial work and office management for which they are particularly well fitted and also offer them opportunities in the fields of book-keeping, accountancy, and commercial banking. Not only can women fill important positions in these fields in business, industry, and government, but the expanded programmes of vocational education in the secondary schools will require well-trained and fully qualified teachers in typing, stenography, book-keeping and other commercial subjects.

18. A special word should be said about the profession of nursing. At the present time Pakistan has only one trained nurse to every 30 hospital beds as compared with the international standard of one nurse to every three or four beds. Although we cannot aspire to meet this standard in the immediate future, we can certainly hope to achieve a better ratio. This would involve the production of about 600 trained hospital nurses each year. To allow for nurses in auxiliary hospital services, teaching positions, administrative posts, and home nursing the actual intake of prospective nurses would have to be considerably larger than this figure.

19. *Higher Education in the Fine Arts.*—In a subsequent chapter we discuss at some length the importance of music, drama, art and the crafts in the life of the people and in the future of Pakistan. For reasons that are not entirely clear these humanizing subjects have never received the attention they deserve in our schools and particularly in our colleges and universities. Not only do these subjects permit the creative expression of the individual but they can be important vehicles for developing poise, self-confidence, individuality and an appreciation of good standards of design and craftsmanship. We should not overlook, either the contribution they make to wholesome entertainment which should and will become an increasingly important part of the leisure time of the family and the community. We are mentioning the desirability of including these art studies in women's colleges not because we believe that they are the exclusive concern of women but rather because they are more likely to become a permanent part of family and community life if they are part of the educational experience of women and also because many young women have a particular interest in and talent for these subjects. We would urge, therefore, that departments of arts and crafts be established as rapidly as resources and the availability of qualified teachers permit in all of our women's colleges and in the universities. •

VIII. Sports and Extra-curricular Activities :

20. The Commission has recommended elsewhere that physical training, sports and games should be a compulsory subject in all educational institutions at every level. The reasons for this recommendation hardly

need extensive discussion. Regular and reasonable physical exercise promotes the health of the individual, and good health is essential for effective study and productive work. Moreover, it is generally recognized that organized programmes of sports and games can make a fundamental contribution to the development of character, co-operative effort, and the poise and confidence of the individual. If physical training is well-organized and well-taught, it can also develop in the individual skills and interests which she will continue to use as a source of personal enjoyment and as a means of maintaining personal health and vigour. Clearly all of these reasons are as compelling for women as for men.

21. A compulsory programme of physical training and sports and games at all educational levels imposes some specific responsibilities on girls' schools and women's colleges. First of all each school and colleges should have adequate facilities in terms of playing fields for the development of an adequate physical training programme. They must also have a well-qualified and specially trained directress of physical training. This in turn requires that women's colleges offer courses of studies through which these teachers can be trained.

22. We wish to make specific mention of the role that can and should be played by some of the national organizations for girls and young women. The Pakistan Girl Guides Association has done some extremely good work and should be actively encouraged. Every effort should be made to include the junior section of the Girl Guides (the Bluebirds) in the extra-curricular programme of the primary schools and both the Girl Guides and the Junior Red Cross among the extra-curricular activities of the secondary schools. These activities are particularly helpful in developing the spirit of service to the community and the nation that must be deeply engrained in all of our women. In the Chapter on Military Training we have recommended the establishment of a women's wing of the National Cadet Corps. Units of this wing should be incorporated in all of our women's colleges.

IX. Accommodations for Girls and Women :

23. A large majority of the young women attending colleges and the universities and a smaller percentage of those enrolled in secondary schools will come from rural areas or from distances too great to permit them to live at home and come to the institution. We cannot urge too strongly the necessity for providing clean, comfortable, and wholesome facilities at these colleges and schools for the housing and service of meals for women students.

X. The Obligations of Women :

24. Our discussion up to this point has dealt with the educational opportunities that must be afforded to our girls and women if they are to be equipped to assume their responsibilities in the home, the community, and in the productive life of the country. We would like to make a few observations on the unique obligations that women have for the development of the country and for the improvement of our national life.

25. In their role as wife and mother, women have the fundamental responsibility for the development of the character of their children. In our introduction to this report we pointed out that the ultimate solution

of our educational problems, and of most of our national problems as well, rests upon our ability to create a revolution in attitudes. Although our educational institutions must play an important part in this process, the educational system cannot accept complete responsibility. The child is in school only for a fraction of the time and he enters the primary grades with many of his habits already formed and many of his attitudes moulded. The mother must accept the primary responsibility for what the child is when he enters school, and it is imperative that she inculcate in him from his earliest days those habits and attitudes which are essential for the development of the country and the well-being of its citizens. She must impress on him the importance of cleanliness, truthfulness, honesty, co-operation, and a desire to learn and improve himself and his community.

26. Her second obligation is to take an active interest in the school and what it is trying to accomplish. She should join the parent-teachers association and the school advisory committee. At the same time she should keep in close contact with the teacher and supplement the work of the school in the home. Although the father cannot be completely relieved of his own responsibility for the upbringing of the children, most of their time will be spent with their mother, and it is she who must accept the obligations that her position in the home imposes upon her.

27. Women have a particularly important role to play in adult education. Because of their general interest in community life and the fact that they have a little more time to devote to activity outside the home, women are in a position to undertake a number of projects for community development such as nursing, literacy teaching, classes in tailoring, weaving, and cooking, and participation in programme of civil and military defence. We are recommending that every candidate for a university degree should participate in an organized programme involving manual labour or teaching adults or training in civil defence. The Commission hopes that women, particularly the educated among them, will willingly participate in such programmes.

WOMEN'S EDUCATION

SUMMARY OF RECOMMENDATIONS

1. The reform and expansion of education proposed in other chapters of this report have taken into consideration the needs of both boys and girls. (2).

II. Primary Education :

2. In the future expansion of primary education the facilities provided for girls should be equal to those provided for boys. (3).

3. Women are temperamentally well suited to develop the character and capabilities of young children. The teaching of young children both boys and girls in the first three classes should therefore be appropriately entrusted to them, as qualified women teachers become available. (4).

III. Secondary Education :

4. It is from the middle stage of education (Classes VI to VIII) onwards that girls, special needs begin to find expression. While most of the subjects will be common to both boys and girls, subjects of particular interest to girls such as elementary homecraft, tailoring, weaving, cookery and home and child care should be introduced. (5).

5. After Class VIII there will be the first major diversion and girls should be guided either into secondary schools or into vocational schools offering courses suited to their aptitude and interests. (6).

IV. Technical and Vocational Schools :

6. Technical and vocational schools should provide courses of training for women taking up careers. These should include those which will be of value to the defence services in times of emergency, such as secretarial work, the operation of telecommunication and electronic equipment, and the driving of light and heavy vehicles. (7).

V. High Schools :

7. The diversification of subjects in our high schools should provide for courses in commercial subjects such as typing, stenography and book-keeping ; food technology including dietetics, catering and canteen management ; textile design and interior decoration. (9).

VII. Higher Education :

8. *Home Economics*.—A high priority must be given to the opening of departments of home economics in women's colleges and in the universities and to the establishment of additional institutions, designed specifically for the study of this subject. The basic consideration in framing the course in home economics should be the adaptation of the subjects of study to conditions found in our country. (14-15).

9. *Other Professional Colleges*.—Commercial colleges and departments should make special provision for the training of women in secretarial work and office management for which they are particularly well suited. They should also offer them opportunities in the fields of book-keeping accountancy, and commercial banking. (17).

10. In the profession of nursing which has its own special appeal, there is a national challenge to increase the ratio of nurses to hospital beds. (18).

11. Departments of Art should be established as rapidly as resources permit in all of our women's colleges and in our universities. (19).

VIII. Sports and Extra-curricular Activities :

12. Each girls' school and college must have its own playing field and a well-qualified trained directress of physical training. The extra-curricular programme should include Girl Guides (the Bluebirds) in the primary schools and both the Junior Red Cross and Girl Guides in the secondary schools. (21-22).

IX. Accommodation for Girls and Women :

13. Clean and comfortable accommodation and wholesome food should be provided at college and schools for the women boarders. (23).

X. The obligation of Women :

14. In their role as wives and mothers, women have a fundamental responsibility for the development of the character of their children and for their education at home and at school. (25-26).

15. Every candidate for a university degree should be required to participate in an organized national programme which, in the case of women, would involve nursing or adult education or training in civil or military defence. (27).

CHAPTER 7

ADULT EDUCATION

I. Introduction :

1. That the people of a country are its greatest national asset and responsibility is now a universally accepted fact. If they are literate, healthy, and productive, they are a vital and economic asset to the whole nation. If they are illiterate, diseased, and unproductive, they become a national liability. It is in realization of this fact that a large part of the world which has embarked on industrialization or the mechanization of agriculture gives high priority to the liquidation of illiteracy as the essential step towards economic, social and agricultural development. To raise the productive level of a country we need the kind of worker who as a literate can be fully efficient in production. The wealth of the Western World has increased many times since literacy was liquidated at the turn of this century. The credit for this must be given partly to the presence of an educated agricultural and industrial working population. It is, therefore, wrong to assume that expenditure on adult education is an unproductive investment; its returns, even in an economic sense, are substantial and permanent.

2. Pakistan lies in a zone that embraces 75% of the world's illiterate population. According to the census of 1951, 86.2% of the population of Pakistan was illiterate. The removal of illiteracy, then, is a matter of crucial importance to Pakistan and one which will require a tremendous effort.

3. Slightly more than four-fifths of our illiterate population live in villages. The problem of education in Pakistan is, therefore, the problem of the village. Almost everywhere in Asia the town lives on the village. The town appropriates to itself, despite its relatively small population, the major economic, cultural, administrative, and public amenities. The share of the village is poverty, disease, and illiteracy. In this context, the main justification for a supreme effort to plan, harness, and develop the resources of an agricultural country is the need to improve the rural areas, and, therefore, the principal stage for educational and cultural development should be the village. It is here that the bulk of the illiterate population lives, made up of both children and adults.

4. There is general agreement that children need education, but the question whether we can go very far with their education without also educating the adults is rarely faced. Yet it is common experience that once pupils leave the village school, they become assimilated by the community rather than function as progressive forces for its enlightenment. Many forget in a short time even the skills of reading and writing. The reason is not only that the atmosphere of the village discourages reading, but also the fact that little reading material is available to sustain a positive interest. In spite of their schooling, children tend to retain the old prejudices, attitudes, and way of life. The education of the adult is clearly important even to ensure the continued literacy of the children.

II. Objectives :

5. There is no uniformity in the definition of adult education in different countries of the world. Traditionally it has been associated

with the teaching of literacy, but with the introduction of universal school education in many parts of the world and the consequent liquidation of illiteracy in those areas, this definition has lost its force. There is a tendency to give a broad based content to adult education so as to make it a life-long pursuit for a literate person. But literacy still remains a major pre-occupation in countries where the school system has not yet been fully developed. Pakistan is one such country. The goal of achieving universal primary education is still some distance away, and about half of the children of primary school-going age who remain out of school add to the illiterate population of the country. The position is further aggravated by a high percentage of pupils who join the primary schools but do not complete the five-year course.

6. However, the aim of adult education cannot be anything other than the general aim of all education, i.e., the development of the individual to his full capacity in his personal and social life so that he may be a happy, healthy, and useful citizen and able to make his optimum contribution to the community in which he lives. The content of adult education may vary with circumstances, but it should include the barest elements needed to achieve the objective mentioned above. At its minimum, the programme must take into account the needs and problems of the group as well as group methods of solution. Starting with the pressing needs and problems of the community concerned, it may, in the long run, include skills of reading, writing, speaking, listening, and calculation; vocational skills; domestic skills; skills of self-expression in arts and crafts; personal and community hygiene; simple and practical science; civics; economics; spiritual and moral development; and training in reasoning and scientific thinking. Before these broader aims can be achieved, the population must be made literate, and therefore the development of a literate population must be the immediate primary objective of adult education in Pakistan.

III. Organization :

7. During the last 30 years a number of campaigns have been launched to eradicate illiteracy, but only very limited results were achieved. A subsequent review of these campaigns drew attention to four main defects :

- (i) The campaigns were never able to generate sufficient sustained motivation for the illiterate to become literate.
- (ii) The administrative and organizational arrangements were unsuitable.
- (iii) Teaching techniques were defective.
- (iv) There was not enough suitable reading material for the new literate.

8. A few years ago the Government of Pakistan established the programme for Village Agricultural and Industrial Development with the primary objective of advancing social and economic development in our villages. Since literacy was a prerequisite to real social and economic progress, it was decided to include the organizational aspect of the literacy effort as a Village AID responsibility. Since this involved specialized knowledge, an educational sector was set up at one of the Village AID training schools staffed by seconded members of the Department of Education and experts from UNESCO. The function of this educational sector

has been both to train literacy teachers in the use of the best methods and to produce teaching aids and reading materials for new literates. In setting up the new programme the defects of earlier campaigns were carefully considered and efforts made to correct them. In the following paragraphs we have discussed briefly the thinking upon which this programme is based and the measures that have been taken to correct former weaknesses.

9. *Motivation.*—An adult's incentive to acquire education is the most potent factor in the success of an adult education programme. This is essentially a process of voluntary engagement. The forces which generate momentum must come from within although promoted from without. Hence, there is need for proper motivation.

10. In Western Europe the movement for adult education on a mass scale originated as a result of its Industrial Revolution and as the by-product of parliamentary democracy. When a community changed from an agricultural economy to an industrial one, involving the operation of costly machines and the understanding of technical methods, it could not leave these in the hands of an illiterate peasant population. The new economy demanded an operator who could handle machines with care and use them for better production. Hence arose the need for universal literacy. There the motivation was economic and utilitarian. Moreover, as the Western countries progressed with the evolution of parliamentary democracy, broadening the base of the franchise until it was a universal adult franchise, the next inevitable step was the adoption of a policy of 'education for all'.

11. Under the conditions obtaining in Pakistan the religious motivation is also important. The injunction to seek knowledge wherever it can be found has unimpeachable authority. Among the successful centres there were some which depended entirely on voluntary attendance and in which the teacher was the Imam. He commanded the respect and confidence of the people as religious leader, and this increased his effectiveness as a teacher.

12. However, with the exception of those religious leaders who could attract followers to their classes, the interest in education cannot be maintained indefinitely except through a programme that gives the people good reasons for becoming literate, reasons which can be tested on a practical and economic plane. A man learns best when his interests are keenest; and his immediate needs usually determine his interests. The basic motivation for literacy under the new programme is therefore an economic one.

13. *Leaders and Instructors.*—The experience of other countries as well as that gained in previous campaigns in the present regions of Pakistan has demonstrated that the key to the success of any campaign lies in leaders and instructors who are devoting their full time to this work and who have received through training in the modern techniques of adult education. Very often in the past leadership has been entrusted to enthusiastic but busy people whose devotion in the initial stages of the campaign succeeded in giving it momentum. The momentum slowed down as soon as more urgent affairs claimed their time, and, in spite of their devotion to the work, their lack of training often led them into committing mistakes even though they were inspired by the best of motives.

14. Different approaches have been tried in the countries of Asia, Latin America, and the Middle East; some prefer the "team approach" on the ground that no one person can be competent in all the fields concerned with adult education,—health, home and family life, rural development, literacy, and so forth. Others argue that where the villager is approached by a number of persons representing different government departments, he becomes confused and loses interest. Some countries have used children, youth, or the local school teacher for their adult education campaigns with varying success. A study of these experiences shows that the best results are obtained when a comprehensive approach is made to the problems of village improvement, if possible through a single agency. One of the reasons for this is that one cannot easily departmentalize the problems of a village; its questions of health are closely linked with those of education and agricultural practices, while these in turn affect family life, the use of leisure time, and personal habits. It is for this reason that the programme of literacy has been entrusted to the Village AID whose concern is the total improvement of village life in all its aspects.

15. Under the Village AID, workers are trained at a number of centres in all phases of village life and community development. One of these centres has been developed with an education wing and staffed by officers on loan from the Education Department. At this centre a selected group of those who have already been trained as general Village AID workers are given an additional six months training programme in the techniques of teaching illiterates and in the production of teaching materials and follow-up literature for the new literate. This programme has been organized by a staff of UNESCO experts who have had experience of similar problems in other countries. These specially-trained literacy workers organize and teach literacy classes in the villages and at the same time, through short courses train additional part-time literacy teachers from the villages. As this programme expands, it is anticipated that the combined forces of trained literacy workers and part-time literacy teachers will cover the entire area.

16. Since this approach has worked very well, we recommend that the effort be intensified and we would particularly urge a greater use of women and Imams as literacy teachers in the village. Women generally have more time to devote to this work, are quick to grasp the economic advantages of literacy, and are more likely to put in the sustained effort required for success. Similarly the Imam will have time to devote to this task and through his position as a religious leader can exert a powerful influence on the villager. Moreover, he is able to add the compelling motivation of religious injunction to the social and economic motivation discussed earlier.

17. *Reading Material.*—In our introductory analysis we noted that one of the reasons for failure in literacy campaigns in the past, both in Pakistan and elsewhere, has been the absence of sufficient and attractive reading material of a supplementary and recreational nature which would carry the new literate to a higher level of reading skill and to the point where he enjoyed reading for pleasure and had available to him a range of material in periodical and book form which would cater for his interests. We devote a later section of this report to the problems involved in producing and making available this material in Pakistan. We wish to stress here that this material needs to be properly graded

and prepared by authors and publishers who understand the technical problems involved and that it should be made available to the villager either through libraries or at a price he can afford. Through the printed word the villager can learn to improve his farming practice, can acquire knowledge of hygiene, develop vocational skills, and widen his own cultural and social horizons. It must be noted that at least in the initial stages the production of sufficient quantities of pamphlets, journals, newspapers, and books for the new literate will require to be subsidized by Government and partially produced on Government operated printing presses. Every encouragement, however, should be given to commercial publishers who wish to produce for this group of readers material which will contribute to the aims of an adult education programme and which would be sold at a price the villager can afford.

18. The distribution of the material produced will have to be channelled through community centres, mobile vans, mosques, and village schools, and it may prove necessary for Government departments to supplement this by bulk purchase of suitable material produced by other agencies and channel it through the same distribution machinery. Experiments in the use of mobile book shops to reach the more remote areas should be tried, as well as the full use of such voluntary agencies as APWA.

19. It must be remembered in this context that the new literate consists not only of the adult who has followed a literacy course but also the child who has just left school. We have seen that there is real danger of the school child, on whom we have expended public funds, relapsing into illiteracy once he returns to the village community and no longer has available the stimulus of books and teachers. One step we can take to avoid this waste of public effort, and to use the child as a progressive element in the community, is to make available to him a range of attractive and suitable reading material after he has left school.

20. Under the existing literacy programme the education wing of the Literacy Training and Production Centre is fully equipped to design, edit, and produce as an experiment both teaching aids and literature for the new literate. In this manner our present literacy effort has attempted to meet the problem of the lack of adequate and suitable reading material for those who have just become literate.

21. *Techniques of Adult Education.*—The two most powerful supplementary aids for literacy work, the efficiency of which has been proved in other countries are the film and the radio. Television is also being used in a number of countries for literacy teaching and rural development work, and may sooner or later find a place in Pakistan. Certainly the radio is being successfully used at the moment in a number of Asian countries to assist the teacher and stimulate interest among villagers in literacy and general community development work. For the moment the most feasible approach will be to use community listening sets, installed perhaps in the village school or in the home of one of the village leaders, which would be available for community listening at appropriate times during the week when special programmes for the villagers are broadcast. It has been demonstrated in other countries that literacy teaching can be done by radio in conjunction with appropriately prepared teaching primers, and under the guidance of partially trained village workers.

22. Films are of great value in the promotion of interest preparatory to the launching of an adult education campaign or the formation of study or discussion groups. They also have great usefulness in maintaining interest once a group has started work and in widening the horizons of villagers to encompass problems of national and international significance. As a teaching tool, the filmstrip is probably of even greater worth and is less expensive in equipment and production and easier for the teacher to use.

23. We recommend that after preparatory study and the preparation of appropriate materials a greatly increased effort be made in the use of the radio for group teaching in villages, and that through the use of mobile film vans and the distribution of the necessary equipment and films to village workers, a vastly expanded and sustained effort be made in the utilization of these visual aids.

24. Other visual aids to the teacher such as flannelgraphs, posters, and charts can do a great deal to assist him in his task, and all efforts should be made for their production and distribution. In addition, we should experiment with the use of such things as a farmer's calendar which he can pin on the wall of his hut, which will look attractive and at the same time give him some simple advice on planting, harvesting, and other aspects of farming practice.

IV. The Programme for Literacy Education :

25. The proposal in our chapter on Primary Education designed to achieve effective universal primary education will be a major step in the elimination of illiteracy throughout the country. If we insist that each child who joins school must continue for the full five-year programme, and gradually include all primary-aged children in this effort, it will mean that no new illiterates will be entering the productive (12—40) age group.

26. The major effort to eradicate illiteracy should continue to be the programme operating through the Village AID with professional assistance from the education departments. We recommend that this effort be intensified and that a centre similar to the Literacy Training and Production Centre at Lalāmusa be established in East Pakistan with an education wing for the training of adult literacy workers and the production of the necessary reading materials.

27. In the urban areas we believe a similar programme should be undertaken by the Department of Social Welfare, again with appropriate professional assistance from the education sector.

28. There are several other possible approaches to literacy teaching that have been tried in other countries and may prove to be valuable supplements to our present efforts. These include :

- (a) *The use of school children as teachers in an effort to make their parents literate.*—We understand that this approach has been used in China with some success. Although our traditions may prevent the child from exercising much influence on his father, the mother may respond readily. Our proposals have included a period in the school time-table for compulsory work experience at the school level and this might be included as one acceptable form of work.

- (b) *The use of undergraduate college students as adult literacy teachers.*—Our previous recommendations have included a compulsory period of three months' work experience for all college students, to be secured during the summer vacations. One of the optional kinds of work experience has been defined as the teaching of literacy to adults.
- (c) *The use of one literate adult to teach another under the "each one teach one" approach.*—This method would seem to hold considerable promise if it is possible to determine the kinds of motivation that are necessary to impel one adult to teach another for a period long enough to achieve the desired results.

29. We recommend that the Ministry of Education take steps to set up pilot projects in each of the approaches suggested above and, if the results of these projects justify it, large scale programmes should be developed in those approaches which prove successful.

ADULT EDUCATION**SUMMARY OF RECOMMENDATIONS**

1. The development of a literate population must be the immediate primary objective of adult education in Pakistan. (5—6).

2. The programme to eliminate illiteracy must be based upon economic motivation, carried out by teachers specially trained in the teaching of illiterates, and provided with sufficient suitable literature both for teaching and for the use of the newly literate (9—20).

3. The major effort in eradicating illiteracy in rural areas should continue to be made through the present programme in which Village AID provides the organizational and technical arrangements, and the education section trains adult literacy teachers and supervises the production of teaching aids and reading materials. The number of both the specially trained adult literacy workers and part-time literacy teachers from the villages should be increased, and greater use should be made of women and Imams as part-time literacy teachers. An education wing for the training of adult literacy workers, similar to the one now operating in West Pakistan, should be established in East Pakistan. (26).

4. A similar programme for urban areas should be instituted through the Department of Social Welfare with professional assistance from the Education Department. (27).

5. The Ministry of Education should establish pilot projects to experiment with the possibility of (a) using school children to make their parents literate, (b) using undergraduate college students as part-time literacy teachers in fulfilling their requirement for compulsory work experience, and (c) using literate adults in a system of "each one teach one". The experiments should be reviewed at an interval of two or three years to determine the feasibility of introducing these methods on a large scale. (28-29).

CHAPTER 8

PHYSICAL EDUCATION, SPORTS AND GAMES

1. It is universally accepted today that education should be concerned with the all-round development of the individual,—intellectual, emotional, social and physical. These aspects of his life are interrelated, and a child who is emotionally upset, or a social misfit, or unduly susceptible to physical fatigue cannot do his best intellectually. It is for this reason that physical education, related to the whole personality of the child, is to be regarded as part of the integrated life and programme of the school, not as merely an added activity. Physical education has become a much more inclusive field than calisthenics and drills; It includes provision for promoting the health of the school-child, for guarding him against illness and weakness, and for the correction of defects and compensation for handicaps. It must concern itself with matters of hygiene and public health. It must also relate physical activity to the pupils' association with his classmates, and to this end it develops a programme of games and sports to encourage such desirable social characteristics as a sense of fair play, team work, and fortitude and endurance for the sake of a cause. For these reasons physical education must be accepted as having an exceedingly important place both in the programme of education in all schools and ultimately, therefore, in the development of the nation.

2. The importance of physical education has been recognized by us, in theory at least, in that it is accepted as a compulsory subject in our schools for the first twelve years. In practice, however, we have failed to make adequate provision for its effective implementation. The result is that in many instances the physical education programme has been played down and even ignored. Our children have been growing up with under-developed bodies often with inability to participate in competitive sports, and in general (except for cricket) with an indifference to their enjoyment even as spectators.

I. The Teacher and his Training :

3. The first step in bringing our physical education programme into line with our theories about it concerns the teachers of physical education. This relates to the attitude of the whole educational system towards him, whether he is to be regarded as a second rate, additional member of the staff, or whether he is accorded status in training, emoluments, and respect equal to that given to teachers of arithmetic, language, and science. If his work is restricted to drill and calisthenics, then perhaps he need be only a drill-master; but if it extends to the scope we have suggested and which we all (in theory) accept, then at any given level he should have at least the equivalent in training of the best qualified teacher of the "academic" subjects. For the primary classes where it is not possible to provide separate teachers of physical education, it may be necessary for us to ensure that primary school teachers are given courses in the essential elements of physical education. In secondary schools the teacher of physical education should have qualifications in his subject equivalent to those of his fellow teachers in other disciplines. As far as possible, the teacher of physical education should also have had regular education qualifying him to work as a regular class or subject teacher when he reaches the less active years of life. In any case

he must have had education and training equivalent to his colleagues on the school staff. In addition, he must delight in games and sportmanship and have special traits of character and leadership to ensure his beneficial influence on pupils of all ages.

4. It is clear that up-to-date colleges of physical education are indispensable to the production of such teachers of physical education. Considering the fact that we have at present an entirely inadequate number of physical education teachers and that such teachers in their own field have a somewhat shorter span of effective service than other teachers, our facilities for their training would seem to need considerable expansion over the present programmes in the Colleges of Physical Education at Dacca and Lahore. The staffs of these institutions need to be enlarged and assisted by specialists from other countries for a limited period, as has been suggested for other aspects of education requiring technical expertise. The director of physical education in a large secondary school or college should have at least his bachelor's degree as a basis for the appropriate course of professional training in the college of physical education. It must be borne in mind that the teacher of physical education today must have a considerable background of scientific knowledge to render his services effective. He must be able to lead in outdoor activities and games and must know rules and be able to referee and umpire; he must also understand the basis of good health, correct posture, sanitation, and public health at least in so far as it relates to the pupils in his care. Therefore, the colleges of physical education must be well-organized, well-equipped, and well-manned if they are to produce the leaders in this field needed throughout the nation.

II. Facilities and Equipment :

5. The best trained teachers, however, will be restricted in their achievements if the facilities provided for the programme of physical education are inadequate. We must admit that it will not be possible for us to give all of our schools the grounds and the building accommodation and equipment that would be called for in an ideal programme of physical education. Our schools in the larger towns and cities cannot be provided with large playing fields, for such open spaces are in most cases not available, and the acquisition of property for demolition would hardly be feasible and certainly prohibitively expensive even in consideration of the urgent need of such facilities. Therefore, in the older urban areas we shall have to be content with providing each school with a simple but well planned gymnasium, which can of course be of great value as the centre of the physical education programme. At the same time, wherever there is a new development or a satellite town, space must be reserved and guaranteed for playing fields, gymnasiums, and office and teaching space for the physical education programme. This provision has indeed been included in many of the plans for urban developments : the maps have shown the reserved spaces ; but all too often we have deceived ourselves by allowing these spaces to be sold by the time the scheme is complete. In the future there must, we are convinced, be legislation to ensure such playing fields as part of any residential development and that their cost as well as the cost of buildings be included in that of the development as a whole.

6. We would reiterate the physical education teacher's need for basically adequate equipment if he is to function effectively. He must

like every other teacher, have a place where he can meet pupils outside of classes, but beyond this he must have a certain amount of office space and equipment separate from the school office in which to maintain the physical and health records of the pupils, to conduct periodic physical examinations with such professional medical assistance as may be provided, and in which to meet teams and other groups of students for discussion.

7. A good deal of sports and gymnasium equipment is made in our own country and can be obtained without difficulty. It is most desirable, however, that items of equipment which must be imported be brought in without difficulty and without the imposition of heavy import duty. Most of the equipment needed is locally available, however, and every school should be required to keep and properly store the basic items needed in the programme. It is not necessary that the equipment for physical education should be elaborate or expensive; but it must be basically sound and fitted to the needs of the specific programme and age level.

III. Meals at School :

8. For a variety of reasons we should recommend that there be provision in school premises for the preparation and serving of simple meals under hygienic conditions, and for a place in which to eat these meals and the lunches that pupils may bring from their homes. This will make it possible for the children and their teacher to have a longer working day at the school and also provide nourishing food for boys and girls. Where there is no other dietitian in the school, the physical education department should properly be qualified to supervise this programme for the provision of lunches at moderate cost.

9. *International Sports.*—In the international playing fields Pakistan has won for herself a fine reputation in cricket, hockey and squash, though in other sports we may have lagged behind. The importance of sportsmanship and achievement in international competition can hardly be over-emphasized, and participation in such sports is an excellent method of fostering international understanding and of winning international prestige. Our sportsmen deserve to be known as ambassadors of goodwill and peace among the nations. This is why great effort should be made through our educational system to arouse national interest and enthusiasm for physical achievement to the end that our standards in all sports and games may be raised.

10. In the past our schools and colleges have been the nurseries of athletes and sportsmen. It was as they went to school that those who won later fame on the playing fields received their physical stamina and skills. They excelled in national and international competition because of their training in school and college sports, and we have had many generations of men and women go through our educational system who may not be championship players, but who have the necessary skill and coordination to enable them through their adult years to make fruitful use of leisure hours in outdoor games. In the current generation and in generations to come this value must be conserved. Our schools and colleges must once again take the lead in producing sportsmen. It is for this reason, in addition to the needed physical benefits to all students, that we are concerned to have an adequate, up-to-date programme of

physical education in our schools. The minds of our children and the intellects of our youth will develop best when they have sound, strong bodies in which to grow.

V. Conclusions :

11. We would re-emphasize the importance of physical education in our school system. The Departments of Education and the Boards of Secondary Education must see to it that every school understands and acts upon this emphasis. The teachers of physical education must have the full support of headmasters and managements. They must also have the enthusiastic cooperation of their colleagues on the staff, and their fellow teachers should normally have an assigned share in the supervision of games and sports, so that these may be regarded as a definite part of the programme of the school and not a mere extra.

PHYSICAL EDUCATION, SPORTS AND GAMES

SUMMARY OF RECOMMENDATIONS

1. Physical education, as it influences the whole personality of the child, should be regarded as an integral part of the life and programme of the school. (1).

I. The Teacher and his Training :

2. In primary schools, it is not possible to provide for separate teachers for physical education. Training institutions for primary school teachers should, therefore, include in their programme the essential elements of physical education. (3).

3. In secondary schools and colleges the teacher of physical education should have professional and academic qualifications in his subject equivalent to those of his fellow teachers in other disciplines. (3).

4. The staff of the colleges of physical education at Dacca and at Lahore needs to be enlarged and assisted by specialists from other countries for a limited period. (4).

II. Facilities and Equipment :

5. Our schools in the larger towns and cities cannot be provided with large playing fields, for such open spaces are not easily available there, but they should have at least a simple but well-planned gymnasium.

6. To provide for this need in new developments or satellite towns, the Government must undertake legislation to reserve and guarantee the provision of adequate playing fields and gymnasiums.

7. Teachers of physical education should be given necessary facilities for conducting periodic physical examinations and for maintaining health records of the pupils. (5-6).

III. Meals at School :

8. There should be provision in school premises for the preparation and serving of simple meals under the supervision of the department of physical education. (8).

9. *International Sports*.—The importance of the quality of achievement in international sports can hardly be over-emphasized. Every effort should, therefore be made throughout our educational system to arouse national interest and enthusiasm in this field. In the past, our schools and colleges have been nurseries of athletes and sportsmen, and they must once again become so. (9-10).

CHAPTER 9

RELIGIOUS EDUCATION**I. Introduction :**

1. Religion has been the most vital civilising force in the history of mankind and religious faith has given to human life directions towards righteousness and piety. Reverence for the Almighty curbs egotism and vanity and fosters sobriety and humility and the sense of wonder deriving from religion has stimulated search into the unknown and is at the root of all scientific knowledge. Religious commandments have moulded human life and inspired men to deeds of unsurpassed sacrifice and courage. Love for the divine has ennobled the passions of man, created appreciation of the beautiful, and inspired him to produce works of art to satisfy his aesthetic sense. Religious affinity has cemented individuals into harmonious groups with an ever-widening sense of brotherhood, leading ultimately to the concept of the universal brotherhood of man. Religion has thus prompted man to the noblest of ideals and aspirations. It has embraced all aspects of his life and is the force which can weld society into a harmonious whole.

2. As education aims at the integrated and balanced development of the whole man body, mind, and spirit—it must create an appreciation of the fundamental moral and spiritual value that constitute the foundations of civilization, towards which all human endeavour should be directed. In performing this task a system of education must benefit from the humanising influence of religion, which broadens sympathies, inculcates tolerance, self-sacrifice, and social service, and removes artificial distinctions between man and man. Reverence for God and the Prophets has an ennobling effect on the soul and opens the mind to an appreciation of the unity of mankind.

3. The inspiration to be drawn from religion with its sublime moralising effect has special significance in Pakistan. Several religious faiths are professed and practised in our country and their teaching should be confined to those who profess them. The great majority of our population being Muslim, the teaching of Islam assumes particular importance. Indeed Pakistan, to be true to her soul should take inspiration from Islam, its principles, and ideology.

4. Religious education should do nothing which would impair social and political unity in the country. On the other hand, it should strengthen this unity by developing a spirit of tolerance and by trying through mutual understanding to bring humanity together. Religion is not to be presented as a dogma, superstition, or ritual. Sectional and sectarian differences which are likely to impair national unity should find no place in the teaching of religion in schools.

5. Such a presentation of religion will be in line with the true spirit of Islam which inculcates human brotherhood, justice, equality, and the dignity of man as man, and lays stress on the importance of practical goodness, piety and virtue.

6. The intellectual and moral development of children varies with their age and with the stages of education. Religious education should, therefore, be given in a manner which suits the requirements of each stage. We shall discuss each of these in turn.

II. Classes I to VII :

7. We believe that Islamiyat must be a compulsory subject of study for all Muslim students for the first eight years, that is, in the primary and middle stages. The syllabus and teaching should be on the following lines :—

- (i) All students should learn to read the Holy Quran (Nazira).
- (ii) Learning of Kalima and the Suras used in Namaz should be compulsory for all Muslim children. A few more Suras from the Holy Quran should also be memorized.
- (iii) Stories and parables from the Holy Quran, the life of the Prophet and from Muslim history, lore and literature should be included in the books on Islamiyat. They should illustrate moral and spiritual lessons and should be presented in simple and attractive language.
- (iv) Collections of "Ayats" from the Holy Quran, inculcating social virtues and practical goodness, may be introduced in the syllabuses and taught with translation. Students should be able to recite such "Ayats",

The Commission notes that the question of the religious instruction of Muslim pupils in certain Christian schools is already under consideration of the Government at the highest level.

8. Throughout these early years personal inspiration of the teacher and the parents is an important influence on the formation of character. The teachers should, therefore, exemplify a sense of duty, honesty, integrity, and human dignity, and be able to inspire the child to emulate him.

9. In large number of primary schools there are only one or two teachers for all five classes and it is, therefore, not possible to provide specialist teachers. Nor, indeed, is this desirable. Every teacher of a primary school should be qualified to teach Islamiyat which should be included as a compulsory subject of study in the training of teachers for primary classes.

III. Classes IX to XII :

10. Religious instruction should be offered as an optional subject in *Classes IX and X*.

In *Classes XI and XII* it should become a component part of Islamic Studies which should be offered as an optional subject.

IV. Higher Education :

11. The function of a university is to advance knowledge and promote research. Our universities should, therefore, produce scholars of the highest quality in this discipline as in others. The standards of scholarship should compare with the highest to be found in the best Universities elsewhere.

12. To undertake research and present Islam in its true spirit, university teachers should have a thorough knowledge of comparative religion and world history to be able to bring out clearly and forcefully the important role religion has played in the social, economic, and political life of mankind. They should be able to interpret Islam and present it as a body of thought that can meet the challenge of modern times and fulfil the requirements of a modern scientific society. This implies that there should be a gradually increasing critical appraisal of Islam as a code of practical life in the light of the Holy Quran and the life of the Prophet. The original liberal and rational Islam should be properly interpreted and applied to the problems of modern life.

13. Students should be given a full understanding of the Holy Quran and Hādith. Islamic jurisprudence, Muslim History, and Muslim philosophy should form integral parts of the syllabus.

14. Scholars and teachers of Islamiyat should develop an objective outlook and understand the spirit and methods of modern science, natural as well as social, which should be freely applied in the interpretation of Islam. It would be desirable that teachers of Islamic studies, besides having an adequate knowledge of their subject in its various aspects, should have up-to-date knowledge of at least one of the social sciences such as economics, philosophy, sociology, psychology, or political science and be able to appreciate the principles underlying the spirit and methods of natural sciences.

V. Research :

15. In addition to the university teaching departments there should be an Institute of Islamic Studies in each wing of the country, with its own up-to-date library, research scholars, and arrangements for the publication of research.

16. A large number of research scholarships should be awarded for undertaking research on different aspects of Islam both in the universities and the research institutes. At the same time university teachers of Islamic studies should be sent abroad to visit Muslim and non-Muslim countries and gain first-hand knowledge of current trends of thought.

17. We attach the greatest importance to bringing Islamic learning closer to life. As a religion of nature, Islam has nothing to fear from scientific discoveries and inventions. Advancement of scientific thought is but a revelation of the laws of nature leading ultimately to a control of these forces and their utilization for human aims. This is a task that Islam enjoins upon all Muslims to perform. The Holy Quran attaches importance to reflection on nature and history. This is a recognition of the ever-widening vista of human knowledge and an interpretation and application of the basic principles of Islam in varying forms in different environments. The spirit of Islam is eternal and ever-lasting, and this must find new expression and realization in every age according to natural demands.

18. The great task that lies ahead of all Islamic scholars is to bring together knowledge of the fundamental Islamic values and of modern sciences. The educated community must understand Islam and learn to respect and observe its values. Those who make Islam their special

study must not only acquire a thorough knowledge of the Arabic language but should also be conversant with modern sciences, both natural and social, and should constantly interpret the demands of the times so as to meet the changing needs of practical life. They should aim to make Islam a living guide to modern practical problems in the light of ever-expanding human knowledge.

19. There is a great awareness in the West of the need for study of Islamic thought, history, civilization, and culture. Pakistan offers a most suitable country for such studies. It is, therefore, necessary that a few of our universities and research institutes should develop high standards of attainment to attract the most gifted scholars from abroad.

RELIGIOUS EDUCATION

SUMMARY OF RECOMMENDATIONS

1. Religion has been the most vital civilising force in the history of mankind; it broadens sympathies, inculcates a spirit of tolerance, self-sacrifice and social service and removes artificial distinctions between man and man. Religious education should, therefore, be an integral part of the educational system. (1—3).

2. Several religious faiths are professed and practised in our country, and their teaching should be confined to those who profess them. Religious education should do nothing which would impair social and political unity in the country. It should foster human brotherhood, justice, equality, and the dignity of man and emphasize the importance of practical goodness, piety and virtue (4—5).

3. The teaching of religion should have three clear-cut stages :—

(a) The compulsory stage, (b) the optional stage and (c) the research stage.

(i) Islamiyat should be a compulsory subject of study for all Muslim students for the first eight years, that is, in the primary and middle classes.

(ii) It should be an optional subject in classes IX and X.

(iii) (a) In Intermediate Classes it should become a component part of Islamic Studies which should be offered as an optional subject.

(b) At the university stage Islamic Studies should be an optional subject. (7—10).

IV. Higher Education and Research :

4. Universities should produce scholars of the highest quality in Islamic studies, capable of interpreting Islam and presenting it as a body of thought that can meet the challenge of modern times and fulfil the requirements of a modern scientific society (11—19).

5. An Institute of Islamic Studies should be established in each wing. (11—19).

6. As there is a growing desire in the West for the study of Islamic thought, some of our Universities and Islamic Institutes should develop high standards of scholarship to attract gifted scholars from abroad.

CHAPTER 10

MILITARY TRAINING IN EDUCATIONAL INSTITUTIONS

1. Ever since the establishment of Pakistan, there has been a nationwide demand for the introduction of military training in our schools and colleges. Provincial Legislative Assemblies and other public bodies passed resolutions for compulsory military training, and the country's press gave the proposals an enthusiastic and unanimous support. Indeed, few other national projects have received such popular and whole-hearted backing as that for the introduction of military training in our educational institutions.

2. There is little doubt about the immense benefits of such training to the youth of the country. Its value as a means of developing leadership, character and the sense of devotion to a cause, particularly the defence of the country, is universally recognized. Most of the advanced countries of the world have long had in their universities and colleges full-fledged Cadet Corps which are considered major national assets. UTC in the UK and ROTC in the USA have played a significant role in the history of the two countries. During World War II, several times more reserve officers were trained in the Cadet Corps of the American colleges and universities than were regular officers at the military academies.

3. But quite apart from its value in an emergency, military training is a wonderful discipline in itself. It inculcates self-control and poise, promotes team spirit and develops a sound character and healthy outlook on life. Indeed, military training deserves in its own right to be included as a regular part of the programme at the universities and colleges.

4. Some attempts have been made in the past to introduce military training into our educational institutions in the form of Junior Cadet Corps and UOTC. At present the Junior Cadet Corps scheme is in operation in both wings and the UOTC in East Pakistan only. But owing to their very restricted scope and faulty organization, they have made little impact on the youth of the country. In fact, they have proved to be hopelessly inadequate to our national needs.

5. In view of the importance of military training, and the popular demand for it, the Ministry of Defence has prepared a scheme for a National Cadet Corps. We have given this scheme careful consideration and support its acceptance though we believe it to be far too modest, due no doubt to financial reasons.

6. For the implementation of this scheme we suggest that the present Junior Cadet Corps and UOTC should be absorbed into a new organisation to be known as the National Cadet Corps. The aim of the "NCC" should be to develop in our youth sound character, a sense of comradeship and the ideal of service. It will form the basis for a reserve of potential leaders for diverse spheres of national life, particularly in the armed forces of the country.

7. The proposed National Cadet Corps should be controlled and administered by the educational authorities in close co-operation with the Defence Department. A Directorate of the National Cadet Corps, headed by an officer of the appropriate rank, should be set up. The Director

should have wide financial and administrative powers so as to be able to implement the scheme without undue interference from or dependence on others. He should be assisted by a staff composed of officers of the three services. An Advisory Committee should also be set up consisting of officials of the Education and Defence Departments at the highest level, to watch the progress of the scheme and to assist the Director in the efficient running of the Corps.

8. The Corps should be organized on a voluntary basis, with an initial strength of 10,000 Cadets in each wing, to be gradually expanded in subsequent years depending on the availability of funds.

9. There should be separate wings for the Army, Navy and Air Force. Schools and colleges should be earmarked for raising units of various wings. Each wing should be further divided into three divisions namely the Senior Division, the Junior Division and the Girl's Division. The Army wing should absorb the present UOTC and the JCC.

10. The Cadets should undergo training for four hours a week in colleges and universities followed by an annual camp of 15 days for the Senior Division and 10 days for the Junior Division. The Cadets should do two years in the Junior Division and three years in the Senior Division. They should be given certificates A, B and C after the successful completion of two, four and five years' training respectively.

11. In addition to the regular military officers and other personnel seconded to the NCC Units, professors, teachers and selected students of the Senior Division should be commissioned in the Corps after a period of training with the three Armed Services.

12. We feel that women have as much an interest in defending the country in peace and war as men, and we hope that the Girls' Division referred to in paragraph 9 above would form a substantial part of the Corps.

MILITARY TRAINING IN EDUCATIONAL INSTITUTIONS

SUMMARY OF RECOMMENDATIONS

1. Military training should be recognized in itself as a discipline which inculcates self-control and poise, promotes team spirit, and develops sound character and a healthy outlook on life. (3).

2. A National Cadet Corps, on the lines of the scheme already prepared by the Ministry of Defence, should be established. (5).

3. The Corps should be administered in close co-operation with the Defence Department through the National Cadet Corps Directorate, staffed by the Armed Forces personnel. A high level Advisory Committee consisting of the Education and Defence Departments should be set up to watch the progress of the scheme. (7).

4. It should be organized on a voluntary basis with an initial strength of 20,000 Cadets and gradually expanded. (8).

5. It should have separate wings for the Army, Navy, and Air Force and should include separate Divisions for boys and girls. The Army wing should absorb the present UOTC and the Junior Cadet Corps. (9).

6. Since women have as much interest in defending the country as men, the Girls' Division should form a substantial part of the National Cadet Corps. (12).

CHAPTER II

THE ARTS AND OUR CULTURAL HERITAGE

I. Introduction :

1. The nation's literature, her arts, and her museum collections are a part of her cultural wealth. Education is concerned not only with vocations and the productive industry of her citizens, but also with all those pursuits which have a refining and civilizing influence on their lives, with the æsthetic and emotional areas as well as the utilitarian and rational.

2. In addition to this fundamental and basic value, a nation's cultural activity is a means of filling the leisure of its citizens. Even the humblest have some leisure, but not all the activities of leisure are of equal worth. The educationist is concerned with avoiding the wasteful use of leisure, for the employment of leisure should be re-creating, constructive, and enriching. The activities we have in mind are those which are educative because they involve some degree of discrimination, and the exercise of taste and judgment. In them we arrive at and express in some measure our appreciation of what is beautiful and good.

3. A person's education in this direction relates not to body of knowledge that he learns at school or college, but rather to a basis and a foundation that he acquires in the course of his development, by which he can appreciate the excellent and distinguish it from the inferior. The entire literature, art and archæology of a people cannot be learned at school : there is too much of it. The educational institution, however, does teach these as subjects and is concerned with the kind of books, paintings, plays, music and architecture which are being produced in the country. Here, therefore, we give some attention to certain of these cultural interests, especially as they affect our educational programme, and to the problems of their development.

II. Literature in Pakistan :

4. Literature mirrors the spiritual, intellectual, and emotional life of a people and for many reasons must be regarded as the most important part of their cultural heritage. With the written word as its medium, literature is the memory of the human race, spanning the centuries as the most permanent of the records of mankind.

5. In a new State like Pakistan, which at the same time has a very ancient cultural heritage, literature has a most important function as the repository, of the annals, and ideals of the past and as the means of expressing the peoples' hopes, aspirations and their desire for unity and strength. The State has an important role in the establishment of conditions which should be conducive to literary development. State action can help to evolve an intellectual and social climate favourable to literary creation, which in its turn should foster among the people the ideals of high endeavour and pride in noble achievement.

Great literature promotes universal values such as truth, beauty, goodness, justice, equality, and human dignity, which create idealism, surmount sectional and sectarian interests, and inspire the individual to

make sacrifices for the ideals he holds dear. Encouragement of literary effort by the State can go far in helping to realise these values in popular literature and in broadening the outlook of the masses.

6. Literary activity implies not only outhorship but also a body of readers. A poet and thinker writes mainly to express himself, but he also expects that what he writes will be read and so he has in mind the people who will read his writings for enjoyment and instruction. If readers do not value his book and do not busy the author gets no encouragement and recompense and cannot in these circumstances go on writing. As soon as a manuscript is prepared for communication, it becomes subject to the mechanism of the book industry. Literary activity in the modern world is therefore directly related to the book industry. It is obvious that if books are not printed and circulated, the writer will be deprived of the chief incentives, acclaim and financial reward. It follows, then, that literary activity and the book industry are interdependent and must work in harmony. Their healthy growth presupposes an intelligent environment where cultural value exist along with "book awareness". Where, however, the mechanism of printing, publishing and distribution of books is not effective or breaks down, it is incumbent on the State to take necessary steps and provide a working substitute for the broken link so that the flow of books from the authors to the readers continues unhampered. At the same time, State agency should devise ways and means to create among its citizens an awareness of books and a desire to read them.

7. Before independence there was no publishing industry worth the name in the region now constituting East Pakistan. The position has gradually improved, but reading materials of requisite quality and quantity for various levels of readers are still in short supply. The position is somewhat different in West Pakistan, where Lahore has contrived to retain its status as a big publishing centre for Urdu literature. Allowance must indeed be made for difficulties faced by immigrant publishers and authors, and the great confusion following in the wake of unprecedented migration of millions of people the majority of whom, if literate, read Urdu.

In the confusion and turmoil of the first decade, little effort was made by the various components of the book industry, writers, publishers, book-sellers, and printers to solve their common problems in an organized manner. Publishers were mainly interested in the lucrative business of text-books, religious reading materials, sex and the fiction of violence. Printing plants were generally obsolete, and trained personnel was scarce. There were difficulties in the supply of printing paper, and the Copyright Act was ignored with impunity. We are not surprised, therefore, that several writers of talent moved to other professions because they could not gain even a modest living from writing.

8. There is an increasing feeling in the country that our authors should have more adequate encouragement. Our provincial and central Governments have realized the weight and importance of this demand, and have promoted the formation of writers' guilds and Boards for the advancement of literature. These bodies have actually been set up with the co-operation of noted writers and with grants-in-aid from the Government, though it may be that this financial aid has been inadequate

for the real requirements of these national organizations. During the last few months the present Government has done much to encourage authorship, with prizes for good books and the grant of pensions to indigent families of deceased writers. The highest titles have been awarded by the Government in the fields of art and literature. There is reason, therefore, to expect a good response from the literary profession. Some time must pass before the writers' organizations accomplish an appreciable amount of work and through trial and error evolve traditions and procedural precedents suited to prevailing conditions. We may reasonably expect that such groups, besides serving the literary ideals of the day, will also address themselves, through the medium of their art, to problems of national reconstruction and common welfare. We believe that much good can come of the Government's encouragement of these associations of authors and Boards for literature and that it should be intensified in practical form.

9. Organized efforts will be required both to supply the reading material that the country needs and to create among the public a demand for books on such a scale as will make their production economical. Unless there is this demand for books, the profession of authorship will be on an uncertain base. Until people begin to buy books for themselves, and this increased demand enables the book trade to bring out cheap editions, book production may have to be subsidized and conditions created under which libraries can perform a more useful function than at present. There has been little recent expansion of our libraries, and we have spoken elsewhere of the inadequacy of our school libraries. Children who have stopped their formal school education, young people who have gone into their chosen careers, adults who have been made literate,—all alike need a steady supply of interesting reading material that will give them a taste for more. To this end the production of useful and attractive books at attractive prices will for some time to come have to be subsidized.

10. We have come to the conclusion that it is necessary to set up an effective agency—

- (i) to provide information to the authors and the public on what books are in demand and what books are available,
- (ii) to assess existing facilities with regard to the printing, marketing, and transportation of books,
- (iii) to assess the availability of books for various levels of readers,
- (iv) to determine and apply standard rates of royalty for writers and discount rates for book-sellers, and
- (v) to examine the question of removing trade barriers for unobjectionable books between Pakistan and other countries.

It should be feasible to set up a National Book Centre with branches at Dacca and Lahore on the lines of the plan submitted by UNESCO to the Government. The estimated cost of this scheme is about two lakhs of rupees a year, and it is suggested that half of this be borne by the book industry and half by the Government.

We are not aware of any such assessment or survey having been made and believe that appropriate agencies to undertake such a survey do not exist. The result has been duplication and waste inseparable from

isolated, un-coordinated efforts which have adversely affected the interests both of authors and publishers and of the reading public. Some pioneering work in this field has been initiated under UNESCO's Project on Reading Materials in South Asia, but this will have to be supplemented to meet the demands of the situation in Pakistan. It is impossible to build up a national culture without a strong foundation of books. The national campaign for the eradication of illiteracy must be accompanied by the provision of adequate reading material. As the number of schools increase, the supply of suitable books should increase likewise. A text-book is only a key to the treasure of knowledge on a particular subject and cannot replace other books on that subject. Educationists cannot afford to limit their attention to text-books alone, because these are only a small part of the vast store of reading material which forms the foundation of civilized life.

11. Because the publishing industry does not yet seem ready to undertake the large scale provision of books needed for the general reader, the establishment of a National Book Trust deserves consideration. This body would undertake, in both wings of the country, the printing and publishing in large quantities of inexpensive books (other than text-books) for various kinds of readers. The National Book Trust would normally commission authors or authors' guilds to produce the sort of books required at various levels in different parts of the country. To make a beginning in this direction, the Trust would need a loan of about Rs. 5 lakhs from the Government, repayable as the books are sold, and in addition it would require two printing plants at a cost of about Rs. 20 lakhs from a foreign source. The Trust may function in the first instance for 10 years, at the end of which period its future may be considered in the light of the conditions then obtaining in commercial publishing.

12. For the promotion of national literature we recommend :—

- (a) That Government continue and expand its encouragement of literary works of merit by awarding prizes, titles and pensions ;
- (b) That Government continue to recognize and subsidize more liberally the Boards for advancement of literature and associations of authors like the already formed Writers' Guild ;
- (c) That the Copyright Act be made effective in the protection of the interests of authors ;
- (d) That a National Book Centre be established as suggested above ;
- (e) That a National Book Trust be set up for an initial period of 10 years for the publication of large number of inexpensive books ;
- (f) That the book trade be encouraged to set up at its own expense
 - a corporate body to arrange the distribution of books in the country ; and
- (g) That local bodies be required to maintain from their own funds and, in collaboration with social and welfare agencies, active libraries and reading rooms for the benefit of the

public ; and that adequate provision be made for the training and proper conditions of service of librarians for such centres.

III. The Fine Arts :

13. It is unfortunate, perhaps, that the same word is used in the English language for the skills of a craftsman, for the non-science subjects of the non-professional curriculum in our universities, and for the representation of beauty in the written and the spoken word, in sound and shape and movement. It is with this last that we are here concerned, the fine arts, the arts of painting and calligraphy and design, of architecture and music and dramatics. Literature, too, in its various forms is a fine art and we have just discussed its special problems in our country.

14. When we speak of the fine arts we speak of excellence, for the painting or the poem ceases to be art when it does not approach this level of quality. Excellence, however, is a relative term, and the excellence of an artistic work is determined ultimately by the accumulated opinion of many people, may be over the centuries, but certainly by people whose capacity to appraise is generally held in esteem. The individual values it, in the last analysis, because he likes it ; but he may not always initially like what really is the best nor what the skilled authorities on the subject—the critics tell him is the best. In many of the arts there has been built up a sustained body of expert opinion in favour of certain criteria of judgment, and those, while subject to modification from generation to generation, determine the distinction between good art and indifferent art.

15. People learn to appreciate good art not primarily by learning a set of rules about it, but rather by being surrounded by examples of good art. Learning the rules and the criteria of the critics will help, for these will enable the individual to function as his own critic. It is the responsibility of education to help the people of a nation to value what is good, enduring, and ennobling in the various forms of art. It can teach them the rules ; but what is even better, it can plan to give every person some opportunity to see examples of the excellent in fine art. Good art is not necessarily the most popular, and there must be conscious effort to counteract the degrading effect of degenerate art forms. The arts, like so many other potentially good things, can be wrongly used, and examples are probably unnecessary of the vicious use of pictures, dramatics, and fiction.

16. The majority of the inhabitants of Pakistani towns and villages are not in fact surrounded by much that can be called good art. This is increasingly true as the old handicrafts, which were almost invariably cast in beautiful forms and displayed noble colour harmonies, have given place to cheap, mass-produced wares from abroad. The reasons for this are the lack of leisure caused by pressing poverty, poor housing conditions so inimical to the æsthetic sense, and the unrelenting struggle against want which is the lot of many. But whatever the reasons, it is important to our national development that we do not neglect the cultivation of beauty. We have two or three basic recommendations to make in this connection.

17. First, at all stages of our educational process, attention should be paid to the creation and appreciation of beauty. In our schools and colleges attention must first be paid to providing students with surroundings, from the architecture of the buildings to the lay-out of the gardens, that give them beautiful things to look upon. The pictures on the walls and the music played for physical drill should alike be carefully selected. Then, too, in the form of good reproductions of pictures in films and musical records, examples of the finest art of the nation and of the world should be made accessible to every child.

18. Secondly, there should be exhibitions of fine art in its several forms,—permanent exhibitions in larger towns and cities, travelling exhibitions for the country areas. There is a wealth of apparatus now available which by sight and sound can now bring through films and tape-recordings the best of art from any where in the world to any community with an electric supply line. Exhibitions of actual paintings are far better, of course, than copies of paintings, but the reproductions are far better than nothing at all. Not everyone can enjoy the vivid experience of watching the folk-dances and hearing the folk-songs of a distant people, but to see them in a moving picture with a sound-track is the next best and can be of very great value in widening the individual's cultural horizon, especially when he can watch it and hear it under the guidance of a good teacher.

19. This brings us to our next recommendation, that all our teachers must have some training in the appreciation of art, especially painting and music, during the course of their education; and that those who are to be teachers of art be raised in qualification and status from the second-rate instructor known as the 'drawing master' to one who is able to stimulate in students a personal liking for the best, who will teach appreciation as well as the rudiments of artistic performance, who will use imagination, whether he is giving instruction in mechanical drawing or in the use of a creative art medium, to relate art to life and to other subjects of the school curriculum, to history, to language, and, not least, to engineering.

20. It has already been recognized that art is a concern of industry, but it has not always been admitted that regard for artistic values in industrial production will depend ultimately on the educational process to which the industrial designer and worker has been subjected. We urge, therefore, that departments of fine art be developed and strengthened in our universities and colleges, particularly in our women's colleges, for it is the home-makers of the nation who can best instil the values of order and beauty in the consciousness of the rising generation. We would like to emphasize the fact that we have a rich tradition of indigenous arts and art-crafts. Such Pakistani products as pottery, textiles, lacquer work, wood-carving, and metal ware are recognized as things of beauty all the world over and are keenly sought by collectors and interior decorators in all countries. The modes of loveliness that our handicrafts depict are grounded in the depth of human awareness, and the universality of their appeal places them in the category of the approved artistic creations of mankind. Art education in the country should, therefore, make full use of indigenous motifs. Objects of indigenous manufacture should be liberally used for the decoration of class-room interiors in educational institutions.

21. We would also recommend the sustained support of our Art Councils and Societies of Artists whose function is related to the artistic aspect of the educational process. These will be strengthened by the extension of art teaching in our schools and colleges; and they will stimulate teachers and students of art by their examples and their achievements in artistic creation.

IV. Museums and Cultural Education :

22. We refer first of all to museums of the accepted kind, archæological museums which have a two-fold function, to store and care for physical examples of the life of past ages, and to display these relics in such a way as to attract, entertain, and instruct the on-lookers. Because of popularity of museums and their effectiveness in education, other kinds, of museums have come into being in recent years—museums of natural history, museums of science and industry, and the like. They have their place, and we recommend that all such ventures be given support by the Government as valid and valuable for education. Zoological gardens likewise have their educational function and must be maintained to the best of our ability. We would also very much like to see established in Pakistan one or more of the planetariums which have proved such excellent devices for explaining the relations and movements of the planets and stars.

23. It is proper that our people should have pride in the history of our ancient land and that they should know of achievement of our predecessors in these plains and mountains. The spade of the archæologist has unearthed rich information in the shape of relics preserved in the dry climate of West Pakistan at Taxila, at Harappa, at Mohenjodaro, and at other places. It is the task of the scientific digger into the secrets of the past to arrange these relics, to study them, to apply to them the illuminating methods of archæology; but someone else must then take them, preserve them, and make them available to others. This is the work of the curator of a museum, not that of a mere caretaker, but that of an educator who can bring the results of these explorations into ancient history to children, to the common man, to the educated person, and also to the specialist in archæology.

24. The staff of a well-organized museum should be able to make its contents interesting and instructive to all kinds of persons, for the visitor to a museum comes to see and to learn. He learns more quickly and effectively by looking at a well-arranged display than he can by hearing a lecture or reading an article. The museum staff have to adapt their arrangements and their explanations to the age and educational maturity of their visitors, but for persons of every age the visit to the museum can be rewarding and can leave deep impressions on the mind.

25. The museum should normally work in very close association with the school system and its teachers to provide the services for which it is specially equipped. It should be possible, for instance, for a teacher to borrow certain exhibits for class-room use in connection with a lesson in history or literature. Such loans could not, of course, be made in the case of precious and irreplaceable items, but in most cases pictures, charts, and models can be made available to the school for short periods. In any

case, the teacher can be greatly stimulated by himself visiting the museums before he attempts the interpretation of a phase of history for his pupils.

26. Again, the museum can serve the school by arranging special programmes at the museum, when a class from the school is given a guided tour of certain areas with the opportunity of learning their symbolic significance in the evolution of history. The stimulus of such directed visits to the museum will long be felt and will be of much greater value, of course, than the random observations of an unguided child. Such tours can be supplemented on occasion by visits to the actual site of archæological excavations and by the organization of amateur collectors, clubs and similar activities.

27. We have been describing what we realize is a somewhat idealized view of the use of museums in our educational system. The fact is that we do not have enough museums to make effective use of them in education. There are only 24 museums in Pakistan. Nor do our museums have the staff nor the financial foundation to undertake the full services suggested. This calls for serious consideration, for it is of fundamental importance that at least in our larger urban centres there should be truly excellent museums and museum services. Its resources will not permit the setting up of many good museums, let us have at least a few good ones, and in each wing of the country certainly one of national status to serve as the repository of the finest of our archæological treasures and as the model for all other museums in the area.

28. We recommend, too, the appointment of an Advisory Committee to guide the policy of our museums and to work in close relation and understanding with the Departments of Archæology and Education, to promote the educational significance of our museum services.

29. The promotion of museums of high quality will be welcomed by scholars in this country and all over the world and should draw many to study ancient history here, and many others who, without claim to scholarship, would be most interested to see the projection of the story of ancient man in archæological finds skilfully displayed and documented by experts. To achieve museum displays of this standard we shall need to recruit to our museums staff persons who, besides possessing high academic qualifications, should also be equipped with specialised training in the techniques of museum maintenance and administration.

THE ARTS AND OUR CULTURAL HERITAGE

SUMMARY OF RECOMMENDATIONS

I. Literature :

1. (a) Literary works of merit should be encouraged by awarding prizes, titles and pensions to authors ; (b) Boards for the advancement of literature and associations of authors like the Writers' Guild should be adequately subsidized ; (c) The Copyright Act should be made effective to protect the interests of authors. (8—12).

2. A National Book Centre with branches in Lahore and Dacca should be established to provide information about books, their demand, and availability ; the existing facilities for publishing, printing and distributing books ; and proper royalty rates and other forms of remuneration. (10).

3. A National Book Trust should be established with a loan from Government to undertake the printing and publishing of inexpensive books other than textbooks. (11).

4. Local bodies should maintain from their own funds an active library and reading room for the benefit of the public. Provision should be made for the training of the man in charge of the library and proper conditions of service should be ensured for a trained librarian. (12).

II. Fine Arts :

1. People come to appreciate good art through direct experience and not by learning a set of rules about it. (15).

2. Schools and colleges, from the architecture of the buildings to the lay-out of the gardens, should be attractive and pleasing. The pictures on the walls and the music played for physical drill should also be carefully selected. (17).

3. There should be exhibitions of fine art in its several forms—permanent exhibitions in large towns and cities, and travelling exhibitions for the country areas. (18).

4. In place of the present drawing-master, who is often a second-rate instructor, we should have a properly qualified teacher of art able to develop in his students a true appreciation of art and teach them its rudiments.

5. Departments of Fine Arts should be developed and strengthened in universities and colleges, particularly in women's colleges. (20).

III. Museums and Cultural Education :

1. Archaeological museums, museums of natural history, and museums of science and industry have great educational value and their establishment should be encouraged. The existing museums should be strengthened and new ones established. Zoological gardens should be supported and planetariums established.

2. The museums should organise special programmes and guided tours for the students in consultation with their teachers. (25-26).

3. An Advisory Committee should be set up to help formulate the policy of our museums and to promote the educational significance of museum services. The Committee should work in close co-operation with the Departments of Education and Archaeology. (28).

CHAPTER 12

EDUCATION THROUGH FILMS

1. In this era it is impossible to discuss the improvement of education without considering the possible contribution of the relatively recent developments of television and motion pictures. These new and powerful media have captured the imagination of many countries engaged in long-range development programmes because of the unique advantage they have of reaching large numbers of people in a compact and dramatic form. Both television and films lend themselves readily to a variety of uses, such as demonstration, training, information, inspiration, and as a means of creating a sense of common purpose and national solidarity within an entire population. Any one or all of these functions can be served by these media either in the class-rooms of the educational system or through the activities of agencies and community groups interested in the promotion of agriculture, industry, social welfare, health, or other spheres of national activity. The impact of the visual image seems to create immediately a degree of interest and concentration that greatly facilitates learning. At the same time the artistic range of the media permits them to present material in a dramatic form that is difficult, if not impossible, to duplicate. Together, these qualities provide an exceptionally effective educational device.

2. Although what we have said applies with almost equal force to both television and films, we shall deal in this discussion primarily with the latter. At the same time we recognise the tremendous impact that television can have on our people and upon the development programmes and educational activities of the nation. We omit a detailed discussion of this medium only because at the present time facilities for television do not exist. We urge Government to move as quickly as possible towards the development of television but since we are now concerned with what is to be done immediately, our comments are limited to the possible uses of films.

3. The value of visual media is particularly great in countries such as Pakistan where the rate of literacy is low, the population dispersed in small rural communities, and where it is essential to social and economic progress that the knowledge of science and technology be disseminated widely and applied effectively to production. The possible uses of films in many areas are so many and so varied as to call for some elaboration.

4. First, films have a fundamental contribution to make to the improvement of education itself. It is possible here to indicate only a few of the ways in which this useful invention can serve to widen the experience of students and vitalize instruction. In science, for example, it is possible to present through films rare microscopic viruses and bacilli; to reproduce entire life cycles within a matter of minutes; to plumb the ocean depths and explore celestial galaxies; and to demonstrate graphically and dramatically complex chemical reactions or explain difficult physical theories. In the social sciences it is possible for the student to observe at first hand the geographic, economic and social conditions in other nations and also to see dramatic re-enactments of history. Moreover, through films every student can hear lectures by the most eminent scholars in the world. So great and varied are the possibilities of films that they are no longer considered auxiliaries of education but rather instructional techniques.

5. Secondly, this visual medium can contribute directly to the economic development programmes in agriculture and industry. It is not difficult to visualize the persuasive impact of the demonstration of an improved agricultural practice, presented dramatically in simple terms on an actual farm in Pakistan. Through films the effect of the use of fertilizer and insecticides on production or of improved methods of planting or harvesting, can be shown to farmers in every section of the country. Similarly, workers in factories and mills can be taught industrial processes or learn the operation of an industrial machine quickly and effectively through films.

6. Adult education, especially literacy instruction, can also benefit appreciably from the use of motion pictures. Not only do films contribute directly to instruction: they also serve as a device for creating interest and the necessary motivation to learn which is of fundamental importance in this type of education.

7. The film can play an equally important role in improving the health of our people. Through them the people can be shown, in a form that is both understandable and persuasive, the causes of disease, the importance of preventive medicine, such as inoculation, the need of sanitation in the prevention of disease and the need for personal habits of cleanliness.

8. Finally, it is possible to employ films in our effort to create a sense of nationhood and to promote a spirit of national service. Through this medium it is possible to explain the social and economic problems of the nation and the plans to solve them; to depict dramatically the disastrous effect of anti-social activity on the entire community; and to enhance regional understanding and national solidarity by showing people the life, customs, and culture of people from other sections of the country.

9. From all this it is clear that the nation's interest demands that this rapid and effective means of bringing knowledge to her people be developed. Available films must be more widely distributed and many more films must be planned and produced. Some films, which will be of special value in our colleges and universities, have been produced in other countries and can be imported. However, for most other purposes it will be necessary for us to produce our own films designed to meet our particular needs, using our own languages, and utilizing Pakistani artistes, locations, and situations. To ensure the effective and artistic production of these films the co-operation must be secured of all who make use of them and of all who produce them. Our talent and equipment in this field, limited as they are, must be used to the best advantage. We do not believe that this objective can be served where many different Government Departments and agencies are producing their own materials. The technical and artistic aspects of production are much the same whether the problem is one of demonstrating a new method of planting a crop, the technique of handling and using a machine tool, or an explanation of a principle in advanced college physics. Each department or agency wishing to produce a film should have the resources to provide a satisfactory script and the necessary technical advice, but beyond this the production facilities should be the same for all agencies. We recommend, therefore, that facilities adequate for the production of films should be established in each province and in the capital to serve the needs of all Government agencies involved in producing films and related materials.

10. The second major problem we face is that of providing for the distribution and showing of the available films. In secondary schools, colleges, and universities we believe that film projectors should be a part of the standard equipment for such institutions. In constructing new buildings, class-rooms should be designed to permit films to be shown and existing class-rooms should be altered for this purpose, wherever possible. Provision must also be made for importing films that are usable in schools and colleges and making them available to these institutions through the Department of Education, or, in the case of universities where the number of films used would be large, through their own film libraries.

11. For the distribution of films for use in local communities we recommend the setting up of film libraries and distribution centres at suitable locations. Such centres should store the films needed by the various agencies and services and be staffed and equipped to provide service for equipment, to repair films, and to distribute films and equipment to the localities where it is needed. The distribution facilities should include mobile vans with projectors, generators, and other equipment that is needed for the actual showing of films.

12. Once films have been produced, effective ways must be found of showing them in the local community, particularly in our villages. We are impressed by the possibilities of "film clubs" similar to the "tele-clubs" that have been organised so effectively in Japan, France, and other countries. Under this arrangement the villager would pay a small fee for membership in the club which would be used to provide facilities for showing the films either indoors or outside. The organization of these clubs might be undertaken by Village-AID.

13. It is expected that many of the films produced will be of sufficient importance and of an artistic standard high enough to justify their showing in commercial picture-houses. Such showings would not only help to achieve the purposes for which the films were produced but may also serve as a source of income to help defray the costs of production and distribution.

EDUCATION THROUGH FILMS**SUMMARY OF RECOMMENDATIONS**

1. Due emphasis should be laid on the production and use of visual aids, particularly films, because of their potential impact on education—both in formal schools, and in activities for the improvement of agriculture, health, industrial production and civic responsibility. (—6).

2. Large numbers of films designed to meet our particular needs, using Pakistani languages, situations and locations should be produced in a variety of fields. Adequate production facilities should be made available in both provinces and in Karachi to serve the needs of all departments and agencies wishing to produce films and related materials. (7).

3. Film projectors should be items of standard equipment in secondary schools and colleges. Class-rooms should be adapted for the showing of films and generous provision made for the import of such films as these institutions are in a position to use. (8).

4. Film libraries and distribution centres should be established at central locations to distribute films for use in local communities. These centres should be equipped with mobile vans, projectors, generators, etc., for the showing of films in rural areas, and include on their staff a technical hand able to repair all film equipment. (9).

5. Effective means should be devised for showing films to groups in rural areas. Consideration should be given to forming "film clubs" similar to the "tele-clubs" developed successfully in other countries. (10).

CHAPTER 13

THE ROLE OF EDUCATION IN THE BUILDING OF CHARACTER

1. In the preceding sections of this report the Commission has been concerned primarily with the nature and scope of specific academic programmes and with the problems of accommodation, staffing, and provision of proper facilities for their effective operation. From time to time we have referred to the responsibility of our educational institutions in the area of character development. A fuller discussion of this issue has been reserved for separate treatment in this chapter because the Commission considers this aspect of education vitally important for the educational programme at all levels and in all disciplines. None of the educational reforms that we have proposed will achieve the desired results unless they lead to the inculcation of personal and national values based on a deep concern for the welfare of Pakistan. Moreover, character, as the Commission conceives it, is a positive and active force, and as such requires not only the intellectual recognition of certain values but also the translation of these beliefs into constructive activity. We would like to begin this discussion with a consideration of those values which we are convinced must be held in common by all our citizens, and then to consider various means of developing habits which are likely to convert these beliefs into behaviour.

2. A citizen must have a deep and abiding love for his country. This is conceived not as a vague sentimental feeling, but as a genuine appreciation of the spirit of Pakistan. It is characterized by a pride in the nation's past, an enthusiasm for its present, a firm confidence in its future, and a conviction that every citizen has a basic responsibility to contribute what he can to the growth and strength of the nation. The essence of patriotism is a feeling of national solidarity in which the individual identifies himself with the common aspirations of all citizens ; is moved by influences which bind the people together ; and develops a consciousness of affinity and kinship. He feels that he belongs to Pakistan, in the same way that he belongs to his family, and he feels that whatever happens to Pakistan happens to him.

3. The individual must also develop a pattern of personal values encompassed within the concepts of hard work, self-sacrifice, and the dignity of manual labour. The Commission has heard frequently the argument that because a large section of our people is poorly nourished and works under difficult conditions, it is unrealistic to expect from them the same standard of effort as would be forthcoming from those more favourably circumstanced. In our view, it is not poverty so much as lack of will that stands in the way of national effort. To a resolute people lack of means would act not as a deterrent but as a spur to greater activity and sacrifices, to rise to the level of the nations with stable economies and high standards of living.

4. Our worst single misfortune in the immediate past has been the lack of honesty in personal, professional, and public life. This has eaten into our ambitions, our spirit, and our vitality. We have made recommendations on the assumption of an improving standard of honesty and integrity on the part of students, teachers, and public officials. If this is not forthcoming we cannot achieve our objective, which is to produce a citizenry that looks upon personal honesty as the basis of self-respect ; that views professional positions and public offices as sacred trusts ; that

believes that he who fails to give his maximum effort is at best a parasite and at worst a traitor ; and that insists on the observance of a uniform code of honesty and integrity by one and all.

5. The problems confronting the nation cannot be tackled through unco-ordinated individual efforts. They require for their solution the ability and willingness of many people to work co-operatively, not only in the sphere of Government and industry but more particularly in the area of voluntary community service. Our people must have the conviction that the welfare of the community is everybody's business and that the fortunes of each citizen are inextricably linked with those of his fellows. The common man must be made to realise that he is a leader in his own sphere and has to take the initiative to improve his lot. He must be made conscious of his power and potential as well as of his obligations and responsibilities.

6. The basic element in the personality of the individual is his character in the broad sense, i.e. truthfulness, honesty and integrity, sense of duty, sincerity of purpose, justice and fairplay, disciplined behaviour, and above all fellow-feelings and the spirit of service above self. The upbringing and education of a child should aim at developing these traits in him, so that thinking and acting according to these precepts may become spontaneous and natural to him. The academic achievements of a child, divorced from such character formation, will not only be of doubtful value to society but may be positively harmful.

7. It is common here, as it is in most other countries, for people to lay the blame for all social evils upon deficiencies in the educational system. This is not wholly correct, since the school is not the only nor necessarily the most important force that impinges upon young people during the formative years. Indeed, the home, the school, and the community at large, all contribute to the formation of a child's mind and character. Before the child enters the school, he has lived for at least five years in the environment of his home where he has been exposed to the moral atmosphere of his family and where his basic habits and attitudes have already begun to take shape. After he enters school, the average child spends less than 20% of his time under the influence of the school, and even at the more advanced stages, the students are within the orbit of the school for hardly more than half their time. The child thus continues to spend a considerable portion of his time in his home. As he grows up, he participates more and more in the life of the community where he is subjected to the influence of many individuals and institutions outside the circle of both the family and the school and where he consciously and unconsciously imbibes the ethos of the community, its beliefs, customs, and attitudes.

8. A recognition of these facts suggests several important lines of thought and action. First of all, we must realise that a school is essentially a community within a community and that it is the total impact of the larger community that is the ultimate determinant of a child's character. Secondly, the home environment and the conduct of parents and of the community members affect the child in various tangible and intangible ways, and make an impression on him which is difficult to undo later. It should, therefore, be a major objective of adult education to make parents aware of their obligations and duties towards their children. If the parents and elders are properly instructed, their influence on the younger generation will be healthy, and the character of children will develop on the right lines.

9. This analysis clearly shows the importance of the education of parents. In our country, where over 80% of the population is illiterate, the ideal of having educated parents for the majority of our children can be achieved only in the very distant future. To produce immediate results, therefore, we must take active steps to give guidance and training to fathers and mothers, and especially mothers, in the bringing up of their children. There can be little doubt that the mother is the principal influence upon the young child. It is with her that the child spends most of his time and from her that he develops early habits and attitudes. What the mother thinks, feels, and believes, will mould the mind and character of the child and will determine the kind of person he is when he enters school. Women's education is, therefore, of the utmost importance from the point of view of building up the character of the younger generation.

10. Fundamental education can be imparted through the agency of Village AID and social service organizations, and the services of Government employees working in the rural areas should also be utilized. Such education should emphasize the importance of cleanliness in the home, the observance of regularity in regard to meals and sleep, the avoidance of lies, abusive language, and false promises. The parents should encourage their children to undertake minor household tasks and allow them to indulge in play and free activities. They should dissuade them from doing what is wrong and persuade them to do what is right through affection and firmness and example, and not by threats and physical punishment.

11. The influence of the home and the community upon the character of our children also requires the building up of a close relationship between them and the school to ensure that there is no conflict between the impact of either. The formation of parent-teacher associations has, therefore, a special significance in this context.

12. Although, as we have said, the school is only one of the factors influencing a child, its effect on character-building can be decisive. The child attends school at an age when he is exceptionally pliable and susceptible. The teacher is with the child for several hours each day and is in a position to utilize the child's natural tendency to admire and imitate his elders. The teachers must be brought to realize that it is the way he behaves rather than what he says which influences the growth of the child. Education at institutions have also the advantage that they have, or should have, carefully planned programmes which enable them to expose the child deliberately to those experiences which are most likely to produce the desired effect. Since in most communities the school is the most prominent and permanent institution outside the family, it should take the lead in establishing contacts with the home and the community to ensure a sound constructive approach to the total process of character formation.

13. In considering the problems of education at various stages, and in making its recommendations, the Commission has constantly kept in mind the importance of character formation as one of the ultimate objectives of the educational system. Various suggestions included in the different chapters in respect of the curricula, programmes of work of teachers and students, the organization of social activities, and the association of educational institutions with the community are designed to serve this purpose. The Commission would, however, suggest a few

specific measures which it believes will contribute positively to the inculcation of the personal and national values essential both to the implementation of education reform and to the success of national reconstruction :

- (a) Personal and public pride cannot flourish in an environment that is dirty and drab. School buildings should therefore be bright, colourful, clean, well-maintained, and attractive even though they may be simple in design and cheap in construction. Very little effort and expense are required to maintain grounds and buildings in this manner but the dividends accruing from them in the shape of the child's attitude towards school as well as towards life would be substantial.
- (b) At the school stage, the day should begin with a formal ceremony which should include the singing of the national anthem and appropriate readings emphasizing the concept of the Pakistani nation. It is recommended that a national pledge be "composed" embodying these sentiments. Once a month the ceremony should be extended to include the hoisting of the national flag. At the college level a weekly ceremony similar in nature but geared to the advanced intellectual level of the students should be conducted.
- (c) To ensure that morality is firmly founded on the concept of the love of God and of one's fellow men, we have recommended that religious instruction be made compulsory throughout the Primary and Middle stages.
- (d) A long-range programme should be instituted to include in the general reading materials at each educational level important national events exemplifying basic virtues, personal sacrifices, and outstanding contributions to the national life, as well as biographical materials on leading patriots which will keep before the students the ideals we are striving to achieve. This type of material should be included not only in the standard history and civics courses but also from the basic content of primers, readers, and workbooks in each class.
- (e) The student should be imbued with a sense of personal responsibility and public honesty. He should be provided with opportunities throughout the school programme for practical experience in organizing and implementing his own activities, in operating in situations where his integrity and honesty are assumed and in the stewardship of common funds. To achieve these aims we suggest several avenues that may be tried singly or in combination :—
 - (i) The initiation of a large number of student activity groups, clubs and societies which are run by the students under the guidance of teachers. A conscious effort should be made to give as many of the students as possible specific responsibilities and opportunities to exercise leadership. It is particularly important that the teachers in fulfilling their guidance function devote a good deal of their time to individual students, encouraging them to accept responsibilities and discussing with them the implications of their actions.

- (ii) The establishment from the very early classes of small common funds placed in the hands of the students to be expended for purposes which they themselves determine. Those who are particularly meticulous in the stewardship of these funds should be rewarded, while those who are injudicious, careless or dishonest should receive sympathetic guidance. The emphasis should be upon the concepts of duty, trust, and honour, bringing out the effect of individual actions upon the welfare of the group.
- (iii) The introduction, whenever and wherever possible, of situations which call for a high sense of personal integrity and group responsibility. Included here would be such devices as "honesty rooms" or "honesty shops" where items of daily use are made available for purchase by students without any supervision; open self-borrowing libraries; and "honour-code systems" in examinations and in other specific areas of student conduct. Honesty grounded in these concepts and practices in much more likely to have a lasting quality than if it is based merely upon the hope of reward or the fear of punishment. We are deeply impressed by the "Honour Code" actually in operation in the PMA at Kakul and we would like schools to adopt 'honour codes' on a somewhat similar pattern.
- (f) At every stage of his life the student will be a member of some group and usually of several. The family, the school, various community institutions, the factory, the farm, as well as the citizenship he shares with his fellow-countrymen, demand that he should have the temperament, training, and willingness to work co-operatively with others. It is imperative that all our young people have a continuous experience in co-operative action gained, in part, from participation in clubs and societies. We also recommend an extensive programme of sports and games at every level, with emphasis upon activities requiring the subordination of the individual to the team or group.
- (g) There should be a persistent effort to make the student "community conscious". The school programme itself should include material designed to give the students an understanding of the nature of the community, the facilities it provides for the welfare of its members, and the manner in which it is governed. We would urge that the students be brought into direct contact with institutions through which they may be able to contribute to community improvement.
- (h) One of the more difficult problems we face is that of creating in our people, particularly those who are educated, an understanding and appreciation of the dignity of manual labour. We have recommended that all students in schools and colleges should regularly be required to work with their hands. The nature and amount of such manual labour will, of course, vary with the physical status of the students. In the chapter on the Dignity of Manual Labour, we have suggested some of the avenues through which actual work experience may be given to students at the Primary, Secondary, College and Universities level. We believe that not only

for the building up of character, but also for the inculcation of habits of industry and hard work, the strict enforcement of this programme of work-experience is essential throughout the educational career of the student.

14. In the case of women it would seem that the most appropriate experience would be in the fields of homecraft and nursing. It may be possible to initiate a nation-wide programme for college and university women to work in nearby hospitals and clinics to perform sub-professional nursing tasks. This may be undertaken during term time or vacation, and the satisfactory performance of such duties may be made a condition for the award of the degree.

15. We have described above the role of the school in the formation of character. We may add that no school can play that role effectively unless it is run efficiently. It is only too easy to see how a school in which staffing and pupil-teacher ratio are poor, accommodation and equipment inadequate, and the teaching perfunctory or in which the administration is weak and the discipline lax, can produce children who will be prepared to accept the most indifferent standards of work. A teacher who absents himself from his class is doing a far greater disservice to his country than perhaps he realises. He is creating a habit of mind which says that one's work does not matter, and that it is not necessary to take much trouble in carrying out the duties for which one is paid. By contrast, the teacher who is always in his classroom on time, who takes a personal interest in keeping it clean and tidy, who does his teaching with vitality and enthusiasm is continually building up in the children a set of habits that should remain with them throughout their lives. We believe that our schools and colleges should be models of efficiency and industry. There should be places where teachers and students not only work hard, but where they demonstrate and practice the virtues that go with working hard, such as attention to detail, punctuality, and being prepared to take trouble for the sake of other people.

We believe that the extent to which a school achieves this end depends upon its headmaster, who should have a clear idea of what he wants to achieve and the strength of personality and resolution of character to achieve it. We recommend that in making appointments to the headships of schools and colleges particular attention should be paid to these important requirements. We further recommend that the appropriate authorities give their full support to the Head in all legitimate steps he may take in ensuring high standards of efficiency and hard work throughout his institution.

16. It is important that the citizens should be loyal and honest. It is equally important that they should be hard-working and efficient, taking pride in doing their work well. There are far too many who are prepared to do only the minimum necessary to avoid censure or discharge. We should aim rather to create men who glory in the knowledge that they are helping their country and because they get satisfaction from giving satisfaction. We want to produce men and women who will work hard because they believe that idleness and slackness are morally wrong, and because they see in hard work a means to their own personal salvation and the salvation of their country.

17. Government is the biggest employer in this country and its officials come in intimate contact with the life of the people. Many

of those who have the privilege of serving the Government at all levels must realise that they are servants of the public and that they should strive by courtesy of manner and by the prompt and efficient discharge of business to share fully in national reconstruction. This means having officials who not only know what they have to do but who feel their self-respect and honour is involved in doing it well and in doing it promptly. We need people who will work as devotedly and carefully in solving other people's problems as they will in solving their own.

18. It may be inferred from all that we have said in the preceding paragraphs that efforts to mould the character of our youth along lines that are calculated to serve the national interest will require the most careful planning and coordination. If the ideals to which we aspire are to be realised, the home, the school, and the community must join together in the process. It is in this belief that we have described the responsibilities of all these agents, with emphasis on those of the school in this effort.

THE ROLE OF EDUCATION IN THE BUILDING OF CHARACTER

SUMMARY OF RECOMMENDATIONS

1. Character development is of vital importance in any educational programme. No educational reforms will achieve the desired results unless they lead to the inculcation of personal and national values based on a deep concern for the welfare of Pakistan. (1).

2. The basic element in the personality of the individual is his character in a broad sense : his truthfulness, honesty, and integrity ; his sense of duty, justice, and fairplay ; his disciplined behaviour, and his spirit of service above self. The upbringing and education of a child should aim at developing these traits in him, in such a way that thinking and acting according to them becomes spontaneous and natural to him. (6).

3. The school is not the only nor necessarily the most important force that influences a child during the formative years. The home and the community at large, also contribute to the formation of his mind and character. (7).

4. A school is essentially a community within a community ; and it is the total impact of the larger community that is the ultimate determinant of a child's character. The home environment and the conduct of parents and of the members of the community affect the child in various ways and make an impression on him which it is difficult to undo later. It should therefore be a major objective of adult education to make parents aware of their obligations and duties towards their children, more especially the mother who exercise the principal influence upon the young child. (8-9).

5. Although the school is only one of the factors influencing a child, its effect on character-building can be decisive because the child spends a considerable portion of his time there at an age when he is exceptionally susceptible to influence. Various suggestions made in other chapters in respect of curricula, the programme of work of teachers and students, the organization of social activities, and the association of educational institutions with the community, all relate to the purpose of character formation. The following specific measures are suggested here :—

- (a) School buildings, although simple and economical in design and construction, should be attractive, clean and in a good state of repair so as to foster in children a sense of personal and public pride.
- (b) The school day should begin with a formal ceremony including the singing of the national anthem and appropriate readings to emphasize the concept of the Pakistani nation. A national pledge should be "composed" to embody these sentiments.
- (c) Religious instruction should be made compulsory throughout the primary and middle stages.
- (d) The contents of appropriate primers, readers, and workbooks in each class should include important national events and biographical materials on leading patriots so as to keep before the students the ideals we are striving to achieve.

- (e) The student should be imbued with a sense of personal responsibility and public honesty. Throughout the school programme he should be provided with opportunities for practical experience in organizing and implementing his own activities, in operating in situations where his integrity and honesty are assumed, and in the stewardship of common funds. For this purpose, student activity groups, clubs, and societies should be run by the students under the guidance of teachers; small common funds should be established and placed in the hands of the students to be expanded for purposes which they themselves determine, and "honesty shops", self-borrowing libraries and the "honour code" introduced.
- (f) At every level of education, there should be an extensive programme of sports and games with emphasis upon activities requiring the subordination of the individual to the team or group so as to develop in him the habit of working co-operatively with others.
- (g) A persistent effort should be made to make the students 'community conscious'.
- (h) An understanding and appreciation of the dignity of manual labour should be created in students not only for the building up of character, but also for the formation of habits of industry and hard work. The strict enforcement of a programme of 'work-experience' in suitable fields is essential throughout the educational career of the student. (12-13).

6. In the formation of character no school can function effectively unless it is run efficiently by a headmaster who has a clear idea of what he wants to achieve and has the strength of personality and resolution of character to achieve it. (15).

7. Careful planning and co-ordination of efforts will be required to mould the character of our youths along lines that are calculated to serve the national interest. If the ideals to which we aspire are to be realised, the home, the school, and the community must work together.- (18).

CHAPTER 14

THE DIGNITY OF LABOUR

1. In this Chapter we must deal with a social phenomenon in our country which would normally be outside the range of questions examined by a Commission on Education. We have referred in earlier chapters to the fact that in Pakistan there exists a widespread reluctance to dirty the hands and a tendency to regard manual labour as something reserved for particular classes of people. We are disturbed to find the general impression that the education system has contributed to the existence of these attitudes, and it is a matter of great concern to us that education should, in any way, be a party to the maintenance of cleavage and division within our nation.

2. There is no need for us to illustrate how our educated citizens, and the "white collar" class generally, are dependent on others for the performance of manual task. Nor is there need for us to recall how frequently it is true that even those, such as engineers, who are required by the nature of their work to get their hands dirty, tend, once they have obtained a university degree, to confine themselves to paper work in an office. This state of affairs is not only to be deplored for its effect upon professional competence, but also because it contains a totally unacceptable social principle, under which it is suggested that certain tasks are reserved for certain classes of our society. Although this attitude and these conditions may have their origin in historical circumstances. Islam teaches the equality of all men and we wish to make it very clear that the concept that certain men or certain occupations are inherently inferior to others is entirely unacceptable to us.

3. It is inevitable that a society should organize itself into professions and trades involving varying degrees of physical labour. It is equally inevitable that some jobs will be less attractive than others. As far as society is concerned, however, it is obvious that if we are to succeed in a technological age, the professions of the craftsman, the technician, and even of the labourer must have their honourable place and be recognized as indispensable parts of a progressive nation developing into a social welfare state.

4. The schools and colleges can contribute to this objective by organizing a system that is in greater harmony with our own ideals and with the demands of the modern technological age. This can be done, in part, by providing in attractive form educational opportunities in the technical and vocational fields which will alter the prejudices of parents, the outlook of the young, and the habits of people generally. Such a programme has been recommended in specific terms in the previous chapters.

5. Our educational system can go further by ensuring that balanced and rational understanding of the varied and inter-related occupations of our people is acquired by the student, and that hard work is given the honour and dignity it deserves. Apart from this, special programmes of work experience should be organized at all levels in our educational system and particularly for those who are not, in their courses, called upon to receive instruction in workshops or in the field. We have outlined these programmes for each level in the appropriate chapters, but

we wish to restate them here to emphasize their importance and the need of the continuity of this experience from Class I through the university.

6. In the primary schools we have recommended that provision be made in the timetable for a regular period each week during which teachers and pupils will participate in some form of light physical labour. The obvious place to begin is in the routine upkeep and cleaning of the school and its premises. Teachers should supervise the daily tidying and cleaning of class-rooms and show how desks can be polished and kept clean. Wherever possible a part of the work experience at this level should be in the maintenance of a small garden plot associated with the school. In the middle school the timetable will also include provision for work experience where the children, under the guidance of the teacher, would be expected to make minor repairs on the school building including white-washing, mud plastering, bamboo screening, and work on the compound wall. It should also be expected that the older children at this stage will undertake some work in the community in the form of cleaning-up campaigns, harvesting, malaria control, and the like.

7. The work of cleaning and tidying buildings and grounds would also be a feature of the pupils' and teachers' responsibilities beyond Class VIII. At this stage it should also be possible to arrange for students to help not only in the repair of school buildings but also in the actual construction of new buildings or in additions to old ones. In this type of work the teacher should work along with the students, and a few professional artisans might be employed to direct the programme. We have suggested elsewhere that communities should assist in the construction of school buildings and in this work there is every reason why the student and the teacher should supply a part of the labour. Again, secondary school students should participate in work projects in community service or in such activities as health programmes, flood control, and the clearing and repairing of wells and drains. In their vocational and technical courses some of the students will have acquired specific manual skills and these should be utilized for the good of the community as well as in anticipation of their own future careers.

8. It is customary in the case of institutions in rural areas to allow holidays at the time of harvest and to adjust the school term accordingly. We recognize that the prevalent custom is for families to work together during the harvest and this will, of course, continue to be the prevailing pattern. We would suggest, however, that for at least part of this holiday period all the children of a school should work together at the harvest with the sons of the wealthy working alongside the sons of the poor and together with the teachers of the school.

9. Students at colleges and universities should also have work programmes arranged for them. We do not suggest that at this level the students should be responsible for cleaning college buildings, class-rooms and laboratories. However, those living in hostels should certainly be expected to take care of their own quarters and attend to their personal needs. In this respect we anticipate that the number of persons employed at colleges and universities to perform personal services for students will be considerably reduced. Whenever possible hostel messes and college and university cafeterias should be organized on a self-service basis with the number of employed servants kept to the minimum.

10. The greater part of the organized work experience of college and university students should take place during the summer vacation. It should be accepted that every college and university student should have the equivalent of two or three months of summer work experience spread over two years during his university career. The length of this experience during each vacation and the exact scheduling of it for each student would be worked out on an individual basis by the institution and the appropriate authorities. However, if a student is required to work in an organized civil or military camp, he should be entitled to draw such financial help as may be admissible. The work itself may take many forms but we visualize it mainly within three general areas of service, namely :

- (a) Work Experience Camps, which would involve organized work programmes on a variety of projects including construction work on projects related to the national programme of economic development, health and sanitation projects such as malaria control, and emergency programmes such as flood control.
- (b) National Service for adult education particularly in the area of literacy instruction but also in appropriate related fields.
- (c) National Service either in the defence or in the area of civil defence. This aspect of service is discussed in detail in the section of this report dealing with the establishment of a National Cadet Corps.

In the case of women students we recommend the development of similar organized programmes in the field of nursing and in the area of adult education.

11. As these are new programmes it is extremely important that they be carefully planned and conducted in an organized manner. We would suggest that staff members in each college and university be assigned the responsibility for planning and organizing the participation of students in their institutions, and to serve as the liaison between the institution and those who organize projects at the provincial and national levels. Normally planning should be done in the autumn for the following summer, so that students will be informed of their responsibilities and may prepare for them in advance. It is also recommended that the appropriate educational authorities should scrutinize the operation of the programme carefully, so that it can be quickly and constructively adjusted in the light of experience.

12. We also feel that college and university students should devote some time during the academic year to work projects of a community nature. Such projects as the malaria control work done by students at the University of Peshawar, or the survey of refugees carried out with the assistance of students at the University of Karachi, can be undertaken and the number of possible projects of this sort should be greatly expanded. Care should be taken, however, to ensure that this work is organized in such a fashion as not to interfere with the student's programme of study.

13. Even though we make a concerted effort within the educational system to inculcate a new and constructive attitude towards physical work, it must be pointed out that education is only one sphere of national

life. If these new attitudes are to be durable a similar effort must be made in other sections of society to erase the prejudices and misconceptions that are at the root of the people's attitude toward labour. In this regard we would urge that those in government, industry, and other sections who are not normally required to engage in physical labour be expected to engage in some form of national service outside of their normal duties.

14. It is also important that our leaders give recognition through the press and radio to the valuable contribution of workers to national economic progress. At the same time and in the same way the people must be educated to an understanding and appreciation of the existing skills that are required of many of our workers.

15. We can further enhance the status of workers if we are insistent that the mills, factories, and shops in which they work are neat, clean, safe, and attractive. Since we have proposed in the discussion on technical education that industry should undertake in-service and apprentice-training programmes in their factories, these factories will in a very real sense be schools, and they should be maintained at the same levels of cleanliness and attractiveness that we insist upon for our regular school buildings. There is no reason why the factory worker should not be able to work in surroundings that are as neat, clean, and pleasant as those enjoyed by our 'white-collar' workers or why he should have facilities and amenities that are in any way inferior. If we provide our workers with this kind of an environment, then both they and others will begin to sense the importance of their work and the dignity of those who are performing it.

THE DIGNITY OF LABOUR

SUMMARY OF RECOMMENDATIONS

1. It is necessary to eliminate the general reluctance to use one's hands and the tendency to regard manual labour as something reserved for a particular class of people. (1—3).

2. Schools and colleges should contribute to the acceptance of manual labour as honourable and essential by providing attractive opportunities in the vocational and technical fields and by giving the student a balanced and rational understanding of the varied and inter-related occupations required for national progress. (4-5).

3. All students at the primary and secondary stages should engage in some form of physical labour through a regular programme provided for in the timetable. For younger children this would take the form of the routine cleaning of the school premises, the maintenance of small garden plots, and similar tasks. For older children, the programme would signify some participation in the repair and maintenance of the school building and grounds ; in community projects such as the cleaning and repairing of wells and drains, flood-control and relief work and in projects connected with educating the public on health matters. In all of these activities the teachers should work with and supervise the students in their work programme. (6—8).

4. At the college level students should engage in programmes of organized summer work for a total of three months spread over two or three years. Under this plan the student would participate in projects involving 'work-experience' ; undertake national service either in the armed services or in civil defence ; or engage in adult literacy teaching. The actual implementation of this programme should be set as one of the requirements for a degree.

5. Women students at the college level should participate in organized programmes either in nursing, adult education, or in training for civil defence. (10).

6. The contributions made by the workers to the total national economic effort should be clearly recognized and propagated through radio and the press, thus raising the former in public esteem. They should be given, as far as practicable, the same physical facilities and environment for work as those enjoyed by 'white-collar' workers. (14-15).

CHAPTER 15

**THE EQUALIZATION OF EDUCATIONAL OPPORTUNITY AND
SEARCH FOR TALENT**

1. The vicious circle around which education and economic development pursue each other has confronted the Commission at many points in its deliberations. The experience of other countries has shown clearly that economic progress follows closely the provision of free and compulsory education. Historically, however, a system of universal education appears to have been possible only after a reasonable level of economic advancement has been reached so that these systems have evolved gradually over many years. Although most industrial nations now have from eight to twelve years of compulsory education they have generally started somewhat below this point and expanded the period of universal education as their material resources increased. Because of the high level of industrialization now reached elsewhere the evolutionary period in Pakistan must be much shorter than that which was experienced by these economically developed nations. However, at the present time we do not have the resources necessary to support the same level of universal education that already exists in more advanced countries.

2. Recognizing that the circle must be broken, our basic consideration has been deciding how we can best proceed toward the level of free and compulsory education required for economic progress and enlightened citizenship. In the chapter on Primary Education we have accepted the basic principle of a minimum of eight years of compulsory education and have suggested progressive steps, starting with the effective achievement of universal education through Class V, by which this objective can be achieved over a relatively short period of time. We have also recommended a substantial enhancement of both the scope and the quality of secondary and higher education. These improvements will, of course, make advanced education more expensive, and we have suggested a feasible formula under which the various partners—parents, management, and Government—will make their contribution to the support of such a programme.

3. So long as our *per capita* income is low, some of our ablest students will not be able to afford higher education, thus depriving the nation of the benefit of trained talents. Hence there is the need for a large number of scholarships at different stages. So long as the State is unable to provide free education for all, it must at least try to provide free education to those who are most deserving of it and who will be able to contribute most to the development of the nation. It is through such a system of scholarships that we can make the most meaningful equalization of educational opportunity.

4. Our interest in such a programme of scholarship aid is motivated by another consideration. If there is one recommendation that runs throughout the Commission's report it is that the educational system must be geared to serve the cause of national progress. This can be done only if we develop in our people, through the schools, a high level of technical competence in all spheres of national life and at the same time mould the character and leadership to utilize this competence fully. In discussing engineering, agriculture, technology, business, teaching, and every other field, the Commission has stressed the concepts of competence, character and leadership. The greatness of any nation depends ultimately upon the quality of leadership it enjoys, for it is

leadership that provides the imagination, organization and inspiration that are the essence of effective action. The process of producing leaders, however, requires more than education. It assumes the presence within the educational system of young men and women of the highest talent. Talent is really the raw material of leadership and it will determine the quality of the finished product just as much as the educational process by which it is converted.

5. The realization that those with the highest talents must be sought out and educated to the limits of their potentialities is being felt by all nations, including those which already enjoy an advanced economic status. This universal sense of urgency may be traced to the complex scientific and technological age in which we live. Rapid change and intense competition are the by-words of our era and the need for men of vision, enterprise, and adaptability has never been greater. The search is intensified by the realization that the failure to find and train such men poses a threat not only to material progress but perhaps to national survival. For this reason even the most advanced nations of the world are involved in tremendous efforts to seek out and educate those able young people who are too often lost to the national effort.

6. In Pakistan the need to identify and nurture talent is particularly acute. We have undertaken the tasks of nation-building at a point in history when the development of a sound and progressive economic order traditionally demands large numbers of technically-trained people working under imaginative and aggressive leadership. At the same time, the training of such people is hampered by the very lack of economic development it is trying to correct. It is said that because we do not have an industrially advanced economy we are not able to support the educational system required to improve our economic position. This argument is as familiar as it is circular and its implications are singularly depressing. There is, however, a way out of this dilemma, and it lies in the direction of the maximum utilization of our human resources. There are in the world today a number of nations which, though short of raw materials, have created a thriving economy upon the highly developed skills of their people. We may not have yet discovered an abundance of the material resources that form the base of an industrial society, but there are sheltered within our borders nearly 90 million people, who, if properly trained, can become a resource that is both valuable and inexhaustible.

7. Large numbers of our most talented young people never have a chance to realize their capabilities through education, while others, currently enjoying the privilege of advanced education, have neither the ability nor the interest to profit from it. Clearly Pakistan cannot afford the luxury of such a waste of its human resources or the misuse of its limited educational facilities. There is little doubt that the largest single obstacle in the path of the able student who wishes to continue his education is the lack of funds to do so. In the interests of national welfare we cannot allow poverty to deprive the individual of the opportunities his ability deserves or the country of the talent it so desperately needs. In our effort to equalize educational opportunity through scholarships we have an excellent vehicle for the identification and training of our most able students.

8. It is not our intention to suggest in detail the procedure to be employed in selecting students for scholarship awards. However, we would like to sketch in broad outline our views as to how financial

assistance should be provided at the various levels of our educational structure. Education will be free and compulsory through Class V but we shall have to start capturing our talent from that stage onward. This means that we shall have to make provisions to identify and assist the most talented students after Classes V, VIII, X, and XII and at the degree and post-graduate stages. In providing scholarships three parties should participate; the local bodies, the provincial government, and the Central Government. Scholarships for the school stages could be appropriately financed by the local bodies and those for higher stages by the Provincial and Central Governments. We believe that a sum of Rs. 1 crore and 50 lakhs should be spent annually on a comprehensive programme of internal scholarships and that the contribution should be fixed on the basis of 50 lakhs by the Central Government, 50 lakhs by the Provincial Governments and 50 lakhs by local bodies. We further recommend that this amount should be in addition to and distinct from any amount which the Central or Provincial Government or the local bodies are already spending on education.

9. The Education Codes of various regions provide for fee concessions on account of poverty. These are usually at the rate of 10% full, 10 half. In addition, the colleges also award fee concessions. These concessions should be continued but the awards should be made strictly upon merit. In combining what is already being done with what we have suggested here it will be possible to ensure that a significant percentage of our ablest students at every level will receive the education their talents warrant.

10. The general principle that should guide us in determining the size of a particular scholarship grant is that it should be large enough to permit the student to live a normal life in the academic community and to pursue his studies without financial embarrassment and without the necessity for seeking employment elsewhere to the neglect of studies. In awarding scholarships merit should be the only determinant of who should receive a grant, but the size of the award may vary according to the financial needs of the individual. The scholarships should be of three kinds: (1) those for day students which would cover the actual fees and other incidental costs; (2) those for resident students which would cover fees, board, lodging, and incidental costs and (3) those for residential schools which, since they are expensive, would require scholarships in substantial amounts to enable children of poor and talented classes to join these institutions.

11. We should not overlook the important part that can be played by scholarships in channelling first-rate students into those professions and fields that have the greatest need for their services. In many nations engaged in long-range development efforts it is common practice to adjust the number and attractiveness of public scholarships to provide personnel for the needs of the nation-building projects. When there is a particular need for science teachers, for example, the number of scholarships to be given to students wishing to prepare for this profession is increased, while those in areas where the demand is less pressing might be reduced.

12. At the same time it is possible to use our scholarship programme to break down regional and cultural barriers in an attempt to achieve greater national solidity. At the secondary, college, and university stages, a number of scholarships should be reserved for students who

wish to study in a region or province other than their own. By providing these opportunities for students to share the close corporate life of residential schools with young people from other regions, we can hope for the growth of greater mutual understanding and appreciation at an age when impressions tend to become a lasting part of one's viewpoint.

13. Before leaving this discussion of the need for a broad programme of scholarship assistance as a means of fully utilizing the talents of our youth, and of equalizing educational opportunity, we would like to make some observations that should be kept clearly in mind by those implementing these proposals. In the process of locating and encouraging those with ability we must remember that there are many different kinds of talent. It would be a grave error to restrict our attention exclusively to those who exhibit aptitudes that are fundamentally intellectual. Economic development requires large numbers of skilled craftsmen, technicians, and artisans of all types. Those who have the aptitudes essential to achieve a high degree of competence at this level should be cultivated as assiduously as the prospective engineer. To recognize this form of talent it will be necessary to find new techniques by which potentiality in the less theoretical fields can be identified and measured. Significant work in this area is already being done in the armed services and our educationists can profit greatly from this experience. We discuss this matter in the chapter on Guidance and refer to it in other chapters as well.

14. In implementing the scholarship programme it should be recognized that the selection and subsidizing of talented young people will not automatically produce the results that are envisaged here. The experience of other countries indicates that although the inability to pay for education is the most important factor in deterring able students from continuing their schooling, it is not the only influence. Many young people lack the motivation to continue their studies, particularly when they come from a home or community environment which does not recognize the need for advanced education or which does not value it highly. It is most likely that a similar situation exists in Pakistan and it may be heightened by the fact that the child often becomes an economic asset to this family at a very early age. If we are to overcome this lack of motivation, there must be a concerted effort on the part of teachers, school authorities, and all our community agencies to encourage those with real ability to continue their education and to convince parents that ultimately the well-being of all our citizens is enhanced if those with exceptional talent continue their training to a higher level.

15. Of almost equal importance is the fact that a student's aptitudes and aspirations are not always identical. It is not uncommon for young people to pursue educational programmes for which they have little aptitude, while completely ignoring a field for which they have real talent. Such a situation is generally due to the student not understanding his own strengths and weaknesses, a lack of appreciation of the opportunities available in specific fields, or to a situation where the student is resignedly trying to fulfil the ambitions of his parents or others. The dissipation of human resources that such circumstances represent can be arrested only if the student and his parents are made aware of the specific nature of his talents and he is guided toward those jobs and professions in which these abilities can be utilized best. If the student is to be counselled in this manner it is necessary first that his particular abilities be identified and measured. The construction and use of standardized tests designed to single out special aptitudes has received

almost no attention in our education system. Although we recognize the limitations of such instruments we believe that they can and should play an important part in the implementation of any programme of talent identification. Some reasonably effective tests of this type have been developed and used in other countries. Even though tests, like traditions, are not profitably exported, the principles and procedures involved in test construction are fairly universal. We would suggest, therefore, that as soon as possible the appropriate agency undertake the designing of standardized tests that may be used in conjunction with other pertinent criteria in this nation-wide search for talent.

16. A final fundamental point in this discussion must be of the means of husbanding our human resources. At all times the Commission has insisted that the education provided at each level should be of the highest quality. It would be the height of folly to select carefully our most promising young people, provide for the expenses of their education, and then enrol them in inferior schools. Poor schools do not nurture talent, they destroy it. We insist, therefore, that those who are selected and subsidized under this programme must be enrolled only in our very best institutions at every level. We are particularly anxious that these students have the benefits of the corporate life afforded by residential schools and that the number and quality of such institutions be increased and enhanced to accommodate them. Concrete suggestions are made in the chapter on Secondary Education, supplemented by our suggestions for expansion of hostel facilities in the chapter on Higher Education.

THE EQUALIZATION OF EDUCATIONAL OPPORTUNITY AND SEARCH FOR TALENT

SUMMARY OF RECOMMENDATIONS

1. The nation must be assured that students with exceptional talents are identified at an early age and received the training necessary for them to make the maximum contribution to the country's improvement. Since it is not possible to provide free education for everyone at all educational levels we must ensure that the opportunities for further education are not denied to able students because of their inability to pay for it. (1—7).

2. A comprehensive scholarship programme should be instituted at all levels beyond the stage of free compulsory primary education, with awards given to the best students at the completion of Classes V, VIII, X, XII, and at the college and university levels. (8).

3. A sum of Rs. one crore and 50 lakhs should be allocated for scholarship purposes in addition to the full and half freeships currently available. Approximately 50 lakhs should be provided by the local education authorities and 50 lakhs each by the Provincial and Central Governments. (8).

4. All new scholarships and the freeships now available should be awarded strictly on merit. (9).

5. Scholarships should be of three kinds (i) those for day students covering the cost of fees and incidentals, (ii) those for resident students covering fees, board, lodging and incidental costs, and (iii) those for residential schools which would require additional expenses and would have to be substantially higher to permit poor but talented students to join. (10).

6. The scholarship programme should be used to channel able students into those fields of study where the need for trained personnel is greater as well as to break down regional barriers by encouraging students from one section of the country to study in another. (11).

CHAPTER 16

THE EDUCATION OF HANDICAPPED CHILDREN

1. Handicapped children are those who suffer from physical or mental defects, whether congenital or acquired, which keep them from ready participation in educational and vocational pursuits. Typical of these are the blind and the deaf mutes, but there are also the crippled and the delicate, the subnormal and the maladjusted, who deserve special consideration in our educational planning. In most of these cases the doctor and the psychologist must share with the educator the responsibility for helping these children to achieve at least some degree of productive activity and a satisfactory adjustment to their environment.

2. In almost all of these cases the educator must combine the provision of general education with vocational education so that the individual may be equipped to earn his own living and trained to live contentedly within the limits of his handicap. Some, such as the more intelligent blind can by the use of Braille, reach the highest levels of education in some disciplines. Others can only with the greatest difficulty reach even the most elementary levels of academic learning and the simplest of handicrafts. It is in the nature of the case that such children must have a great deal more individual care and attention than others, and that they cannot be provided for adequately in the regular school system.

3. There are a great many more such children in our society than casual calculation would lead one to expect, for many of them are kept sheltered within their parents' homes and are not ordinarily included in statistical reports. The responsibility of society for their educational and other care is undeniable, for there is no reason why such children should be allowed to grow up as a burden on the resources of the nation when they can be directed into productive activities which may actually be a valuable contribution to society. Nevertheless for various reasons, including the limitations in our resources for education in general, it seems proper to arouse the community to accept its responsibility for the education of the handicapped. The experience of other countries in this connection suggests that the actual care of handicapped children is often suitably and effectively performed by the more personal medical and educational services of private philanthropic organizations. Such organizations are in a position to appeal for and to apply the sympathy without which such care is impossible, and also to utilize the fellow-feeling naturally aroused by the handicapped in the hearts of the public.

4. Because private organizations may be limited in resources and ability, no matter how good their intentions, and because they may not easily be able to co-ordinate their efforts with those of other similar organizations, it would appear that the best arrangement would be a partnership, as it were, between the Government and representatives of social organizations, to set up agencies specifically for the care of the several types of handicapped persons. With branches in local centres this partnership would be able to establish the institutions required and keep alive the interest of sympathetic people in the needs of the unfortunate. There are only a few schools at present being run by Government agencies, but the situation requires the development of many more in localities where they can be of greater service and where the public is ready to co-operate in philanthropy and charity.

5. The one thing which we believe the Government must do in this connection is to provide as its own expense and responsibility the training of teachers who will serve in institutions for the handicapped. This training must be highly specialized and for the time being will have to be carried on by experts brought in for the purpose from other countries. Initially, there should be in our country at least one centre for the training of teachers for the blind and another for the training of teachers for the deaf and mute. To take over such a programme our personnel will have to be sent abroad for training and especialization.

6. In short, we believe that the main effort for the care of the handicapped should come from the community, financed in large measure by the charitable inclinations of the people, and managed by the co-operative work of philanthropic organizations and the Government, with the latter lending stability and soundness to the programmes as they develop.

THE EDUCATION OF HANDICAPPED CHILDREN**SUMMARY OF RECOMMENDATIONS**

1. The educational programme of handicapped children should include a provision for general as well as vocational education so that the individual may be able to earn his own living and to live contentedly within the limits of his handicap. Such children need a great deal more individual care and attention than normal children. (2).

2. The actual care of handicapped children is often suitably and effectively performed by the medical and educational services of private philanthropic organizations. The Government should lend its support to such organizations and coordinate their efforts. (3-4).

3. The Government must provide at its own expense and accept responsibility for the training of teachers to serve in the institutions for the handicapped. Initially, there should be at least one centre for the training of teachers for the blind and another for the training of teachers for the deaf and dumb. (5).

CHAPTER 17

THE USE OF GUIDANCE IN THE EDUCATION SYSTEM**I. Need for Educational Guidance :**

1. The need for educational guidance in a modern state can be amply justified, and we have stressed the advisability of its introduction, particularly in discussing scholarships and in the chapters on Secondary, Professional, Higher and Technical Education. A system of guidance and selection in modern education is made necessary by the differences in human abilities on the one hand and the growing specialization in the jobs and functions of a highly complex society on the other. In other words, it derives from the needs of a society with a complicated structure composed of individuals with specialized and differentiated abilities. This need is heightened in countries where limited resources make it imperative that maximum benefits are derived from the educational facilities that can be made available.

2. The possibilities of education for any individual are limited by his aptitudes and interests. One of the major causes of failure in the schools and colleges (especially in professional college) and of our low standards of achievement in professional and technical fields is the lack of proper counselling and guidance offered to our students in the course of their education. The choice of courses of study by students is too often dictated by unrealistic ambitions of parents or other irrelevant considerations rather than by the students' own endowments, capabilities, and interests. Tremendous waste and unhappiness are bound to occur when those with limited abilities are allowed to grapple with complex courses at the university level while highly intelligent students are left to waste their talents in unchallenging and unimaginative types of intellectual activity. We are convinced that this wastage can be substantially reduced through a properly administered programme of educational guidance and that the introduction of such a programme will ensure a much higher order of professional, technical and civic competence. Students will be happier and better adjusted if they take up courses that fit the pattern of their special talents and abilities. At the same time we shall come closer to the democratic ideal of social justice when, through proper counselling and selection, native endowment is recognized and encouraged irrespective of the social and economic status of those possessing it.

3. If we are to meet this need for educational guidance in our schools, a long range programme, based upon sound psychological theory, will be necessary. Such a programme should span the entire educational experience of the student from the very first class through the university. It must include the application of modern psychological methods for the selection and classification of students, such as objective tests of intelligence and specific aptitudes, cumulative records, and the use of modern techniques for assessing, reporting and recording the student's educational progress and social adjustment.

4. The Commission is firmly of the opinion that appropriate tests should be administered and proper counselling provided to our students at each of those critical stages in their educational careers where they are faced with the problem of choosing from among alternative educational possibilities. In the educational structure we are proposing in this report

these points will occur wherever there is a diversification of the educational programme, namely :

- (a) At the completion of Class VIII, when some students will be joining vocational schools for training in crafts.
- (b) At the completion of Class X, when students will be entering polytechnics or taking up prerequisite courses for commerce, medicine, and engineering.
- (c) At several stages in those secondary schools which offer diversified programmes where the student must select a particular area of specialization.
- (d) At the completion of Class XII when some students will decide to join a college or university and others to enter professional programmes in medicine, law and engineering.

The nature and scope of the information that is required for the student to make a wise decision will vary with the nature of the decision to be made and the stage at which it is made. A number of sets of tests will be required to provide information that is both appropriate and adequate ; but only the skilled guidance officers who are ultimately responsible for the operation of the programme are qualified to decide which batteries to use at each stage.

II. The Production of Tests and Evolution of Counselling Procedures :

5. Before an adequate programme of testing and guidance can be put into effect in our schools and colleges, several steps are necessary. Although large number of tests have been devised in other countries for the measurement of a variety of general and specific aptitudes, few of them can be successfully employed here without adaptation. We must begin to construct instruments of evaluation which are indigenous to the culture and environment of our youth and which are related to the requirements of our own educational and vocational programmes. We must also have counsellors and psychometrists who are qualified to administer and interpret these tests and who are competent in the techniques of guidance. As soon as it is possible to train them, we should have at least one person in each secondary school, vocational school, polytechnic, college, and university who is specifically trained in the area of guidance and testing and who will be primarily responsible for the organization and operation of the testing and counselling functions in his institution. We would also wish each secondary school and college teacher to possess at least a rudimentary knowledge of testing procedures and the techniques of counselling. An organized effort must also be made to produce pamphlets giving vocational information on opportunities of specific jobs open to those having particular educational qualifications and which would describe a variety of jobs and professions so that the student may judge his interest and qualifications in relation to specific vocational opportunities.

6. The implementation of such a plan will have to evolve through careful planning. Actual testing and selection should be introduced at the various stages only after satisfactory instruments are available and when personnel to administer and interpret them have been trained. The importance of this venture and the fact that it will take time to materialize requires that a start be made at once on the planning and organization needed to put it into operation. We recommend, therefore, that :

The Ministry of Education should establish a bureau with such branches as may be necessary to undertake the construction

of tests and other evaluative instruments required in a comprehensive national programme of counselling and guidance ; to train the personnel required to implement the programme ; and to prepare such other materials as may be useful to counsellors.

7. It should be pointed out that the Armed Services have already had considerable experience and success in devising testing materials and in applying counselling techniques. We would strongly urge that the Ministry of Education make use of this reservoir of experience in the planning and development of this programme.

THE USE OF GUIDANCE IN THE EDUCATION SYSTEM

SUMMARY OF RECOMMENDATIONS

1. Appropriate tests should be administered and proper counselling given to students at those critical stages where a choice must be made from alternative educational possibilities, *i.e.*, at the completion of Classes VIII, X and XII and at those points in diversified school programmes where students must select an area of specialization. (4).

2. Tests and other evaluative instruments indigenous to the culture and environment of our youths should be designed to measure a variety of general and specific aptitudes. (5).

3. One person in each secondary, technical and higher institution should be specifically trained to organize and operate a programme of testing and guidance. (5).

4. The Ministry of Education should establish a bureau to undertake the construction of tests ; to train the personnel required to implement a national programme of guidance ; and to prepare material that may be useful to counsellors. (6).

THE TRAINING AND CONDITIONS OF SERVICE OF TEACHERS

I. Introduction :

1. It has been well said that no system of education is better than its teachers. We have stressed throughout the report their pivotal role, and we need only say here, though we say it with force and without reservation that none of the reforms we are proposing will succeed unless we are able to recruit to the teaching profession at all levels men and women of the highest abilities, and can train them and those already in service to the same standards as are expected in other countries, and give them that status in our society which their national importance warrants.

2. This we are convinced is the correct approach to the teaching profession. We have already stressed the central role of education in developing out national talents, and in the release of the energies, skills and genius of our people. It is obvious that education will fall short of these goals to the extent that our teachers fall below the standards we expect of them.

3. When we speak of standards in this connection, we have in mind something more than simply academic qualifications. Our teachers must have these, but they should have more besides. They should have a high sense of vocation, a sense of service to the nation, a willingness to help in constructive work, a determination to find substance for teaching in the conditions and materials around them without waiting for imported aids and apparatus, and a developed sense of professional ethics and honour. If we recognize the importance of teachers, as we do, then it is for the teachers themselves to realise the importance of the qualities mentioned above.

4. Teachers, like engineers, are potential nation-builders. We have stressed that one of the characteristics of our engineers should be their determination to find uses for locally available materials. Such initiative and self-reliance should be equally characteristic of our teachers. We have heard complaints that our teachers cannot teach certain subjects in the absence of maps, apparatus and other teaching aids. There is no doubt that these are important and that for teaching of science at the higher levels of schools, scientific apparatus is practically indispensable. But a good teacher even in countries where such equipment is readily available, will often prefer to use the simple devices he and his pupils have made themselves, knowing that there is an extra educational value in such a procedure. The UNESCO book *Suggestions for the Teaching of Science* is full of ideas for the teaching of quite advanced scientific principles by the use of such discarded objects as needles, tins and cotton reels.

5. We are not preaching here a gospel of the second best. Rather we are saying that a resourceful teacher will turn to whatever is available locally for his teaching aids. We are well aware of the severe handicaps under which many of our school teachers work—lack of space, overcrowded class-rooms, poor pay, and low status in the community. We believe that all these and others should be corrected and are making proposals accordingly. The reforms which we propose in the content of education and in teaching methods need the full co-operation of the teacher as well as his being well qualified and having an adequate sense of security.

6. It is essential for a successful teacher to have the following characteristics : he should be academically well trained in the subjects he teaches ; he should have had sound professional training in how to teach his subjects and understand the children in his charge and he should possess a deep sense of professional honour. It is also essential for him to have a security of tenure and a scale of pay commensurate with his status ; he should work in an environment which honours him for the contribution he makes to society.

II. Admission Requirements :

7. To an important extent the amount and quality of a teacher's pre-professional education will determine his professional competence, for no amount of teaching skill can make up for inadequate knowledge of the subject taught.

8. In the course of time, when the reforms we propose have been implemented there will be only two categories of teachers (i) those for Classes I to VIII, and (ii) those for Classes IX to XII, with a large number of subject specialists in the latter group. It will then be possible and also necessary to have uniform qualifications for teachers in each of these two categories. However, it will take some ten to fifteen years before we can provide compulsory schooling for eight years. Meanwhile we shall continue to need the services of teachers for four types of schools : Primary, Middle, Secondary (Classes IX and X), and Higher Secondary (Classes XI and XII), with qualifications as follows :

- (a) *Teachers of Classes I to V.*—If our proposal for making primary education compulsory and effective is to be implemented, we shall need 1,50,000 teachers for the purpose. At present the qualifications for primary school teachers vary from province to province and from region to region within West Pakistan, but it is most necessary that these be brought into uniformity. At the moment, however, we cannot insist on a higher qualification than the Matriculation for the admission to training colleges of those who wish to be teachers in our primary schools.
- (b) *Teachers of Classes VI to VIII* must, we suggest, have passed the Higher Secondary examination before training.
- (c) *Teachers of Classes IX, X, XI and XII* should be qualified as at present with Bachelors' or Masters' degree respectively for lower and higher secondary teaching.

9. The suggestion has been made that we should make wider use of the system of providing prospective candidates for school teaching with a year's teaching experience to determine their aptitude and suitability before their enrolment in a training college. We believe that every effort should be made to interest the pupils of secondary schools in teaching as the first choice of profession and not as a last resort when all other avenues of employment have been explored. We do not feel, however, that the proposal to send the interested pupil straight to teaching is likely to produce either more recruits or a better type of recruits. It seems to us an expensive procedure and in a situation where there is a shortage of teachers, the tendency will be to retain all such teachers in schools either as untrained teachers or to send them up for training too early, so defeating one of the main purposes of this exercise.

10. We feel that the present procedure should be retained whereby pupils can join the training institutions either at once or after working for some time in institutions. There is no reason, however, why the pupil should not be encouraged to consider teaching a desirable profession. We have suggested elsewhere the appointment of Careers Masters in secondary schools and we hope that they will lay particular emphasis on the suitability of this career.

III. Duration of the Training Course :

11. At present, the training period for the B.T. course is one year while for the teachers of primary courses it varies in different parts of the country. There is general agreement that the training period of one year for any course is inadequate. Considering the present stage of educational development in Pakistan, it may not always be possible to achieve the highest professional requirements. Even so, it is necessary to raise the duration of the course in the case of certain categories of teachers. We have given this matter careful thought and have the following suggestions to make :—

- (a) *Teachers for Classes I to V.*—The course of training should be for one year, followed by an in-service training programme during summer vacations after five years of experience. We would normally have suggested a two years' course, but in view of the large demand for teachers we are constrained to limit the course to one year in the hope that it may be possible after five years to raise it to two years. To make up for this shorter course, we have suggested the compulsory refresher course after five years of teaching.
- (b) *Teachers for Classes VI to VIII.*—This course should last two years. We regard this stage as extremely important and believe that a course of at least two years is essential.
- (c) *Teachers for Classes IX to X.*—The course should be of two years' duration.
- (d) *Teachers for Classes XI and XII.*—A graduate who has done three years for his first degree course and a two years' course in a training college will be well qualified to teach in Classes XI and XII. However, it will be a few years before such graduates are available. In the meantime, the existing procedure should continue under which these classes are taught by M.A.'s, for whom we would suggest that a short course in methods of teaching should be organized. As these higher secondary classes are more akin to school classes and are to be separated from the university stage, it is necessary that the teachers of these classes should also have a knowledge of the methods of school teaching.

12. We fully realize that the lengthening of the training course may slow up expansion. We are convinced, however, that the reforms suggested by us will not bear fruit unless this fundamental reform in the training of teachers is carried out. Indeed, this is the key to all educational progress, for a one year's course is not adequate to equip the teacher to discharge the responsibilities which we have entrusted to the teaching profession.

13. The teacher needs not only to deepen his knowledge of all the subjects he is to teach, he must also learn the techniques and methodology of teaching and have time to practise these as well as to acquire insights into child psychology and the nature of child growth. In addition, he must understand class organization and school management, know something of school and community relations and of the ethics of his profession, and have time to develop some special interests. No course of less than two years' duration can possibly achieve all these objectives.

IV. The Nature of Professional Preparation :

14. In the introduction to this chapter we have indicated what we believe should be the characteristics of the good teacher. Necessarily, these should be taken as the objectives of teacher training and should guide the framing of the curricula of training institutions. We do not intend by this that there should be standardization of curricula and syllabuses for normal schools and training colleges throughout the country. The quality and objectives pursued should be similar but there should also be room for carefully directed and controlled experiments and a variety of approaches in achieving them.

15. While experience gained abroad of teaching methods, educational theory, child psychology, and educational practices is undoubtedly of value, the stress throughout should be on encouraging the student teacher to think in terms of the Pakistani child, and of subject-matter related to our national conditions. To achieve these aims, it is necessary that the staff of training institutions should think beyond the content of the curriculum to be covered and concern themselves also with what attitudes are being developed in the students. Closely allied to this is the need to need to cultivate in students a high sense of professional ethics, an understanding of the role of the teacher in nation-building, a willingness to work beyond the demands of the time-table, a sense of responsibility for leadership in community development, and the ideals of personal integrity and probity.

16. The matters discussed in the previous paragraph are what might be regarded as the non-professional aspects of the teacher's preparation for his career. However defined, we regard these as essential elements of his preparation and strongly recommend that training institutions be constantly concerned with the development of healthy attitudes in their students and that they include a course on professional ethics in all curricula.

17. Turning now to the question of strictly professional training, we may summarize the elements of the curriculum required as : training in the methodology of teaching and in the theories of education ; deepening the student's knowledge of the subject-matter he will teach ; a study of child psychology and child growth.

18. What to teach is as important as how to teach it, and it is the responsibility of the training institution to ensure that graduating teachers are properly equipped to teach the subjects required at the level for which they are expecting to qualify. This means not only a broad knowledge of a subject but, more importantly, an understanding of its basic principles and significance, a knowledge of what aspects of the subject can be understood by children at different age-levels, and what should be the objectives in teaching the subject at each level. Above all, the student must be

led to appreciate that his task as a teacher will not be simply to cram undigested data into unwilling pupils, but through his knowledge of a subject to awaken their intellectual curiosity, develop their understanding of nature and society, and for certain subjects, show them how their knowledge can be applied in manual skills or to specific situations.

19. This ideal pre-supposes that the teacher is master of his subject and has a deep understanding of the psychology of children. This knowledge of the principles of child growth and child behaviour should accompany a knowledge of some functional psychological techniques which will be of use to him in his work. These will include the methods and procedures of educational measurement; of educational and vocational guidance; identifying and handling the problem of the retarded, handicapped, or disturbed child. It is hoped that eventually some form of professional psychological service will be available to help the teacher in dealing with these children, but the majority of our schools this must be at some time in the future, and, in any case, the teacher will always have to rely on his own knowledge and resourcefulness to handle most of these cases. Some teachers, particularly those who have taken a B.Ed. or M.Ed. at a university, may be able to specialize in these subjects and develop such services within the school to which they are appointed. We have had occasion elsewhere to point out that these tests and psychological procedures must be developed and standardized for our children and our conditions. We cannot use the tests standardized for other countries without modifying them to suit our own conditions. This forms part of the need to institute fundamental research into the psychology of our children.

20. Combined with a knowledge of his subjects and of the pupils he will have in his charge, a teacher must receive some practice in handling children and acquire some knowledge of the techniques of teaching and the use of teaching aids. Provisions already exist for periods of practice teaching and the observation of demonstration lessons. The staff of training establishments can intensify such work by making every class they take with student teachers demonstration in good teaching methods. Lectures on method should aim at encouraging students to take a creative and imaginative approach to lesson preparation and to use, as far as possible, activity method to replace the common practice of reciting facts before children. Courses on educational methods should also include material on the history of education, its role in society, current theories of education, and problems of educational practice. They should also deal with some aspects of educational administration, beginning with class organization and including such items as keeping records, making annual returns and running school clubs.

21. *The Staff Training Institutions.*—The quality of training given to our teachers will obviously depend largely on the professional competence of the members of the staff of the training institutions. Up to the present however, this professional competence has not received sufficient attention and we have too often been content simply to transfer teachers from high schools to serve in the training establishments without giving them any special preparation for their work.

22. To remedy this defect it is necessary to establish a training college for the training of staff for teachers' training colleges. This is in line with the modern practice abroad. East Pakistan has already established such an institution and we recommend that a similar institution be established in West Pakistan. In order to prepare adequate numbers of trained staff

for teachers' training institutions and to keep them subsequently in touch with school problems and work, the following programme seems essential :—

- (a) There should be a staff training college in each Wing of Pakistan for primary school teachers training institutions.
- (b) These colleges should include a research unit where educational problems relating to primary teacher training can be investigated.
- (c) Every staff member of these colleges should be seconded periodically—preferably at the end of every five years—to serve as a teacher in a typical school so that he may keep himself thoroughly acquainted with school needs and problems.

23. Apart from this professional training for his work, the teacher of a training institution should have adequate academic education. Whenever possible he should possess a B.Ed. or preferably M.Ed. Those conducting courses in subjects, such as history, geography, and science should possess university degrees in these subjects. Those teaching child psychology should have high academic qualifications in this subject combined with teaching experience.

24. Our teaching of foreign languages is extremely weak. We tend to teach them either as literature or as classical languages and not as spoken ones. Our training colleges should attempt to recruit native speakers of the language who have been trained in the methods of teaching the language concerned as a functional foreign language.

25. A member of the staff competent to lecture on the ethics of the teaching profession should be on the staff of every college. This matter is of such importance that we believe there is a case for creating a national profession in professional ethics, the holders of which would regularly visit our colleges to lecture.

26. The staff of training establishments, such as that of the proposed Primary Teachers Staff Training Colleges, need periodic experience of teaching in schools and their performance in this should count in the assessment of their work.

27. The work load of the staff of training institutes and colleges should be at least equal to that of the staff of professional colleges. Apart from the time they may be called on to spend lecturing, they should also be assigned periods for tutorial work, student guidance, conducting demonstration lessons and guiding practical work, as well as for extra-curricular duties. Time should be allotted also for the preparation of lectures and for individual study and research.

V. Training of Crafts Teachers :

28. To give effect to our proposals regarding the diversification of curricula at the middle and secondary stages, a high priority must be given to the training of crafts and practical arts teachers and of science teachers. The staffs of training establishments should be immediately strengthened in these departments and this proposal should be co-ordinated with those on teacher training in the chapter on Technical and Vocational Education.

VI. In-Service Training :

29. Apart from the fact that large numbers of our teachers at all levels are untrained, and continued and vigorous efforts are thus needed to equip them professionally for their work, it must be recognized that no teacher once trained can throughout his career be regarded as fully competent without periodic refresher courses. This has been accepted in all advanced countries where provisions are made for the teacher to refresh his knowledge and ideas at given intervals. It is time for us also to stop treating refresher courses as a luxury and to accept them as a necessity if educational standards are to be raised and maintained. To enforce this we propose that, once facilities are available and courses organized, increments should be withheld from teachers who have not attended a refresher course at least once in five years.

30. Education Extension Centres are being opened in both wings. These will initially give training to the administrative staff of departments of education—including inspectors—, to subject specialists for multi-purpose schools, and to headmasters. These Centres when developed will provide inspiration and leadership for the education services of the provinces. The in-service training of teachers will, however, have to be provided in the training colleges. For these purposes refresher courses of about two months' duration should be organized in training schools and colleges at the district and regional levels. The courses should be drawn up by the staff of these institutions, in cooperation with inspectors and directors of education, and special staff may be appointed to conduct them. There should be courses in teaching methods, educational theory, psychology, and the teaching of particular subjects.

VII. Research :

31. Like any other subject, education can become routine and repetitive unless it is constantly refreshed by original thinking and research. There is no doubt that the field of teacher training requires new inspiration and leadership. To some extent educational leaders can receive such inspiration from training or study tours abroad. Foreign thought and practice in any of the social sciences has significance for us however, only when it has been re-interpreted and reshaped in terms of our own conditions and requirements. Apart from this, it is inconsistent with our national aspirations that we should remain for ever dependent on foreign ideas for inspiration. We, too, can contribute to world knowledge and practice in education and eventually attract foreign students to our educational institutions.

32. For these reasons we are strongly of the opinion that post-graduate work in education at the Doctorate level should be properly developed in at least some of our institutions. Research will deal with such subjects as education theories, child psychology and growth, theories and the methods of measurement, the history of education, educational theory and educational sociology.

33. There remains a wide field of needed research in education, however, which is more appropriately within the scope of the Education Department. This is the field of functional, practical research in education, required to improve our administrative practice and in certain cases to lower the costs of schooling. We have in mind research into such things as school buildings, equipment and teaching aids, the role and functions of

a school inspector ; methods of financing education. We have stressed elsewhere the need for applied research in curriculum development, tests of aptitude and intelligence, and textbooks. There would be many advantages, it appears to us, in carrying out research of this nature and in developing the consequent programmes of consultation and publication on a provincial basis. Such research programmes are a normal part of the apparatus of education in all advanced countries, where education would have been unable to develop as it has without their existence. Whereas these countries are able to leave such services to a multiplicity of agencies, it will be necessary for us to concentrate our efforts and, at least initially, to avoid duplication and unnecessary dispersion.

34. Plans exist for the setting up in each wing of Institutes of Education. We believe that these would be most suitable for carrying out the kind of work we are referring to. As both the universities and departments of education are administering programmes of teacher training and since the new institutes will be required to undertake research in both fundamental and applied educational problems, it will be desirable to establish them as autonomous units under Boards of Governors on which the universities and departments of education should have due representation. This arrangement will ensure that the research programmes grow out of actual problems faced in running an educational system. Autonomy will permit the planning of procedures and the time table so as to obtain valid results. The permanent staff of these Institutes should hold research degrees and preferably have published research material. They should also be free to recruit temporary staff for particular projects, approve contracts for research projects with other institutions, and welcome doctors of philosophy who wish to pursue further individual research related to the programmes of the Institutes.

35. Publication is a normal consequence of research and the departments of education should ensure that appropriate publication programmes, including journals, pamphlets, monographs, and teachers' magazines, are developed. These may be shared, as seems appropriate, between the proposed Institutes and the Bureaux of Education.

36. As in other fields there will be the need for co-ordination of research work in education at the national level, and we recommend the setting up of a Council of Education Research with a small staff and an adequate budget to carry out this task and assist in stimulating research work.

• VIII. The Status and Conditions of Service of Teachers :

37. The above discussion, will remain theoretical unless the teacher is rewarded materially. It is important that the teacher should receive a scale of salary and social recognition consistent with his qualifications. It is common knowledge that this is not the case today. The teacher does not get a salary which keeps him contented, and his achievements are never adequately recognized. He often works in conditions which would daunt the bravest spirit, and except for a few cases, the profession does not offer the teacher fruitful rewards.

38. In view of the poor scales of salary, he is obliged to supplement his living with private tuition. A vicious circle is created wherein low salary leads to poor work and even malpractices which, in turn, contribute to low public esteem. It is little wonder that in such conditions the best talents are not attracted to the profession, that educational standards are lowered, and the whole system falls into disfavour.

39. This situation cannot be rectified overnight. To achieve universal acceptance of the true social worth of the teacher will require long and patient efforts by the departments of education and by the teachers themselves in co-operation with enlightened sections of the community. Though certain steps can be taken by the Government, public respect for the teaching profession is something which cannot be legislated into existence. It is something which the teacher must win for himself, with the assistance of official action. The esteem and respect in which he is held will derive mainly from his ability to endear himself to his pupils and from the public regard he wins for himself through service and community leadership. We make some proposals below for official action for the improvement of the material conditions of teachers and their status in society, but we urge that the central fact be firmly grasped that suitable action must be taken in all training establishments and in refresher courses to awaken and deepen in teachers this sense of professional responsibility.

40. Such action can also be supported by the growth of strong professional organizations whose programmes are oriented towards constructive work and by the contribution of the teaching profession to the building of the nation. The growth of professional organizations along these lines should therefore be encouraged. Such organizations alone or in co-operation with the Departments or the Institutes of Education can make valuable contributions through the publication of attractive, well-written, professional teachers' journals.

41. We have suggested in the chapter on primary and secondary education that annual awards should be established for teachers and that such awards may be made by the President and by the Governors on appropriate occasions every year. The story of the achievement of these teachers should be featured in the press, radio, and news-reels.

42. The basic factor, however, is one of salary. This should be fixed at a level so that the teacher will not feel compelled to undertake private tuition or any other activities likely to undermine his usefulness. We believe that the steps we are proposing for the financing of secondary education, will promote the raising of salaries of teachers to a satisfactory standard.

43. In addition to appropriate action on salaries we suggest that steps be taken to set up provident funds and retirement benefit schemes to which teachers and their employers would contribute throughout their careers and which would relieve them of the worry of financial burdens in case of sickness and after retirement.

44. We believe that if the above steps are taken and applied vigorously, along with sustained publicity on the importance of the teaching profession, considerable progress will be made in restoring to the teacher the good name he deserves and which he needs to make his best contribution to national and social progress.

THE TRAINING AND CONDITIONS OF SERVICE OF TEACHERS

SUMMARY OF RECOMMENDATIONS

I. Introduction :

1. The provision of suitable teachers and their training is a matter of national importance. (1, 4).

II. Admission requirements :

1. The minimum qualifications for admission to the training courses for teachers at various stages of education should be as follows :—

(a) Teachers for Classes I to V .. Secondary School Examination Certificate (Matriculation).

(b) Teachers for Classes VI to VIII .. Higher Secondary School Examination Certificate (Intermediate).

(c) Teachers for Classes IX and X .. Bachelor's Degree.

When graduates of the 3-year course are available, they will be suitable for teaching classes IX to XII. Meanwhile, Classes XI and XII should continue to be taught by teachers with a master's degree. (8).

III. Duration of Training Course :

1. The duration of the training courses for teachers of different stages of education should be as follows :—

(a) Teachers for Classes I to VI .. 1 year.

(b) Teachers for Classes VI to VIII .. 2 years.

(c) Teachers for Classes IX and X .. 2 years.

(d) Teachers for Classes XI and XII .. At present M.A. ; to be given short courses in methods of teaching. (11).

IV. The Nature of Professional Preparation :

1. A teacher-training programme should ensure (i) a sound grasp of the subjects, (ii) knowledge of child psychology and insight into the growth and behaviour of children at various stages of their lives, (iii) the methodology of teaching and the skill to use up to date techniques, and (iv) a high sense of professional ethics. (15, 16, 17, 18).

V. The Staff of Training Institutions :

1. A college for the training of teachers of training colleges should be established in each wing. (21, 22).

2. Teachers of training colleges as well as of the primary teachers staff training colleges should be seconded periodically to serve as teachers in schools. (26).

3. A separate lecturer in 'the ethics of the teaching profession should be appointed in every training college for teachers and a national professorship in professional ethics should be created. (25).

4. High priority must be given to the training of teachers of science and of practical arts and crafts. (28).

VI. In-Service Training :

1. Refresher courses for teachers are not a luxury but a necessity. Teachers must keep themselves in touch with latest teaching techniques by attending refresher courses at least once in 5 years, and their increments should be withheld if they do not do so. (29).

2. Refresher courses for teachers should be organized in the training schools and colleges at the district and regional levels. (30).

3. Administrative staff, inspectors, headmasters, and subject specialists for multi-purpose schools should receive in-service training through the education extension centres. (30).

VII. Post-Graduate Training and Research :

1. Provision should be made for Post-graduate study in education at the doctorate level in some of our universities. (32).

2. Fundamental academic research in education should be centred in the training colleges and university departments of education. Functional and practical research should be carried on in the proposed institutes of education in East and West Pakistan. (34).

3. A Council of Educational Research should be set up at the Centre to co-ordinate and stimulate research work on education. (36).

VIII. The Status and Conditions of Service of Teachers :

1. Teachers should receive a scale of salary consistent with their responsibilities, function, and status in national life. Provision should also be made for provident fund and retirement benefits. (37, 42, 43).

2. Teachers should receive special awards for merit from the President and the Governors on appropriate occasions. The achievements of good teachers should also be featured in the press, radio, and news-reels. These measures will, we believe, serve to promote the social recognition of teachers. (41).

CHAPTER 19

PROVISION OF SPECIALIZED STAFF AND TRAINING

1. In addressing ourselves to the problems of educational reform we have constantly kept before us the ultimate objective of making our educational system adequate to meet the needs of the country in all spheres of national life. The realization of this aim involves, among other efforts, the expansion and strengthening of technical programmes such as engineering and agriculture which are closely related to the economic development of the nation; the expansion of some and the creation of other university departments in certain specialities to provide competent personnel for a variety of new professions; and a general improvement in the quality of higher education both through a reorganization of the degree courses and an increased level of competence in the teaching staffs. The implementation of these recommendations will require hundreds of additional teachers with sound backgrounds in advanced study and research.

2. Although it is quite evident that we do not have in Pakistan at the present time a sufficiently large number of adequately trained people properly to staff the programmes we have envisaged, the Commission is firmly committed to the proposition that our universities must be rapidly brought to a point where they can then provide the nation with all of the trained manpower it requires except, perhaps, for those persons who must be trained at an exceptionally high level in the most advanced technical fields. For some time to come we shall have to send this type of persons to leading foreign universities, but we do not accept the position that we must for ever depend upon foreign universities to train our people for the normal requirements of college and university teaching and research. We cannot afford the luxury of and indefinitely imported economy in education any more than we can in agriculture or industry, and there is no reason why, with careful planning and organization, we cannot achieve a reasonable self-sufficiency in this sphere in a relatively brief space of time.

3. It is clear that for some time to come our own universities will not be in a position to prepare the kinds of personnel that are required in numbers sufficient for our needs. At the same time it is imperative that the advanced educational programmes be properly staffed if they are to make the contribution they are intended to make to our national development. The conclusion is inescapable that if we are to have competent staff members it will be necessary to provide training for large numbers of our most promising students at universities abroad. In doing so, however, we should keep our sights focussed clearly on the ultimate purpose of our overseas training schemes, namely that they should serve as the means by which we can achieve educational self-sufficiency in the shortest period of time.

4. Experience with the overseas education of Pakistan students in the past has not been too happy. Many of those who have gone abroad to complete their studies have not been absorbed on return into positions that utilize their talents and training. Those who have come back to accept positions in colleges and universities have been frustrated and discouraged by poor salaries, inadequate housing and, at times, by an almost jealous unwillingness on the part of their superiors to permit them to use what they have learned either in teaching or research. A large percentage of the total have failed to return at all and have sought employment in the countries in which they studied.

5. As in so many other areas, our failure to make optimum use of the programmes for advanced training abroad can be traced in large part to a lack of planning and a failure to accept the realities of economic existence. There is no evidence in the past operations of our overseas training projects that they have been oriented toward any precise and defined objectives. No attempt has been made to determine exactly what the needs of the country are for people trained in particular disciplines or how and where a man sent abroad to study may be used most effectively when he returns. Those who have gone overseas have had no prospective position around which they could build intelligently an appropriate course of studies ; no orientation to their own country and the education system within which they would be working ; and very little feeling that their Government had any particular interest in their progress or their problems. In short, there has been no systematic effort made to marshal the opportunities available for educating our best students in first-rate foreign universities for the sake of national progress.

6. If we are to secure the services of our young foreign-trained scholars, we must be willing to accept certain facts and to adapt our procedures to the existing situations. We must realise (1) that young men with excellent qualifications from internationally recognized universities will not be attracted by the initial salaries we are accustomed to offer ; (2) that first-rate teachers and researchers in the scientific and technical fields are exceedingly scarce and that their talents are bid for not only within the educational field but by industry as well ; and (3) that we cannot staff our colleges and universities adequately if we operate within a rigid system of salaries and teaching posts. The application of this knowledge to concrete situations will mean that we must be willing and able to offer higher starting salaries to well-trained people from foreign universities. In this regard universities may engage these people on five-year renewable contracts at terms that are mutually acceptable. Also we must gear our university salary structure to the conditions of supply and demand, and this may require our paying teachers and research workers in those disciplines where the supply of qualified people is limited higher salaries than are paid to those in other fields where the supply more nearly matches the demand even though their degrees may be the same. Unless we proceed on this basis, we will continue to lose many of our most talented scholars to better opportunities in other countries or to business and industry in our own.

7. Equally important are the conditions and atmosphere in which our teachers must live and work. We must make available to them the space, equipment, books, and periodicals which will permit them to utilize fully their skills in teaching and research. Less tangible but just as crucial to the young scholar is the attitude of his colleagues and superiors toward him and his work. He will seek those opportunities that give promise of permitting him to apply the knowledge and skill he has acquired and where he will be encouraged to pursue his own interests in research. It is clearly in the national interest that such an atmosphere pervade our colleges and universities and that no one should be allowed to protect his own position and prestige by stifling the imagination and initiative of his colleagues.

8. Most of our universities and many of our colleges are located in areas where it is extremely difficult to find suitable housing at a price the teacher can afford to pay. People who can live in reasonable comfort elsewhere will not accept positions where they must pay half of their

salary for adequate living quarters. We will never attract these people to our campuses until we are willing to provide them with a decent house at a reasonable rent. Here we feel that Government may solve this problem through the establishment of a public corporation which would loan money to higher institutions for the construction of staff housing in the manner outlined in another chapter.

9. The proper utilization of the overseas scholarships available to us requires some rigorous planning. Fundamental to this procedure is a clear and continuing determination of the exact needs of our institutions for individuals with specific types of advanced education. To secure the information necessary to evolve a rational plan, a complete survey must be made of the prospective requirements for personnel at each college, university, and institute. Such a survey should ascertain the anticipated needs of these institutions over a five year period. Continued scrutiny by the Ministry of Education should be undertaken, with the assistance of standing committees of experts to revise estimates each year.

10. At the same time we must establish a comprehensive list of those institutions throughout the world which are particularly noted for their advanced work in specific disciplines. Under such an arrangement we should attempt to place those students we wish to train in physics, for example, only in those foreign universities where the outstanding men in this field are working and whose international reputation is first-rate in teaching and research in physics. In this way we can be assured that those who are preparing to teach in our own universities have come under the influence of the very finest minds in their field of study and have been working in an atmosphere charged with the inspirational excitement of discovery.

11. To complete the plan two additional steps are necessary. First, procedures must be developed which will assure the assignment of foreign scholarships only to the intellectual cream of Pakistan youth. Moreover, those to whom these grants are made must be those who are imbued with a desire to use their talents in the service of the nation and its people and who view their opportunities not as a chance for personal aggrandizement but rather as an avenue of service and a serious responsibility. Secondly, procedures must be established through which each individual, before he leaves for overseas, knows the position he will fill when he returns, the salary he will receive, and the general conditions under which he will live and work.

12. We recommend, therefore, that the Ministry of Education should take necessary steps to utilize foreign scholarships along the lines suggested in the preceding paragraphs. The Ministry should undertake to (a) determine the precise needs of the colleges, universities, and institutes for personnel with advanced educational and research qualification; (b) maintain a list of the outstanding universities of the world according to achievement in the several academic disciplines together with up-to-date information about the possible acceptance by them of Pakistan scholarship students; (c) develop procedures to assure the selection of the most qualified students for scholarships awards and their appointment to suitable posts upon their return; and (d) negotiate through appropriate channels with private and governmental agencies in foreign countries for the amount of financial assistance required for scholarships to meet the needs of the nation under this programme.

13. Before leaving the general area of foreign training, we would like to make a few observations on the operation of the programme of fellowships abroad. Fellowships are generally of two kinds: (1) those for advanced study in specialized fields at the post-doctorate level, and (2) awards for professional people to expand their knowledge and experience through specific opportunities to work in areas of their competence. The former are intended for senior professors and are in the nature of 'prestige' fellowships which allow our most eminent scholars to pursue their own programmes of study and research in foreign universities or institutes. The latter are designed to permit our professional workers to develop specialized knowledge and techniques through actual experience. There are also available from time to time grants to enable Government officers and university teachers to make brief fact-finding visits of educational systems in other countries. We are not concerned here with this type of grant, but with a more substantial programme of serious study, research, and work experience. The maximum benefit can be derived from these scholarships and fellowships only if our professors who enjoy them are actually engaged in their own programme of study and research in a university or institute of higher learning, and only if our professional people who utilize them are actually working in a soundly operating programme.

14. It is distressing that many of those who have fully and well utilized the opportunities of their fellowships have returned to positions that have little relationship to the work they were doing while overseas. In some cases, there may be valid reasons for this poor use of manpower, such as the award of promotion, to remove them from their special field. The Commission feels, however, that procedures can and must be found to permit this type of highly trained professional person to advance within his department without completely removing him from the very areas in which he has developed experience. A more flexible salary scale and provision for the specialists to obtain personal advancement within the service without changing positions will help to remedy the problem. Unless some such provision is made, these fellowships and scholarships will never produce fruitful lasting results.

15. The preceding recommendations are, of course, intended to bring us to a long-range solution of one of our most pressing manpower problems. The fruits of their implementation will not be enjoyed for some time, and we cannot wait until our first scholars return to initiate the improvements in our educational system that are required in the national interest. The gap between the demand for and the supply of competent staff in our higher institutions will continue to exist for some year. To bridge this gap we are recommending certain interim measures designed properly to staff the institutions and programmes called for in this report.

16. At the present time hundreds of Pakistani students are enrolled in colleges and universities in the United Kingdom and the United States. We recommend that all these students, particularly those who are approaching the attainment of advanced degrees, be contacted and interviewed by a committee appointed by the Government to determine: (a) the qualifications of each to teach or to do research; (b) the kinds of positions they wish to obtain and where they would like to be located; (c) the salary, working conditions, and other amenities they would expect if appointed; and (d) such other data as may be pertinent and useful in attempting to secure the individual's engagement in a higher educational or research institution in Pakistan. It is important that the persons making these contacts are informed of the kind of opportunities available here:

and also that they are competent to evaluate an individual's suitability for a teaching or research appointment. The Ministry of Education should set up one or more such selection commodities in the field of arts, sciences, and engineering to conduct these intervals. The Educational Attaches in London and Washington should serve as secretaries of those committees for Europe and North America respectively ; and the other members should be eminent Pakistani educators assisted by local specialists.

17. The information obtained through these interviews should be consolidated by the Ministry of Education and distributed to the colleges, universities, and research institutes in Pakistan. Provision should be made to maintain continuing contact with each individual until he has been suitably placed. Such an approach should serve to draw into the educational stream a number of qualified people who otherwise might not return to Pakistan or would be absorbed into less vitally needed employment.

18. In other sections of this report the Commission has recommended the establishment of a number of new institutions some of which will be of university status. These institutions must be properly staffed and we have already pointed out that there are not now enough competently trained people in Pakistan to staff them. When we have exhausted the available supply of Pakistani nationals to teach in these institutions, there will remain hundreds of posts to be filled. At this point, we may well turn to our friends in other lands to supply us with the manpower we need. In other countries where there is a similar lack of expertly trained manpower, arrangements have been made for foreign countries to provide a large proportion of the teaching and research staff for their advanced educational institutions. We feel certain that similar arrangements can be made by us with the International Co-operation Administration, the Ford Foundation, the Colombo Plan Aid Agencies and with a number of national governments. Even though trained scientists and engineers are in exceedingly scarce supply, there is a growing willingness on the part of many Western countries to send to Asia men who are highly trained in these fields. In most instances, the cost of bringing such people to Pakistan and maintaining them here can be absorbed in our existing aid grants or through special arrangements with private and governmental agencies which are now providing us with economic assistance. We consider this programme of fundamental importance and, therefore, we should be prepared to devote some of our own funds also.

19. We envisage a Scholarship|Fellowship Programme of 250 scholars a year. But our training needs are much greater and progress must be more rapid. In the chapter on Higher Education we have suggested that special courses be arranged for the training of university and other staff in Pakistan. Foreign teachers brought in as suggested above can be further used to assist in arranging and teaching these special courses.

20. As we proceed with plans to staff certain of our technical institutions and departments with foreign nationals, we should keep clearly in mind the temporary nature of such arrangements. As qualified Pakistani teachers become available through the schemes outlined earlier in this section, they should replace those supplied by the contracting agencies until the entire institution is staffed by our own teachers. It is our belief that arrangements of this type will permit the nation to enjoy the benefits of the proposed technical programmes much sooner than would

be possible under normal circumstances. By being able to put these institutions into operation immediately, we can quicken the pace of economic development and more rapidly realize the ultimate aim of a better and fuller life for all our people. We would specifically recommend, therefore, that the Ministry of Education :

- (a) take steps, in the manner suggested in the previous paragraphs, to draw into the programme of advanced education and research all of the qualified Pakistani teachers available ;
- (b) secure, through foreign-aided programmes, the required personnel for teaching and research in selected institutions for an agreed period of time ;
- (c) secure the necessary funds to meet the needs not satisfied through (a) and (b) above for the employment of its own international staff with the help of recognized international agencies such as UNESCO.

21. On the basis of our experience in the past we would like to make a few pertinent observations on the practice of sending people abroad for study and offer some suggestions that might make the programme more effectively. There is a good deal of evidence that most of those we send to foreign countries encounter personal, social, and educational difficulties that could have been avoided if they had been properly oriented to the situation into which they were going. A sound programme of orientation should be instituted through the Ministry of Education, and should be required of all students going abroad, whether they go under government or private auspices. This orientation should include an intensive study of the history, the government and the important current issues facing the country to which the student is assigned ; information on community and family life, social customs, and etiquette ; an intensive exposition of the education system, including the types of programmes available, methods of instruction, examination procedures and international requirements for degrees ; and important miscellaneous information on such matters as food, clothing, housing, and anticipated expenses. In the other direction the orientation should provide the student with basic information on Pakistan, its history, government, economy, and culture. In most instances those who come in contact with our students will learn much of what they know about Pakistan from them, and it is important that our students be able to give an accurate, intelligent, and balanced picture of their own country.

• 22. Contact with the student who will be studying abroad should not begin and end with the orientation period. The Government, in its own interests as well as those of the student, should initiate a procedure that will assure systematic and continuous contact with all Pakistani students studying in a foreign country. There have been numerous complaints from students overseas not only of a lack of interest in them on the part of the Government, but also a total loss of contact with their own country, its progress, and its problems. An Ambassador or a High Commissioner symbolizes Pakistan in the eyes of Pakistanis abroad. It is vital, therefore, that Pakistan's Ambassadors and High Commissioners should find the time to maintain close contacts with our national overseas and particularly with our scholars and students. Our scholars must continue to be inspired by a spirit of devotion and service to Pakistan, and our Embassies and High Commissions must be provided with the staff and funds necessary to maintain a relationship with them that will constantly refresh their spirit of patriotism.

23. The programme we have outlined here will place a large number of new and difficult responsibilities upon the Ministry of Education, yet it is imperative that this work be undertaken immediately and that it be done carefully and thoroughly. The amount of money involved in the foreign scholarship programme will be hundreds of thousands of rupees, but the talent that it is intended to develop cannot be measured adequately in money. The Ministry must be given the staff and the funds to make the programme effective.

PROVISION OF SPECIALISED STAFF AND TRAINING

SUMMARY OF RECOMMENDATIONS

A major effort must be made to provide our colleges, universities, and research institutes with the highly trained personnel needed if they are to produce the quality of people required for national development and create a self-sufficient educational programme. To do this we must send our most able students abroad for advanced study and absorb them when they return in positions that will make the maximum use of their talents. (1—3).

2. The Ministry of Education should determine the precise needs of the colleges, universities, and research institutes for personnel in the various disciplines and at the same time draw up a list of the world's leading universities for advanced study in each discipline. Our overseas scholarships programme should be rationalised for the above purpose by (i) selecting the very ablest students, (ii) sending them for study in the fields for which there is the most urgent need for personnel, and (iii) assigning them to those foreign universities which are outstanding in those fields. (9—12).

3. Students completing advanced study abroad should be induced to join our colleges and universities and offered suitable posts with adequate salaries. They should also be given proper accommodation, and all opportunities for the full use of their talents. (6—8).

4. To meet the existing shortage of highly trained teachers and researchers, the Ministry of Education should (i) arrange for special committees to interview for specific posts in our colleges and universities Pakistani scholars who are studying or working abroad, and (ii) attempt, through the proper channels to secure qualified foreign teachers for our educational institutions. The foreign personnel should be replaced gradually as qualified Pakistanis become available. (16—20).

5. The Ministry of Education should provide a thorough orientation for all our students going abroad in the educational system and culture of the country where they will be studying as well as in the history, the economic problems, and the culture of Pakistan. Our Embassies and High Commissions should maintain the closest contacts with these students and should have the staff and funds to do so. (21-22).

CHAPTER 20

MAKTAB AND MADRASA EDUCATION

1. The Madrasas, Makatib, and Dar-ul-Ulums are a continuation of a traditional system of education with the restricted aim of teaching Islamic subjects. The main emphasis is on the teaching of Arabic, which is started from the very beginning, and on the teaching of the Quran, Tafseer, Hadith, and Fiqh. Their primary purpose is the teaching of Islam, and in its understanding and interpretation little use is made of modern knowledge.

2. Most of these institutions are in East Pakistan, where they are called Madrasas. These are regular educational institutions with definite syllabuses which send up their students to the examinations conducted by the Madrasa Education Board. There are successive stages of education: the Ibtidai, Dakhil, Alim, Fazil, and Kamil. The syllabuses show continuity from one stage to the other and a person can join the higher stage, particularly after the Dakhil stage, only after having passed the lower stage.

3. As early as 1915-16 efforts were made to integrate religious instruction with general school education by arranging for the teaching in the Madrasas of subjects that were taught in the ordinary schools. This reform was adopted by a large number of Madrasas, but others continued to follow the old course. As a result, Madrasas were divided into two categories, (i) the Old Scheme Madrasas, and (ii) the Reformed Scheme Madrasas. The latter have gradually been coming nearer to the general scheme of studies prevalent in East Pakistan, and the Provincial Government has recently decided to integrate the Reformed Madrasas into the general system of school education.

4. The Old Scheme Madrasas have also been feeling the need for bringing their system near to the requirements of modern life and have introduced the teaching of subjects like arithmetic, history, geography, elementary science, English, and Bengali into their system. The main emphasis, however, still continues to be on the study of Islam, and the teaching of other subjects occupies a very secondary place. The time given to the teaching of Islam and its allied subjects is about 75% of the total in the institution, with the result that the knowledge of the other subjects even at the highest stages of Madrasa education, which require 15 and 17 years, does not go beyond the matriculation standard.

5. The number of institutions providing an education in Arabic and Islamic subjects from the very beginning is comparatively small in West Pakistan. They are called Makatib, and are mainly of an elementary standard, seldom going beyond the primary stage. A few of them, however, commonly called Dar-ul-Ulums provide education of a higher standard. Their system of education and presentation of Islam follow traditional methods, and show little awareness of modern knowledge and scientific advancement.

6. The system of education in Madrasas, Makatib, and Dar-ul-Ulums was really an attempt on the part of Muslims to emphasise religious education at a time when it was not formally included in the prevalent educational system. In doing so, the Madrasas and Dar-ul-Ulum overloaded their curriculum with courses in religion and allied subjects.

7. Pakistan is now an independent State and has already introduced religious education. We have in this report laid particular emphasis on moral and spiritual values and religious teaching on the one hand, and the teaching of other subjects required for useful living in modern society on the other. In the chapter on "Religious Education", we have recommended that it should be a compulsory subject for the first eight years and an elective subject from Class IX onwards. The promotion of higher learning and research has been ensured through arrangements for teaching and research in Islamic studies at the university level and in the Institutes of Islamic Research outside the universities. We believe that our recommendations contain a well-balanced structure which will develop in all students a love for the moral and spiritual values of religion and enable them to understand their fundamental duties towards God and man. It will provide adequate opportunities for the specialized study of Islam to those who want to undertake it. This will, we believe, give to religious education its proper place in the educational system and will also meet the demands of the scientific age.

8. The system of education in Madrasas, Makatib, and Dar-ul-Ulums, is rather one-sided in so far as it aims at preparing all its students for a specialized study of Islam. Education at the elementary stages must of necessity be broadly based and cover a large number of subjects. At this stage the traits and capacities of children are not yet known. Primary classes are groups of diverse individuals, who will be called upon to perform different functions in later life as engineers, administrators, doctors, scientists, philosophers, and theologians. It is too early to recognize the suitability of a child for a particular profession or a particular academic discipline. The education of small children should cover all the subjects required as a base for the various professions and disciplines of study which are open to the students in later life. The study of religions should be an integral part of education at the elementary stages, but there are other essential elements which should not be ignored and which should receive proper emphasis to prepare students for various spheres of national life. The Madrasas and Makatib do not provide such a broad based elementary education.

9. At the higher level, Madrasas and Dar-ul-Ulums must present Islam as a dynamic and progressive movement which can endure through the changing times and changing values. The dynamic spirit of Islam can be imbibed only if Islam is presented in every age in the light of latest advances of science, philosophy, economics, and contemporary history.

10. It is a hopeful sign that the Madrasas have been feeling the need to study subjects that are useful in modern life. This is a move in the right direction, and we hope that this tendency will be progressively maintained through the revision of the syllabuses of Madrasas and Dar-ul-Ulums from time to time, giving to subjects other than religion the importance that they deserve in practical life, and making full use of modern thought in the understanding and interpretation of Islam.

MAKTAB AND MADRASA EDUCATION**SUMMARY OF RECOMMENDATIONS**

1. The curriculum of Maktabas, Madrasas and Dar-ul-Ulums is overloaded with courses in religion and allied subjects, without any regard to the needs of such studies as mathematics, science, social studies and humanities. (9).

2. At the elementary stage, education must be broad based and the curriculum of Maktabas, Madrasas and Dar-ul-Ulums should make due provision for subjects the study of which will give their students some training for the vocational or professional courses they may later choose to follow. At the higher levels these institutions must present Islam as a dynamic and progressive movement which can endure through changing times. The dynamic spirit of Islam can be imbibed only if Islam is presented in every age in the light of the latest advances of science, philosophy, economics and contemporary history. (8, 9).

3. As these institutions have themselves become conscious of the need for a change, they should not find it difficult to adapt their curriculum to the requirements of our complex society and present Islam in a way acceptable to the rational mind. (10).

CHAPTER 21

THE MEDIUM OF INSTRUCTION & THE TEACHING OF LANGUAGES**I. Introduction :**

1. Language is the repository of the thought and culture of a people linking its past with its present. It is also part of the concept of nationhood, enabling people to think, feel and act as a unified group. In addition, language is the principal vehicle for the dissemination of knowledge and the transmission of acquired skills. As education is concerned with the propagation of culture, the spread of knowledge, and the strengthening of a sense of national unity, language and the process of education are most intimately connected.

2. During the period of British rule a number of regional and local languages were spoken in the sub-continent, Urdu being the most widely understood. The common link between the regions of the sub-continent was, however, provided by the English language, and it was through this language that the movement for independence of this sub-continent found its expression, bringing together wide-spread parts of the country. It was through this language that modern knowledge was acquired and communicated. This process continued for over a century, giving rise to two important consequences among others. In the first place, as English was the medium of instruction in the schools and colleges, and as scientific knowledge and success in Government service were available only to those possessing skill in English, a social gulf was created between the small group who had acquired this ability and the majority who had not. In the second place, as the regional languages of the sub-continent were not employed in Government, trade, education, or the learned professions, their development languished. This happened at a most unfortunate period of history since the last hundred years have seen the most striking advances in practically all fields of human knowledge. In the development of specialized vocabularies to express this knowledge, as well as in the production of literature which transmits it, our languages have fallen far behind. Urdu and Bengali are fully developed as literary languages ; they have not, however, had the chance to keep pace with the tremendous advances in the fields of science and technology, nor is there available in them the vast range of reference books, journals, and periodicals so necessary for the scholar and the teacher.

3. Movements for the renovation of our languages and the production of appropriate writings in them had begun even before Independence. At the school stage, these languages had been used as optional media of instruction and examination in some of the subjects. After 1947, the demand for rapid development of our languages and for the replacement of English in our educational system and official life has naturally grown very insistent. Urdu and Bengali have now been officially declared to be the national languages of Pakistan, and therefore the question of their adoption in place of English in the educational system is no longer a matter of debate.

4. It seems necessary, however, to restate the case for the adoption of the national languages as media for education as below :

- (i) National language is a powerful force for developing a sense of nationhood. It is one of the basic elements that welds people into homogenous units. It is a symbol of a nation's dignity

and like its flag, its national anthem, and its heroes, it fosters national pride.

- (ii) The use of the same language by the intelligentsia and the masses removes class distinctions and makes available to the common man the benefits of the highest cultural and educational attainments of the top-most thinkers and reformers.
- (iii) Education in a foreign language places an enormous strain on students, forcing them to memorize and to spend an undue proportion of their time on learning the language. On the other hand, education in the national language enables the students to devote more time to the acquisition of knowledge and the development of their intellectual capabilities. It leads to original thinking and promotes facility of writing. It develops imagination, initiative and creative thinking.
- (iv) With the development of national languages and their use at the higher educational levels, the literature produced on the various subjects, professions, trades, etc., becomes intelligible to the common man and promotes progress in agriculture, commerce and industry.

5. When we say that the national languages should be given their due place it does not mean that we are unmindful of the great importance of English in our national life. We wish merely to point out that the national languages should gradually and progressively replace English as the media of instruction at all levels. Even when this has been done, it will still be necessary for our young men and women to learn English as a compulsory language from Class VI onwards to the degree level. English is undoubtedly the most important and widely spoken language in the world today. It is the foremost medium of international communication and information. For these reasons it is necessary that all educated persons in the country should have a knowledge of this world language. For our educated people, especially for our scientists, technologists and professional experts, English will always provide the means of keeping in touch with current developments. The study of English as a second language will require special attention, and new techniques will have to be developed in order to teach it well.

6. We should make every effort to develop our national languages to the level at which they can become effective media of instruction at the higher stages of education. This would not only close the existing gulf between our social classes but also fulfil one of the aspirations behind the creation of our country. What is equally important, it would greatly improve the quality of our education.

7. We must first of all remove the deficiencies in our national languages in the fields of science and technology which were caused through stagnation and lack of development during the long period of foreign rule. These languages should then be developed so that in their resources and in their literature they take their place among the great languages of the world. This needs careful planning and the co-ordinated effort of scholars, scientists, educators and Government.

8. Our primary concern here is with those aspects of language which relate to the process of education. There are, in fact, two problems; the first relates to language as a medium of instruction; and the second is concerned with language as a subject to be taught.

9. In considering the short term and long term policies to be applied, we shall begin with the situation in West Pakistan where the problems are greater. Although Urdu is commonly spoken throughout the province and is the mother tongue of certain sections of the people, we must take into account the fact that the mother tongue of the child is not in all areas the national language. Pashto, Panjabi, Sindhi, and Baluchi are widely spoken in the home environment of the child. However, despite this apparent diversity of tongues there is an inherent and basic linguistic unity throughout West Pakistan. When Islam entered the sub-continent through the conquest of Mohammad bin Qasim in the eighth century, the area which first came under Muslim domination was the major part of the present West Pakistan. This area, known to the early Arab rulers as 'Sind', should not be confused with the pre-independence province of the same name, for it then occupied a much larger area. According to early Arab geographers, it was the area drained and irrigated by the river 'Sindh' (Indus). After the Ghaznavid conquest the whole area remained under Muslim rule until the rise of Ranjit Singh in the Panjab and the annexation of Sind by the British. Such a long period of common history provides West Pakistan with a common culture.

10. The Muslim conquest and the mixing of the people created and fostered the Urdu language whose vocabulary was drawn from various languages such as Persian, Arabic, Sanskrit, etc. This ability to assimilate the vocabulary and usages even of such a dissimilar language as English is a characteristic feature of Urdu. Urdu is thus a common heritage of all sections of the population of West Pakistan, who have played a part in giving it its present shape. There is every reason to hope that it will continue to evolve further under the impact of influences emanating from the various regions constituting West Pakistan.

11. The assimilative powers of Urdu must be fully utilized to make it function as a basic and representative language for the whole of West Pakistan by introducing into it useful words of all the languages of the area. Whether we still call it Urdu or whether we find another name for it, this language with a common pattern and structure should assimilate useful elements from all local sources. It should reflect the ideas, aspirations and hopes of the masses of West Pakistan and should help to unite them. In this process of evolution it should become the language of the people rather than of an elite.

12. Having clarified the situation regarding one of our national languages, we can now proceed to the first of our problems, namely language as medium of instruction. The present position is that at the school stage Urdu is the medium of instruction in the former Panjab and Baluchistan regions. In the Peshawar region, Pashto is the medium of instruction up to Class V and Urdu from Class VI onwards. In Sind region, Sindhi is the medium of instruction in most schools while Urdu is a compulsory subject of study. Since 1947 a number of schools have been opened in Sind with Urdu as the medium of instruction in which Sindhi is a compulsory subject of study.

13. Controlled experiments carried out in other countries have shown that where multilingual groups exist the best educational results are obtained and the best knowledge of the national language achieved when the mother-tongue of the pupil is used as the medium of instruction up to Class V and the national language studied as a subject from the third year onwards, replacing the mother-tongue as the medium from Class VI. We agree with this view and recommend its application. This would

mean that in Peshawar Pashto would continue as the medium of instruction in the first five classes, but that Urdu would be introduced as a subject of study from the third year. Similarly, Sindhi would be, as it is presently, the medium of instruction, but Urdu would be introduced as a compulsory subject of study from the third year. Adequate time should be given in the time-table to the teaching of Urdu from Class III to Class VI, so that it can be employed effectively as the medium of instruction from Class VI onwards.

14. We are firmly convinced that for the sake of our national unity we must do everything to promote the linguistic cohesion of West Pakistan by developing the national language, Urdu, to the fullest extent. In the areas of the former Pajab, Bahawalpur and Baluchistan, Urdu is already the medium of instruction at the primary stage, and this arrangement should continue. Urdu in this way will eventually become the common popular language of all the people in this area.

15. We shall now deal with the medium of instruction after Class V. Urdu is already the medium of instruction from Class VI onwards in all the regions of West Pakistan except the former Sind. In Sind, however, the medium of instruction from Class VI to Class X is Sindhi. At present Urdu is taught there from Class III onwards as a second language but the time given to it in the time-table and the level of study aimed at are inadequate. We have already suggested in the preceding paragraphs that Urdu should have adequate emphasis in the school curriculum. Once this has been done, it would be possible for students to adopt it as the medium of instruction from Class VI onwards. On that assumption Urdu should be introduced as the medium of instruction from Class VI from 1963 and should continue progressively in the higher classes. It is necessary to give Urdu the same position in Sind as in the rest of West Pakistan, as it is the right and privilege of the people of this area to take an effective part in the affairs of the country. The teaching of Sindhi as a language will, of course, still continue in these schools.

16. So far as East Pakistan is concerned, there is in fact no problem since Bengali is both the mother tongue and the national language of all except very small groups in the Province. It will, therefore, continue to be used as the medium of instruction from Classes I to X, and also studied as a subject.

17. In schools where English is the medium of instruction Urdu or Bengali should be taught as a compulsory subject ; its teaching should be introduced at the same time as in other schools and it should be given the same importance.

18. We must now turn to the national languages as subjects of study. We believe that this is an important issue. In every country adequate attention is paid to the study of the national language and literature and to the use of modern techniques of teaching. We find that in most countries, as a child progresses through his school career, the amount of time he spends on his national language increases with a slight falling-off in the last two years before the University stage. We have already expressed our view in the relevant chapters on primary and secondary education regarding the duration of the courses and the time load. However, we would like to restate some of our observations. We therefore recommend that :

- *(i) The national languages be made compulsory subjects of study up to Class XII and that the present practice in some areas of making it optional after Class VIII be discontinued.

- (ii) The time load given for its study should be adequate.
- (iii) The teaching methods should be improved through the use of modern techniques and materials.

19. If this programme is followed assiduously for the next few years we are certain that it will contribute greatly to the development of Urdu and Bengali to a point where they can be used effectively as the media of instruction in higher education. We further believe that this can be done without neglecting the regional languages. The literature produced in these languages is a most valued part of our heritage and a source of enrichment for our national languages. The Pashto Academy, the Sindhi Adabi Board, and the Punjabi Academy, are engaged in linguistic, literary and cultural studies in their respective languages, and they should be given encouragement and support to continue their work.

20. As regards the medium of instruction at the higher secondary level, i.e., the present Intermediate classes, the position is that all Universities and Boards of Secondary Education allow option to students to write their answers in a national language in Arts subjects, while Karachi and Dacca Universities allow the option also in science subjects. As we have already said, we are in favour of a progressive shift from English to the national languages as the media of instruction. To accelerate this process, we suggest below certain measures for the speedy production of the required literature. In the meantime, the Boards of Secondary Education and the Universities in those regions where this option does not already exist should watch the progress of these measures and allow the option at the appropriate time. However, the change should be introduced after careful planning and preparation, so that academic standards do not suffer. Education in science subjects at the higher secondary level is preparatory to professional courses in Engineering, Medicine, and other sciences. The student should, therefore, get a thorough grounding in these subjects and the scientific terminology should be in conformity with the terms used in professional colleges and universities,

21. We have said in the chapter on higher education that the university level of education requires the student to work on his own under the guidance of his teachers. In order to do this he must have access to a wide range of material which would help to broaden his outlook and develop his intellectual capabilities. But it will not be easy to produce this store of books in our own languages readily and therefore the greatest care should be taken in changing the medium of instruction at the University level. Every effort should be made during the transitional period to produce books in adequate quantity and variety in our national languages.

22. The great difficulty in producing books for advanced study will be that of terminology for which we do not have equivalents in our languages. We feel that any attempt at translating scientific and technical terms, notations and symbols, will not only be futile but harmful to the progress of thought and to the advancement of knowledge. In translation; new words have to be coined which are not in actual use in the language and do not have the advantage of usage in the scientific world. The best course will be to adopt scientific and technical terms and notations as they are being used in English. The language of science is universal and does not belong to any particular people. In the modern world scientific advance is a co-operative effort in which all nations participate. We cannot hope to take an effective part in this

field of co-operation unless we learn and use the language of science, that is, the terms, the symbols, and notations that are in general use in the scientific world. Furthermore, the translation of scientific terms into Urdu in West Pakistan and into Bengali in East Pakistan will make co-operation between thinkers and scientists of the two wings of the country difficult. On the other hand the use of international terminology in both languages will increase the common element between them and will promote co-ordination between the research work undertaken in universities in East and West Pakistan. Moreover, it would equate the terminology used at the secondary and the university levels. In a few years the scientific terms would have become a part and parcel of Urdu and Bengali and would cease to look foreign. This process of assimilation has already occurred in the case of hundreds of foreign words which have gradually become components of our own languages.

23. In producing the necessary literature emphasis should be placed on original writing and adaptation and not on translation. This will promote original thinking and give scope to free exercise of the imagination.

24. Some machinery should be created for the encouragement and production of books and periodicals in our national languages, and we suggest the establishment of the following Boards to undertake the work necessary to make our national languages the media of instruction in our higher educational system :

- (i) Boards should be set up immediately for the development of the national languages, one for Urdu and the other for Bengali. Their sphere of work should be wide enough to cover all aspects of language and literature. A number of Boards and organizations, official and non-official, are already engaged in promoting literacy and scientific effort in the national languages. These organizations have done useful work and should continue to function in their respective spheres. As the new boards will have a much wider range of activities covering the whole field of knowledge, literature and language, they will need the co-operation and help of existing Boards and other thinkers and writers. The new boards should not hamper the activities of the existing organizations or try to replace them. On the other hand, their function should be to co-ordinate all literary effort in the country. In doing so they will assist existing organizations and also utilize the experience gained by them. While making full use of the existing organizations, the new Boards will also draw up projects of their own for the development of languages. Their activities will include the preparation of dictionaries, the production of material in various scientific and technical subjects and also in the humanities and social sciences.
- (ii) A Board for scientific terminology should also be set up. This should consist of scientists and other specialists who should be able to give expert advice on the use of standard terminology in various subjects. This terminology will promote unified teaching and coordination of knowledge. We attach great importance to this programme and hope that the experts will be able to standardize terminology and will thereby facilitate the writing of standard books on science subjects. This is a highly technical but absolutely essential task, and

only scientists or specialists with an adequate background of knowledge and experience will be able to accomplish it satisfactorily.

Adequate finances and staff will be necessary if these Boards are to carry out their responsibilities efficiently.

25. As we have already stated, the change over from English to the national language as the medium of instruction at the University level needs a period of transition during which the necessary material will be produced. We have given careful consideration to the duration of this period. We note that books at the University level must be of a high standard both as regards their thought, content and mode of presentation. Their authors will have to combine wide and up-to-date knowledge of the subject with proficiency in writing in the national languages. But the number of persons who combine these qualities is limited. Moreover, the majority of them can undertake the writing of such books only as a part-time occupation. Normally such writers will be found in the universities, where they have important teaching and research assignments that cannot be ignored. After considering the quality and quantity of the books that will be required and the available talent in the country for writing them, we are inclined to believe that a period of approximately fifteen years will be needed to replace English as the medium of instruction in a large number of subjects taught at the university level.

26. If the development of vocabularies and the production of books is taken in hand assiduously and the national languages are taught efficiently in our schools, it will be possible for them to become effective media of instruction at the university level in about fifteen years' time. Therefore, the progress in the production of this material during the transition period should be carefully watched to ensure the change-over in the anticipated period. During the above period of transition, Urdu should be able to develop still further and thus firmly establish its claim as the "lingua franca" of all the regions of West Pakistan.

27. At present, English is the medium of instruction in our universities. In Karachi University, however, Urdu is allowed as an optional medium and in Sind University both Urdu and Sindhi.

28. While there are cogent reasons for thinking that it would take approximately fifteen years to change the medium of instruction at the degree level, there is a body of opinion which holds that an earlier change can be made in the case of humanities and social sciences without detriment to educational standards. It is possible that the required material for these subjects may be produced more rapidly than for the natural sciences. In that case, in the light of the progress actually made, those universities which do not yet allow any option in the matter may wish to consider a more rapid change. We hope, however, that in doing so they would pay due regard to the maintenance of academic standards and to the provision of adequate resources in books and other materials. In the case, however, of natural sciences at the degree and post-graduate levels and professional colleges, it will be necessary to keep English as the medium of instruction for another fifteen years. We note that Urdu College, Karachi, has been doing pioneer work in the use of Urdu as the medium of instruction in all arts and science subjects at the University level and we should like to see the experiment continue.

29. At this stage we may appropriately consider the position of English in our educational system. English is one of the richest languages in the modern world in respect of vocabulary, and it has a vast literature, which is growing in volume and quality from day to day. Thousands of scholars and scientists working in the laboratories and libraries in many lands present the results of their research in English. There is thus a constant flow of fresh knowledge in this language, and a large number of books and standard journals are issued in English every year incorporating the results of the latest advances in thought in all subjects. Standard works published in other languages are immediately translated into English, which thus provides an ever-expanding storehouse of knowledge, classical and modern, human and scientific, unsurpassed in any other language.

30. In recent times the English language has spread so widely throughout the world that it is now spoken and understood in every one of the continents and widely used as a language of diplomacy, commerce, and industry. It is studied as a foreign language in all countries outside the English speaking world. In Russia, we are told, more students are studying English as a foreign language than any other language. English has thus acquired a status that no country can ignore.

31. Living as we do in a highly competitive world where the pace of advance in scientific knowledge, discovery, and inventions is so rapid as to make it impossible for any nation to be self-sufficient, Pakistan cannot shut itself up in isolation and must provide for the study of a well-developed foreign language in its education system. While we feel that English must yield to the national languages the paramount position that it has occupied in our educational system so far, we are at the same time convinced that English should have a permanent place in that system. Through English our scientists and scholars can keep in touch with modern knowledge in science and technology, our industrialists can use the latest methods of production and distribution, our diplomats can make an effective contribution in international conferences, and our defence forces can utilize the latest equipment for defence. It was through English that different parts of this sub-continent could join the struggle for independence, and after Independence English has provided the most effective link between the two wings of our country.

32. A knowledge of English will, therefore, always remain a necessity for our scholars, educationists, businessmen, administrators, diplomats and members of learned professions. The products of our universities must, therefore, know English well enough to be able to keep in close touch with the advances of thought throughout the world. They should also be able to express the results of their own learning and research in the English languages so as to contribute to international journals and add to the sum total of knowledge in various fields.

33. We therefore recommend that English should be taught at a compulsory language from Class VI to XII in schools and at the graduate-level. But it should be taught as a functional language rather than as literature, except for those who wish to specialize in English language and literature. It should be studied as a means of communication and we should make use of such mechanical aids as gramophones and tape-recorders. Proper emphasis should be laid on the idiomatic and phonetic aspects of the language, which have so far been neglected. Our methods

of teaching should be rationalized and brought up to date. Some experiments along these lines have already been started by the British Council and much experience has been gained by some overseas institutions such as the University of Sydney. We must capitalize fully on this experience, and train our teachers and change our teaching methods and text books accordingly.

34. Finally, we would emphasize the supreme need of bringing our two national languages, Urdu and Bengali, nearer to each other. We understand that the vocabulary of the two languages has substantial common elements in words of Persian, Arabic and Prakrit origin. With the use of the same international scientific terminology in the two languages, the common element will be substantially increased. As people from East and West Pakistan work together in Government offices, in trade and commerce, and as the social and cultural contact of the people of both provinces increases, new common words and usages will emerge. We are confident that the inherent forces of unity of our country will bring the two languages still closer together. This process, however, can be aided by drawing up lists of words common to both and making extensive use of these in published material. We recommend that the Boards for the advancement of national languages suggested by us should give their attention to this task. A special committee comprising members drawn from the two Boards may be set up to identify the common elements between Urdu and Bengali, and to encourage their use.

THE MEDIUM OF INSTRUCTION AND THE TEACHING OF LANGUAGES

SUMMARY OF RECOMMENDATIONS

1. It is essential to develop Urdu and Bengali, the official languages of Pakistan and remove their deficiencies with regard to scientific and technical knowledge so that they may become effective media of instruction also at the higher stages. (3, 4, 6, 7).

2. Urdu is spoken throughout West Pakistan, and despite the apparent diversity of tongues, there is an inherent and basic linguistic unity in the province. The ability to assimilate and synthesize the vocabularies and syntax of many languages is a characteristic of Urdu. This assimilative power should be fully utilised to make Urdu as representative as possible of the languages spoken by the people, by introducing into it the useful vocabulary of all the languages of the province. Urdu must become the language of the people rather than of the elite.

3. The literature produced in the regional languages is a valuable part of our heritage and is a source of enrichment for the national languages. Therefore the Pashto Academy, Sind Adabi Board, and the Punjabi Academy which are engaged in literary and cultural studies should be given encouragement and support to continue their work.

4. While a national language should gradually and progressively replace English as the medium of instruction, the great importance of English in our national life requires that it should be taught as a compulsory language from Class VI onwards through the degree level. (5, 33).

The medium of instruction at the Primary & Secondary levels

5. Where multi-lingual groups exist the best educational results are attained and knowledge of the national language best achieved when the mother tongue of the pupil is used as the medium of instruction up to Class V and the national language is studied as a subject from Class III and replaces the mother tongue as the medium from Class VI onwards. (13).

Applying this principle, the following action is needed :

- (i) In West Pakistan, the medium of instruction from Class I to Class V is Urdu except in regions of the former N.W.F.P. and Sind. Urdu should be made a compulsory language in these two regions from Class III onwards.
- (ii) Urdu is the medium of instruction from Class VI to X in all regions except former Sind. In that area it is taught from Class III onwards as a second language but in an elementary manner. It should now be given the proper teaching emphasis so that it can be used effectively as a medium of instruction from Class VI onwards.

6. Urdu is taught as a compulsory subject of study in some regions only up to Class VIII. It should be taught as a compulsory language up to Class XII, as is the case with Bengali in East Pakistan.

7. In those schools where English is the medium of instruction, the national language should be taught as a compulsory subject. Its teaching should start at the same time as in other schools and it should be given the same importance.

The medium of instruction in Classes XI and XII

8. In Classes XI and XII option may be allowed to use either the national language or English as the medium of instruction for arts subjects. As for science subjects, the Boards of Secondary Education may, where the option does not exist, consider the desirability of introducing it after satisfying themselves that the necessary scientific and technical literature has been developed.

The medium of instruction at the University level

9. To facilitate change-over there must be careful planning and preparation to ensure that the national languages are developed properly and the academic standards are not affected adversely. The following steps should be taken :

- (i) Boards should be set up immediately for the development of the national languages, one for Urdu and the other for Bengali. Their sphere of work should be wide enough to cover all aspects of language and literature.
- (ii) Another Board should be set up to standardize the terminology in the various branches of scientific knowledge.
- (iii) Books, periodicals, encyclopædias, reference books and other reading material should be prepared in the national languages by competent writers, and should be available throughout the country.
- (iv) Arrangements should be made for the training of teachers through improved techniques so that they may learn to teach satisfactorily through the medium of a national language. (24—26).

10. It will take approximately fifteen years for Urdu and Bengali to reach the point of development where they can become effective media of instruction at the university level. Some, however, feel that Urdu and Bengali can reach this point of development earlier in respect of humanities and social sciences. In such a case, in the light of the progress actually made, those universities which do not yet allow the option of teaching these subjects through the medium of national languages may consider doing so after a preliminary period of preparation and with due regard to the maintenance of academic standards. In the case of science subjects at the university level and in the professional colleges the medium of instruction should be changed only after thorough preparation during the next fifteen years. (26—28).

11. The supreme need should be recognized of bringing Urdu and Bengali nearer to each other by increasing the common element in their vocabularies and by putting such common elements to extensive use. This task should be entrusted to a Committee, comprising members drawn from the two national Boards suggested by us for the development of Urdu and Bengali. (34).

CHAPTER 22

TEXTBOOKS

1. The textbook is and will probably remain the most commonly used teaching aid in the schools of the world. It represents, in abbreviated form at least, the knowledge the student in each class is expected to master as a basis for acquiring additional knowledge and skill. Although the importance of textbooks varies from one country to another it is universally recognized as a basic teaching tool. It is given particular importance in those countries where additional reading material is not widely available to school children and where teachers are not highly trained. Unfortunately both of these circumstances prevail here at the present time. We must, therefore, give careful thought to the means by which excellent textbooks can be made available to our students in sufficient numbers and at a reasonable price.

2. The provision of textbooks adequate both in quality and quantity has been a problem that has concerned educational authorities of the sub-continent for many years. These problems have been both educational and administrative in nature, and it would be well for us to understand clearly the difficulties involved before suggesting a solution.

3. To begin with it should be recognized that textbooks are not masterpieces of literature nor of creative scholarship. They are not expected to expound new theories nor the results of the author's original research. Rather, a textbook of high quality attempts to present the material encompassed within the syllabus of a course in a manner and a language that can be easily comprehended by a child of the class for which the book was written. Moreover, it is built upon what the child has learned previously and is a preparation for what he will be expected to learn at the next level. Ideally, the reading of the textbook does not represent the sum total of classroom instruction. Rather it serves as the thread of continuity and the central focus for the learning that is expected to take place.

4. The nature and purpose of the textbook have certain implications for its construction. Normally the several talents required for the production of a first-rate text are not to be found in a single individual. For this reason the process through which a textbook is created is generally one which requires the combined efforts of a number of specialists. A textbook team would include a highly qualified and experienced teacher from the class level for which the book is intended. He would bring to the process his ideas as to how the material can be organized and presented most effectively, based upon his understanding of children of this age and his experience with the problems of teaching them. The second member of the team would be the subject specialist who would be responsible for the accuracy and the relative importance to be attached to the materials to be included. The actual writing would be entrusted to one capable of expressing himself simply and lucidly in a vocabulary and style within the comprehension of the students the book is intended to reach. Finally there must be someone who can enhance both understanding and interest through pictures, drawings, maps, charts, and other illustrative material designed to spotlight central ideas and to clarify difficult concepts. The work of this team should be such as to produce a final product which will interest and stimulate the pupil.

5. It is important that such a team be able to draw freely on the ideas and techniques that have been used by textbook writers not only in this country but in other parts of the world so as to present materials effectively to students of different age levels, backgrounds, and abilities. This assumes that they will have available a large sample of books that have been produced both at home and abroad, abstracts of research in the field of textbook construction, the observations of teachers reported in periodic literature on problems of instruction, research studies on the learning process, and a small but sound reference collection in the disciplines commonly taught in the schools.

6. The central problem here, then, is one of bringing together competent groups of specialists who are interested in preparing textbooks; providing them with facilities that will permit them to produce materials that are both accurate and educationally sound; selecting the very best of those that are turned out; and editing those selected so that they comprise from the first to the last class an integrated and progressively learning experience.

7. The next important problem is how the educational authorities can ensure the production of books that are suitable in quality and set-up and are readily available in the market throughout the year at a price within the means of the average students. This problem has been a matter of serious concern to our educational authorities for a long time.

8. Two methods have generally been followed for the prescription and production of textbooks. The first is where the appropriate educational authority lays down syllabuses for the different stages of education and also prescribe textbooks for the different classes. Authors and publishers are invited to submit books. These are sent for review and an assessment of their merits. On the basis of such a review books are selected and prescribed. In some cases there is a single textbook for the entire area for which the syllabus is meant; in others a number of books are approved and the school authorities are free to select any of these. In theory, the authors and publishers are free to compete in the open market and the headmasters and teachers are free to select the books. Books are generally not selected on merit, and the pressure of administrative officers and the temptations offered by publishers influence the decision of the reviewers or the selection of books by the school authorities.

9. According to the second method, the appropriate educational authority lays down the syllabuses but does not prescribe any book. In this case, anyone can write a book and in practice a number of books are thrown on the market by various writers and publishers. The books are not reviewed or judged by any competent authority, and school authorities are subjected to pressure from departmental officers or publishers and seldom select the book on merit alone.

10. This system has created vested interests among education officers and publishers and has vitiated the moral atmosphere of educational institutions. At the time of prescription of books or at the beginning of academic sessions when books are introduced in schools, there is brisk canvassing by publishers, followed by complaints against officers for holding "benāmi" shares in the book trade from those whose books have not been selected. Allegations are made against administrative officers for having ordered transfers of headmasters, inspectors, and teachers under the influence of booksellers.

11. The publishers and booksellers resort to still other malpractices. At the time of new admissions and artificial shortage is created so that books can be sold at blackmarket prices, and there is a general complaint that boys are forced to buy "cram" books in addition to the textbooks.

12. The procedure for the prescription and publication of textbooks has been examined by a number of committees from time to time, and various measures have been adopted for removing corruption and malpractices. Unfortunately, these have yielded only limited benefits and the experiments undertaken so far have fallen of the central objective of providing an adequate number of first-rate textbooks at reasonable prices. We have failed to bring together the kinds of talent that are required in textbook writing. Most of our books have been written either by subject specialists who lack an understanding of the vocabulary of school children and are ignorant of the problems involved in teaching them, or they are produced by classroom teachers, whose grasp of the subject is imperfect.

13. There is no doubt that some publishers have made a genuine effort to improve the quality and presentation of their textbooks. Equally, there are many reviewers, teachers, headmasters and officers who have done their work with honesty and integrity. Nevertheless, the fact remains that a large number of textbooks lack the necessary quality, and that corrupt and unethical practices prevail on a large scale, forcing upon students inferior books at high prices. As a result our educational programme, which under present circumstances is heavily dependent upon textbooks, has been seriously and unnecessarily handicapped and the cause of national progress correspondingly affected.

14. In considering the nature of the problem and the weakness of the past experiments, we are convinced that Government must play an active and central part in the production of school textbooks. At the same time, due care must be taken to prevent the abuses that have crept into the system in the past. As general principles, we are convinced that an adequate solution of the textbook problem requires that authors receive sufficient remuneration for their efforts to encourage them to write, yet their reward should not be of such dimensions as to induce them to employ dishonest means to secure the selection of their works; printers, publishers, and booksellers must be kept out of unwholesome competition with each other over the selection of textbooks, and education officers must be prevented from having an unauthorised financial interest of any kind in this trade.

15. We do not wish to enter into a detailed discussion on procedure, but it appears to us that the education authorities will be well-advised to have textbooks prepared under their own direction by Board of Editors. Texts should be invited from authors, not from publishers; they should be reviewed by specialists on the subject, and on the basis of such review a few texts in each subject should be selected for each class. The copyrights of selected texts should be acquired and these manuscripts should be used by the Board of Editors as a basis for preparing textbooks to be finally prescribed, published, and used by the students. The copyright of the published book should also belong to the education authority and the editors and authors should be paid reasonably well in order to attract the best talent, to this work. As regards printing and publication, the educational authority may preferably assign these tasks to publishers on specified conditions relating to sale price, printing paper, etc. As the

quality of textbooks and the cheapness of price are vital considerations, the education authority should select only those publishers or corporations of publishers who have sufficient resources in the way of printing press, technical staff and distribution organization. The education authority may itself undertake printing, publication and distribution of a certain number of books if this is considered necessary for keeping prices low and for producing books of good quality in respect of paper, illustration, and general presentation.

16. We feel that it is essential that textbook libraries should be established by education authorities for the use of persons interested or engaged in textbook writing and publishing. These libraries should maintain wide samples of textbooks used in other countries, with relevant translations, periodical literature containing articles relating to school publications, and reference material relating to the several disciplines included in the school curriculum.

17. We believe that, as part of the re-orientation of education towards the objectives envisaged in this Report, the work of prescription and preparation of textbooks should be undertaken through a Central Textbook Board. This Board should have the following functions :—

- (a) Prescription of syllabuses for Classes I to XII, in accordance with the recommendations made in the relevant chapters of our Report.
- (b) Preparation of textbooks.
- (c) Arrangement for the printing of textbooks either exclusively through private publishing houses or partly through its own resources and partly through private publishing houses.

18. The Board should be a representative one, but to be effective it must be small. It should be autonomous and work through sub-committees operating in the sphere of each educational authority, *e.g.*, the Board of Secondary Education and the Departments of Education. The Board would eventually support itself through the sale of books but would certainly need a loan in its initial stages. Apart from the textbooks, the Board should also be charged with the responsibility of producing from its own resources :—

- (a) Reference and research material bearing on the problems of curriculum, schemes of studies, preparation of textbooks, and the like.
- (b) Guide books for teachers.
- (c) Supplementary material related to the textbooks in use in schools.

19. Throughout this Report the responsibility for drawing up syllabuses and for the prescription of courses has been laid on the education authority, concerned, namely, the University, the Board of Secondary Education, or the Department of Education for Class I to VIII. This inherent responsibility should rest with them. However, as new objectives for education are now being laid down by this Commission, it is necessary to provide for a transition period, giving a certain responsibility to a special Board constituted by the Ministry of Education but comprising members from the Provinces also. The Board should mainly deal with questions of policy as laid down in paragraph 17, and it should have the power to enforce those policies. The actual work would be undertaken

by a Textbook Committee to be constituted for this purpose within each educational authority, but these must function directly under the guidance of the Central Board and within the policies laid down by us.

20. As the text-books are prescribed by the various authorities, they will also collect certain fees which would form a part of their own reserve fund. A portion of these fees would be made available to the Central Textbook Board. With these funds, the Board should undertake the further responsibility of production of literature mentioned in paragraph 18 or such other text-books required for higher education.

21. Any unauthorised financial interest an officer of an educational authority, the Education Department, the Board of Secondary Education or the University may have in text-book publishing or sale should be declared to be a penal offence.

22. We believe that if the measures suggested above are taken, the central objective of providing all our students with first-rate textbooks at reasonable prices will be achieved. At the same time the suggestions should serve to encourage those most capable of preparing textbooks to devote their time and energy to this most important task. While protecting both the student and the public, our plan would not adversely affect the private book trade in the performance of its legitimate functions.

23. We do not wish to leave this subject without pointing out that the future training of our teachers and the reconstruction of the curriculum, syllabuses, examinations, and instructional methods should work steadily to lessen the total reliance on the textbook in the educational process. The importance of the textbook will decrease as the quality of instruction increases. Although the textbook will probably continue to have its place in the schools, we hope that it will take its place alongside wide use of the school library and other resources.

24. We do not propose any special arrangements for the preparation and publishing of textbooks to be used at the university level (that is, after Class XII). At the degree and post-graduate stages few textbooks, if any, are prescribed. Books are usually suggested for reading, and in most cases these are foreign publications. The number of students in any case is small and there is little chance of malpractice. We hope that the universities will make a careful selection of books suggested for reading and safeguard the interests of students by arranging the supply of these at cheap rates. We believe, moreover, that special facilities, including import licences, should be provided for the import of advanced books on all subjects so as to make available to university teachers and students the results of the latest advances in their disciplines. This applies to the import of journals in which the results of the latest researches are usually published.

25. We would also like to add that the use of notes and key books by students has done incalculable harm to our educational standards. The publication, printing, and sale of notes and key books should be made a penal offence. In addition, any publisher, printer, or bookseller dealing in notes and key book, which would become illegal material, should be permanently debarred from the printing or selling of textbooks on behalf of Government and the educational authorities.

26. We would further suggest that at the beginning of the academic session each school should, for the general information of the students and the public, make known the various books and the number and type of note books which will be required by the students from time to time during the year. This measure is necessary to avoid an excessive burden on the parents in purchasing textbooks and exercise books.

27. We would commend yet another measure both to save parents money and to ensure that every pupil in the class has the required textbooks. This is the establishment of the textbook libraries in schools from which the text books may be loaned to the students for the term or for the academic year. If the books are provided with good bindings at the start, which are covered by a protective manila paper cover when borrowed, they can be used by successive classes of pupils for perhaps three or four years. This arrangement can be financed either by having a funded textbook fee, payable along with the tuition fee, based on the average cost of books to pupils of the class in question, or by requiring the students to deposit the cost of the book issued to them, with a refund at the end of the term according to the condition of the book when it is returned. In either case the student should have to pay the cost of damage or loss, but should with reasonable care of his text-books be able to share their cost with students in preceding or following classes.

TEXTBOOKS

SUMMARY OF RECOMMENDATIONS

1. (a) The textbook is the most important teaching aid and must be prepared with the utmost care to make it suitable for comprehension by a child of the class for which it is meant. (1).

(b) A good textbook is the result of team work between (i) a teacher of the class concerned, (ii) a subject specialist, (iii) language specialist, and (iv) an artist for illustrative material. (4).

2. Textbooks should, besides being of good quality, be available throughout the year at reasonable prices all over the area for which they are meant. (7).

3. At present, the textbooks used in our school are of poor quality ; their supply at reasonable prices is not ensured and malpractices of various types prevail in their selection, prescription and distribution. Accordingly, the preparation, printing and distribution of textbooks need to be regularised. (12, 13).

4. Textbooks should be prescribed in all subjects up to Class XII.

5. The appropriate education authorities should undertake the preparation of textbooks and acquire their copyrights. (15).

6. (i) The printing and publishing of textbooks should be controlled by the education authorities in respect of price, paper, format, and illustrations. They may print and publish textbooks themselves or through publishers, or partly by themselves and partly through publishers. (15).

(ii) The printing and publication of textbooks should be assigned only to such publishers or corporations of publishers as have sufficient resources in the way of presses, technical staff, and facilities for distribution to ensure production of books of good quality at the most economical prices. (15).

7. Textbook libraries should be established by education authorities. These libraries should maintain a wide sample of foreign textbooks, periodical literature containing articles relating to school publications, and reference material in the several subjects included in the school curriculum. (5).

8. The responsibility for drawing up syllabuses and prescribing courses is normally that of the education authorities. However, to realise the national objectives of education laid down in this report, the Ministry of Education should set-up a Textbook Board. It should be a small and autonomous body with representatives from the Provinces and should work through textbook committees operating within the sphere of each education authority. (17, 18, 19).

9. The responsibility of the Textbook Board should be—

(i) to frame the syllabuses according to the recommendations made in this Report ; and

(ii) to lay down policy for the preparation, printing and publication to textbooks. (17-18).

10. The Textbook Board should receive a portion of the income from the sale of textbooks and use these funds for the publication of (i) reference and research material, (ii) guidebooks for teachers, and (iii) supplementary material relating to textbooks. (20).

11. At the beginning of the academic session, each school should notify students and parents of the various books and the number and kind of copybooks which will be required by the students from time to time during the year. (26).

12. So far as books at the University level are concerned, the universities should continue to deal with them. (24).

13. The unauthorised interest of an officer of an education authority, department of education, board of secondary education, or university in the publication or sale of a textbook should be made a panel offence. (21).

14. The publication, printing, and sale of notes and "key books" should also be a panel offence. (25).

CHAPTER 23

QUESTION OF SCRIPT

I. Introduction :

1. As we have noted in the chapter on the Medium of Instruction, it is impossible to separate language from our way of observing, thinking, and forming concepts about the world around us. Language is an inseparable part of what is implied by the term "culture", which is made up of the set of values, moral precepts, wisdom, and beliefs one generation inherits from another. Transmission of this traditional cultural pattern, and whatever accretions may be added by successive generations, takes place by word of mouth in conditions where no literature exists or in areas of wide-spread illiteracy. With the introduction of methods of recording language in a written or graphic form and the spread of literacy, the transmission of culture in a recorded form becomes possible. With the mass production of this written or printed material, culture and knowledge become accessible to all. Moreover, the process of cultural cross-fertilization is enormously speeded up.

2. Most of the traditional writing system, or orthographies, in use today date back to a time when the only technique of graphic representation was handwriting. The form and shape of letters used in writing with pen, stylus, or engraving tools are not always particularly suited to mechanical production. There are marked differences in letter formation between the written and the printed forms of certain orthographies (Roman, Gothic, and Cyrillic, for example). Where there is a long history of printing and the use of literature, these two forms continue to exist side by side and the average reader experiences no difficulty in following either. However, languages which do not have behind them centuries of experiments in mechanical reproduction tend still to reproduce the handwritten forms of characters by printing.

3. In a competitive world where progress and prosperity depend on mass education and the existence of a body of highly skilled specialists, and where the range and complexity of knowledge are being extended each day, the ready accessibility of up-to-date knowledge in printed form becomes a matter of crucial importance. This implies that the printed script of a language should present as few technical problems as possible, so that the reproduction of literature can be speedy, efficient, and economical. Moreover, each country wishes that its learning, literature, and language should become known abroad as easily as possible. It is for these reasons that the question of script acquires special significance for every country.

4. The matter of script may seem a marginal one for a Commission whose primary task is to frame proposals for the reform of an educational system. Not being linguistic experts we are not competent to design a script, but as educators we are very much concerned with its use. Language is the vehicle for the acquisition and transmission of knowledge and the student relies heavily on the written form once his education has begun. At the secondary and higher levels of education he must have access to an abundance of literature, particularly in the national language. Moreover a large percentage of the adults in our country are illiterate. We must, therefore, as educators, be concerned that our

languages have a written form which is efficient and economical for the mass production of literature, which is easy to read, and which makes the acquisition of literacy as simple as possible.

5. Any discussion on script should take cognizance of the following four factors :—

- (i) Writing is not language but merely a way of recording language by means of visible symbols.
- (ii) A script is the product of evolution covering thousands of years, and the written and printed symbols of today have their origin in the remote past.
- (iii) The script of all languages have been undergoing changes in accordance with the requirements of a particular nation or country. The Arabs, for instance, added **ظ—ض—ز—خ—ت** and **ع** to the original alphabet of 32 letters. The Persians added sounds like **چ—پ** and **گ** and when the two languages mixed with various branches of Indian languages and gave birth to Urdu, sounds like **ڈ—ٹ** and **ڑ** were added. All these additions were, however, made by the addition of dots, dashes and other signs to the existing symbols.
- (iv) The ideal system of writing is to have one letter for each sound and one sound for each letter. Very few existing scripts however conform to this ideal.

6. We propose now to state as objectively as possible the different arguments which are advanced for the adoption of the Roman script on the one hand and for the retention of the Urdu and Bengali scripts on the other. It should be noted that the arguments recorded in the following paragraphs (7 to 40) are not those of the Commission but represent in summarized from the evidence placed before it.

II. Technical Considerations :

7. We are given to understand that criteria of an efficient script are to be found in the extent to which it facilitates the following factors in the use of the language : (a) Spelling ; (b) Pronunciation ; (c) Legibility ; (d) Writing ; (e) Printing. We shall present now the different arguments advanced to us regarding the present Urdu, Bengali, and Roman scripts in terms of these criteria.

8. *Spelling*.—(a) *Urdu*.—Those who advocated the Roman script hold that there are a number of letters which represent approximately the same sound as pronounced in Urdu, but are written differently. They cite four groups which can be easily recognized and will be familiar :

ظ—ض—ز and **ط** for the 'z' sound.

ص and **س—ث** for the 's' sound.

ط and **ت** for the soft 't' sound.

ح and **ه** for the 'h' sound.

The result is that a learner has no idea which particular letter from a certain group is to be used in a given word. They maintain that even life-long practice does not eliminate the risk of error. On the other hand those who favour the present script consider that the Arabic forms are indispensable for the derivation and development of words from their roots.

(b) *Bengali*.—Similarly it is stated that in Bengali there are groups of letters such as three “sha’s” শ ষ স, two “ja’s” জ য and two “na’s” ন ণ which roughly represent the same sounds and thus cause confusion in spelling.

(c) *Roman*.—Roman, too, has a few letters, we are told, which seem to stand for the same sound, *e.g.*, c and k ; c and s. Besides, the Roman alphabet is considered to be deficient in letters to represent some of the Urdu and Bengali sounds. Roman has also been criticized for the irrational spellings used in the English language. On the other hand the advocates of the Roman script do not consider this criticism to be justified. One should not confuse, they argue, the use of the Roman alphabet with English spelling. They believe that the Roman alphabet can if necessary, be extended beyond the 26 letters in order to elaborate a wholly phonetic form of the Roman script covering all sounds in our Pakistani languages and standardizing them in consonants, vowels, and combinations. Spelling, they say, is a matter of convention and it is quite possible to devise a spelling of Urdu and Bengali in Roman script where the sounds are produced exactly and consistently from word to word. English spelling, they agree, is inconsistent and it would therefore be best to have in mind such languages as German or Spanish where there is an almost complete correlation between spelling and pronunciation. In considering the Romanization of Urdu and Bengali they say that it is best to disregard English spellings entirely. The fact that our English language newspapers spell the word عید in five different ways (ID, IDD, IED, EID and EED) is said not to be the fault of Roman script but is due to lack of standardization.

9. *Pronunciation*.—(a) Urdu script does not normally use the diacritical marks, with the result that a word as written or printed can be pronounced in several different ways. The child has to remember whether a letter has “zabar”, “zer”, “pesh”, or “jazm”. The result, it is maintained, is that the average person is likely to mispronounce Urdu words. On the other hand, it is claimed that this sort of defect exists in other scripts as well and that in the case of Urdu this defect can be rectified by adding a few letters in place of diacritical marks.

(b) *Bengali*.—Unlike the Urdu script, it is stated, there is no difficulty in correctly pronouncing the written Bengali words except that the letter (ঞ) is pronounced sometimes soft as (s) and sometimes hard as (sh).

(c) *Roman*.—As letters representing vowel sounds will form part of the spelling of words, it is claimed that there would be no necessity for guess work of the sounds in a scientifically evolved romanized script.

10. *Legibility*.—Urdu, Bengali and Roman scripts are all well formed and equally easy to read from print. However, some difficulty is experienced in reading Urdu printed by the lithographic process when a very fine pen has been used, as for instance, in the daily newspapers. Legibility also deteriorates when large editions are attempted by the same process. In Bengali, joint letters and different visual forms of certain vowel sounds create difficulty for young learners.

11. All the three scripts are somewhat less legible in longhand, particularly when care is not taken in letter formation. Urdu's legibility suffers because the dots and dashes tend to get misplaced, and without them letters look alike. In handwritten Roman the letters b, d, l, k and m, n, u, w are at times difficult to distinguish.

12. *Writing*.—For hand-writing both Urdu and Bengali have the reputation for grace. Urdu has the further virtue of compactness. It is strikingly economical both in the space it occupies and in the time it takes to write. Urdu is indeed a semi-shorthand, and in this respect is said to be superior to Roman. Used by a good calligrapher, Urdu can be aesthetically most satisfying.

13. The chief merit claimed for the handwritten form of Roman is its fluency. Whatever the length of a word, one does not have to raise pen or pencil from the paper; writing is one continuous process. In Urdu script it is said that such fluency is impeded by the presence of letters which do not link up with other letters in a word, and that a further factor which makes a smooth flow in Urdu writing difficult is the form of several letters with dots and a few with dashes which demand repeated lifting of the pen from the paper. On the other hand it is pointed out that this difficulty exists in Roman also as one has to dot one's i's and cross one's t's. We are told, however, that this problem is more acute in Urdu than in Roman, and that even in Bengali handwriting the pen has to be raised now and then.

14. *Printing—Urdu*.—We are told that Urdu in Nastaliq type has proved to be a very difficult problem for the printers. For all practical purposes the Hyderabad (Daccan) experiment proved a failure owing to the unmanageably large number of characters required. The result is that Nastaliq type is not used anywhere on any appreciable scale. Nastaliq is now almost always printed by the lithographic process from stone or plate faces on which the text has been handwritten. This process is said to suffer from the following disadvantages :

- (a) It is slow and laborious and not fit for mass production of books, magazines, newspapers, and other literature.
- (b) It is almost impossible to make corrections, deletions, or additions.
- (c) Illustrations cannot be printed with the text.

15. It is argued that some of these defects, particularly in the matter of illustration, can be removed by the use of the photo-offset process. However, calligraphy still remains a problem as the text loses its uniformity if more than one scribe is employed. Moreover, the cost of photo-offset printing is rather high.

16. On the other hand, evidence shows that Urdu in the Naskh type is comparatively free from these defects. Modern machine printing

methods can be used with this type. Despite these advantages, however, we are informed that letter press in Naskh has not won popularity mainly because a type face suitable for use in both composing-machines and typewriters has not been developed. Naskh, too, has a large number of characters, so that composing in it is a slow process, and the type founts available are unwidely.

17. Another major difficulty faced in printing in Urdu Script is, we are told, the placing of the diacritical marks. In order to compose a line in these scripts the printer must first compose it without these marks, then compose another line placing the diacritical marks above the letters, and then compose a third line for the marks which come below the letters. These two last lines are in smaller type. Needless to say this takes time and adds to printing costs. We are asked, however, to take note of the fact that experiments, notably at Lahore, have been made in a process whereby the diacritical marks are composed along with the letters, and that this process, if developed properly, could remove many difficulties in this respect.

18. Here we may also refer to some suggestions and experiments made for the simplification of the Arabic-Persian script which can also be used for the writing of Urdu. The best known of these in that which is based on writing each character separately as in Roman. The latest exponent of this, to our knowledge, is Nasri Khattar, who has evolved a "unified Arabic type" in which he has given a fixed shape to Arabic characters written separately and remaining unchanged whatever their position in a word. This is undoubtedly a step forward in simplification and may deserve serious consideration. However, the system is said to have shortcomings; it does not eliminate the conventional script used for handwriting; and it offers no solution to the problem of the insertion of the diacritical marks.

19. *Printing—Bengali.*—Bengali printing does not present much difficulty in composing the vowel marks. But the traditional Bengali printing press has a large number of type-founts mainly due to conjoint letters which made hand-composition rather slow. This defect has been largely overcome in modern Lino type and Monotype mechanical composition by separating the conjoint letters but there is still room for reduction in the number of characters. The adoption of a similar system would also improve the Bengali typewriter both in the speed of typing and in the attractiveness of the typed letters.

20. *Printing—Roman.*—The claim for the superiority of Roman for printing purposes or use on a typewriter is based on the following arguments. Composing a text in Roman is quick, continuous, and economical; it is equally adaptable to all printing processes; and an enormous range of attractive type faces and founts is available. We are reminded, however, that the Roman script is not the same as English script. In the standardized Roman script there would possibly be more letters and perhaps a number of diacritical marks. Therefore, some of the advantages mentioned above may be offset by this factor.

III. General Considerations :

A. Arguments in favour of adoption of the Roman Script :

21. (a) *Literary.*—It is claimed that using a simple and standardized phonetic form of Roman script, adults can master reading and writing in

30 hours of class-work. Spelling mistakes are reduced to a minimum and no complicated calligraphy needs to be mastered. Moreover as the same script would be used for all Pakistani languages, a common base for production of literature would be available and this material could be produced cheaply and in quantity. The Army has claimed success with this in our country. Literacy figures have shown marked improvement as a result of the use of Roman in Turkey, Malaya and Indonesia.

22. Against this view it is argued that quick mastery of reading and writing through Roman script is not possible because four different forms (written capitals, printed capitals, written lower case, printed lower case) must be mastered. Literacy depends on the energy with which the learning process is tackled, not on the script to be mastered. It is not correct to presume that the adoption of the Roman script would increase literacy. Figures indicating the success of the Roman script in our Army and in other countries need to be examined carefully. Zeal and enthusiasm for national reconstruction, determination to root out illiteracy, planned programmes for adult education, more schools and more teachers, greater use of audio-visual aids, all these are important factors in the spread of literacy. Attempts made in this respect so far have not been adequate in our country. As regards other countries, sufficient facts and figures are not available to show conclusively that the old script was responsible for illiteracy or that the new script has been the deciding factor in the increase in literacy.

23. (b) *Improvements in General Education.*—Children are able to speak fluently in their mother tongue by the age of five. Once they enter school, their progress is slowed down while they master the mechanics of reading and writing. Many never completely master these, and many in our schools become so discouraged that they drop out after the first or second class, thus causing unnecessary wastage. Any step such as the use of Roman script, which will facilitate more rapid and easy mastery of the mechanics of reading and writing will therefore have a direct influence on schooling, encouraging children to learn without losing heart. Greater concentration by teachers on the content of education rather than on reading and spelling mistakes will also be possible.

24. Against this, it is pointed out that these arguments apply to Urdu and Bengali as they do to the Roman script. A modified and scientifically standardized Urdu or Bengali script would have more or less the same advantages as the Roman script which is none other than the phonetically modified English script. In spite of the fact that English spelling and pronunciation are vague and confusing, education in the medium of English has reached fairly high standards. There is no reason therefore why the same should not be possible through the medium of Urdu and Bengali scripts.

25. (c) *A Common Base for National Unity.*—The adoption of the Roman script would have to take place for all Pakistani languages. If this were done, we are told, the different language groups of Pakistan would immediately be brought closer together. Urdu and Bengali have already much in common; if they were written in a common script it would be much easier to learn the national language other than one's own. Even a modest knowledge of another language enables one to converse in that language; for example in a country like Switzerland with three official languages, people are able to carry on conversation,

with each participant speaking in his own language. This is only possible in multi-lingual areas where a common script is used. Such a step would also tend to bring the two national languages closer.

26. Against this line of argument it is said that the idea of a common script promoting unity is fallacious. The Roman script has not succeeded in unifying Europe nor can an Englishman learn French without tears. Besides, if a common script has to be adopted for the national language of Pakistan, the claims of Arabic (Naskh) in which the holy Quran is written and read by all Muslims, cannot be overlooked. The Roman script, it is argued, would provide only a small area of common ground between Urdu and Bengali.

27. (d) *Learning Science and Mathematics*.—Acquiring a knowledge of science and mathematics, and even of certain developing subjects in the humanities, such as psychology or sociology, entails the use of a wide range of technical terms. The internationally accepted terms exist already in the Roman script, and it is much easier to adopt them as they are. Similarly the use of Western numerals, it is claimed, would facilitate the learning of mathematics and scientific formulae. It would also be a great advantage to use the internationally accepted mathematical symbols.

28. The other side points out that all scientific and technical terms can be transliterated into the Urdu or Bengali script without much difficulty. As a matter of fact, western numerals and symbols are being increasingly used in modern Urdu scientific literature even now.

29. (e) *Use of Urdu and Bengali as Official Languages*.—We are told that the adoption of the Roman script for Urdu and Bengali would permit the use of these languages in modern printing processes and existing English typewriters thus facilitating the early adoption of these two languages as the official languages. Once this is done the development of these languages as effective vehicles for business, commerce and education would receive a tremendous stimulus. The effect, they say, would be to place them on a par with other languages of the world in which one sees, not without envy, mass circulation of newspapers and attractive and abundant books and periodicals.

30. Against this it is pointed out that even if the Roman script is adopted for our national languages, it would not be possible to use the existing English typewriters for official and business purposes because several letters and diacritical marks would have to be added to them in order to cover all the Urdu and Bengali sounds.

31. (f) *Adoption of Roman Script by other Countries*.—An indication of the utility and popularity of the Roman script, it is argued, is to be found in its official adoption for widely varying languages of the world. It wholly replaced the Arabic script for the writing of Turkish in 1929 and in a modified form (Rumi) is now officially replacing the Arabic (Jawi) script for the writing of Malay. It has been used for all writing in Indonesian and Vietnamese (in a script known as "Guoc-gnu") for many years. A Romanized spelling of Chinese was introduced into schools, and newspapers in this script are also being produced. In the case of Malaya and Chinese, the traditional scripts are being allowed to

co-exist for a number of years with the new Romanized forms. On the whole, the Roman script is today used for several languages in Asia, most in Europe and Africa, and all in the Americas.

32. On the other hand it is pointed out that the analogy is not valid. Countries which have given up indigenous scripts have done so either for political reasons or because their scripts were not developed enough to meet modern requirements. Urdu and Bengali suffer from no such handicaps. The few technical flaws they have can be easily removed if an effort is made, preferably with official backing.

B. Arguments against the adoption of the Roman Script :

33. (a) *Break with our Cultural Heritage.*—The greater part of our cultural heritage is preserved in the existing scripts. This has accumulated over a period of centuries. Romanization of our scripts would, it is argued, sever our links with the past, and future generations will be cut off from the literature not only in our own languages, but also in Arabic and Persian, which play a significant role in the formation of our national Islamic outlook. It is stated that this has happened in the case of those countries which switched over to the Roman script some time ago. It is highly improbable that the important and essential parts of our literature will be transcribed into the new script. We have not been able even to publish some of our most important books still lying in manuscripts and our classics also have been reprinted rarely. Moreover the printing of these in the Roman script would involve huge expenditure and would be a waste of time and energy which could be diverted into more constructive channels.

34. Against this line of argument it is stated that the coming generations will not be completely cut off from our inherited literature. It is argued that any worthwhile literature from the past would be reprinted in the new script. Culture, it is pointed out, is a dynamic, not a static thing. It is what each generation makes of it, and literature is being added all the time. A change of script does not therefore entail a break in the evolution of culture. Our own culture has undergone far-reaching changes in the last fifty years, and even the last twelve years have brought in their train some perceptible changes in our cultural pattern, which the prevailing scripts were unable to stop. A change in the script is not equivalent to a change in the language, and we would continue to speak the same language whatever script is employed. Even in Roman script classics such as Iqbal's *Bang-i-Dara* or Nazr-ul-Islam's poetry or even Saadi's *Gulistan* will be as beautiful and meaningful for us culturally as in their Nastaliq or Bengali editions. No concrete evidence is available, they say, that other countries which have changed over to Roman have suffered any cultural loss.

35. (b) *Roman Script is unsuited to the genius of Pakistani Languages.*—A language develops in a particular cultural context and acquires an individual personality with the passage of time. Its script is inseparable from the language and any attempt to alter a component part of the language, such as its script, would, we are told, hamper its growth and development. In the case of other languages, the change over to Roman script was perhaps an advantage for them, but our own national languages are well developed, and therefore the change would be harmful to their further development.

36. On the other hand, it is argued that history is against such a view. Far from hampering their growth, change of script has resulted in the unprecedented development and expansion of the Turkish, Malaya and the Indonesian languages.

37. (c) *Many would be immediately made Illiterate.*—We already have a low literacy rate and a change to a totally unfamiliar script, according to one view, would turn a large percentage of those presently literate into illiterates overnight. We do not have the resources to teach them all over again.

38. Such an event, according to the other view, is possible only if the change over were sudden. Those literate in existing scripts would remain literate in them and the introduction of the Roman script should, in any case, be spread over a number of years during which time it would appear side by side with the old scripts. And the very fact that literacy is low, approximately 17%, in the present script, shows how opportune it is to change over to the new script now.

39. (d) *Ties with other Muslim countries would be severed.*—The supporters of the Naskh script argue that although in the political set up of today we have to keep our contracts with every country, yet as a Muslim State, Pakistan must maintain the closest ties with other Muslim countries for political, cultural, and religious reasons. All these countries have the same script. Iran where Nastaliq was used, has now switched over to Naskh while the others have had Naskh for centuries. We should not take the step of changing over to Roman script unless all Middle Eastern countries do, otherwise a great barrier would be created between us and all of them.

40. On the other hand it is pointed out that two major Muslim countries, Turkey and Indonesia, have already adopted Roman script. As for Iran and the Arab countries, our contact with them now-a-days is through English rather than through their or our languages. It is further argued that use of the Roman script would make our own culture more accessible to people throughout the world.

IV. Concluding Remarks :

41. From the analysis of the preceding discussion the following points emerge :

- (a) That a change in script raises sociological and cultural as well as technical problems, and one cannot deny the importance of these problems ;
- (b) That views, both for and against the Roman and the Pakistani scripts are held sincerely and strongly both on technical and sociological grounds ;
- (c) And that none of these scripts—Urdu, Bengali, or Roman—lays claim to perfection in its present form, but each claims to be able to remedy its defects and deficiencies through a process of reform, standardization, and development under official patronage.

42. It is, therefore, obvious that considerable preparatory work has to be done to evolve and standardize the Urdu, Bengali, and Roman scripts before taking a decision. As educators we believe in the method of investigation and experiment. We consider therefore that on the one hand the Urdu and Bengali scripts should be reformed and developed and on the other a form of Roman script suitable for the transcription of Pakistani languages should be evolved and standardized. For this purpose we recommend that :

- (a) either the Government give financial support to individuals and organizations interested in producing the Naskh or Roman scripts and in reforming the Bengali script, or
- (b) alternatively that the Government should appoint three committees of linguists, one for determining a printable standardized Urdu script, the second for reforming the Bengali script, and the third for evolving and standardizing a Roman script for Urdu and Bengali.

43. When such scripts have been standardized and developed, they should be examined by experts to assess their comparative merits in order to arrive at a decision.

QUESTION OF SCRIPT

SUMMARY OF RECOMMENDATIONS

1. Since an Urdu, Bengali or Roman script suitable for our language has not yet been evolved or standardized to meet modern requirements, considerable preparatory work has to be done before determining whether any change should be introduced.

2. To facilitate such preparatory work, Government should give financial support to individuals or organizations for producing such scripts, or alternatively, the Government may appoint three committees of linguists, one for Urdu one for Bengali, and the third for a Roman script for Urdu and Bengali.

3. When such scripts have been developed and standardized, they should be examined by competent experts and their comparative merits assessed.

CHAPTER 24

EDUCATIONAL ADMINISTRATION**I. Educational Administration, its Nature and Functions :**

1. Education is a complex and highly specialized field, and its efficient administration requires technical competence, administrative ability, and understanding of educational developments in different countries of the world.

2. On the professional side the educational administrator must be familiar with the specialized skills required in teaching, with the special knowledge needed for sound curriculum development and the accurate evaluation of teachers and students, and have an intimate knowledge of the operation of educational systems elsewhere. The administrative procedure of recruiting, promoting, and transferring the staff of schools involves a specialized ability to evaluate the professional competence of persons engaged in teaching. Similarly, the recognition of schools should be based upon a knowledge of how to evaluate the academic programme, the quality of instruction, and the qualifications of teachers.

3. At the higher levels all of these functions are performed by the same individual who must exercise professional judgment on the many questions brought to him. If he is to make sound decisions either in the professional or administrative areas of his responsibilities, he must have an intimate knowledge and understanding of the educational system in which he is working and of the educational problems and practices in other countries. It is highly improbable that anyone can possess these qualities unless he has had actual experience in educational programmes of many types and has spent his working life studying the educational process and grappling with the problems involved in it. It is only through this study and experience, combined with his own vision, that the educational administrator is able to evolve policies that are both educationally sound and rooted in reality. If educational administration is to operate effectively it must be organized and staffed in such a way as to respond to problems not only with efficiency but also with professional competence. We here suggest the kinds of persons needed in this service, how they may be obtained, and the administrative organization that will permit them to operate effectively.

II. The Recruitment and Training of an Educational Cadre :

4. We have stressed throughout our report that the individuals who staff our educational institutions must be men of ability who also have the qualities of leadership necessary to make them effective. We have further insisted that their performance should be comprehensively and continuously evaluated, and that their promotions should be based upon demonstrated ability. It is equally important that those who fill the highest posts in the educational field be men of the highest status, who reached these positions because of the quality of their professional performance. Since these men will be responsible for educational policy and must provide the leadership in developing and expanding our educational programme, it is imperative that they have both ability and eminence as educators that will give value and weight to their opinions and advice, and also that their personality and character be such as to inspire confidence in those with whom they work.

5. In recent years our highest educational service has not been drawing its share of the ablest young men available. Formerly the members of the topmost educational service were recruited directly. The same qualifications were demanded of them and they were recruited at the same level as that of the Civil Service. Even after the educational service was provincialized and the I. E. S. was replaced by Class I, the quality of men and the scales of salary were kept approximately equal to those in the I. E. S. Since 1936, the policy—adopted under democratic pressure of filling all posts through promotion and the lowering of the salary scales at the higher levels—has brought about a general deterioration in the quality of administrative personnel. The Commission wishes to make it clear that it is not opposed to the principle of promotion ; but would like the highest service to be staffed both by young men coming from the national pool of talent and also by those of broad experience, high qualifications, demonstrated ability and the personality for leadership, whether they come from within or outside the educational service. To achieve this objective we wish to make several related recommendations.

6. First, we recommend that the highest educational cadre should be organized with the same financial attractions, professional opportunities, and time scales as the Civil Service. There should be approximately the same proportion of positions at each level and the salaries at each level should be comparable with those in the Civil Service. Only by creating this type of structure will young men be able to choose their careers on the basis of professional interest instead of doing so by calculating their opportunities of future advancement in one service or another.

7. The second step would be to recruit this cadre in three ways. Some should be recruited directly at the age of 21 to 25, others through promotion within the service, while still others would be recruited directly from our universities, colleges and schools on the basis of the demonstrated qualities of professional competence and leadership we have stressed above. Although recruitment should be on a national basis, separate cadres should be established for East and West Pakistan and for the Central Ministry.

8. The third step would be to give a period of training both in general areas and in the professional field to administrative staff recruited directly. In the case of those selected at an early age there would be a two years' academic programme followed by another period of two years of field experience, during which the young officer would be given practical experience in actual problems related to the several stages of education and its various specialities. For those recruited directly at a later age from outside the service, shorter courses should be organized to familiarize them with departmental procedure and policies and to strengthen their particular educational speciality. An academy should therefore be established to perform this training function, or the Education Extension Centres now being established in each Wing might possibly be used for this purpose.

9. *The In-Service Training of Existing Staff.*—Up to this point we have been concerned with re-establishing the tradition of recruiting highly qualified officers to the highest educational service. The impact of this proposal will not be felt for several years, and in the meantime it is essential that the competence of those currently in service be increased. We recommend that the Education Extension Centres referred to above should

organize courses of varying length designed to improve both the administrative ability and the professional competence of headmasters, inspectors, specialists, and departmental administrative personnel. Specified courses should be required of those now in service and their performance in these programmes should be evaluated and given weight in determining promotions and future assignments. Indeed, no persons should be appointed to the higher posts unless they have successfully completed the required training courses and have been judged to have the professional, administrative and personal qualities demanded by these posts.

III. Departmental Organization :

10. The reorganization of the administrative structure of Government is under the consideration of a special committee and until this structure has been determined and the relationship between the Central Government and the Provinces clearly defined, it is not possible to express a definite opinion on departmental organization. Naturally the administrative structure of education must reflect the relationships and conform to the pattern that is established, but there are certain general comments which would seem appropriate.

11. The Commission has recognized two major divisions within the educational system, *general education* and *technical education*, and we believe that these should form the basic administrative divisions. Within these two areas there should be a further sub-division by educational stages. In the case of general education these would be (i) primary, (ii) secondary, (iii) higher, and (iv) the overall function of training and manpower. In the case of technical education, there should be sub-divisions for (i) vocational and technical institutions entered after Classes VIII, X and XII ; (ii) vocational schools and polytechnics ; (iii) the co-ordination of engineering education ; and (iv) the large scale programme of evening courses which should be a special feature in this field. Each of the stages of education would be again subdivided into special functions such as curriculum, instruction, and inspection.

12. At the Provincial level we believe that the two major divisions of general education and technical education should also form the basic sections of educational administration. In the general education section there should be a separation by levels of education. The implementation of our proposal for universal primary education will involve a rapid expansion at this stage and the additional expenditure of large sums of money. At the secondary level the diversification of courses, the development of multi-purpose institutions, and the problems of absorbing the Intermediate classes into the secondary system will involve a tremendous administrative effort. Higher education has always been a stage where the problems of staff, instruction and facilities were more closely related to the university level and with the separation of the Intermediate classes the differences will be even more marked. Each of these stages should be administered through a separate division in the administrative structure, each with its own head, staff, and budget and with a measure of autonomy in implementing the broad educational policies laid down for it. The head of each division should be an outstanding man with wide experience in the stage of education his division is designed to administer. The entire educational system should be coordinated by an educationist who has had experience in one or more of the sections.

13. The creation of separate sections with considerable autonomy within their spheres of responsibility introduces a concept of the devolution of authority that has not received much practical application in our educational administration. We have been hampered in the past by a failure to delegate authority and responsibility effectively and as a result those in high educational posts have been buried under an unnecessary load of administrative duties. As a consequence they have seldom had the time to concern themselves with long-range planning or to provide the kind of educational leadership that is needed. In the organizational arrangement outlined above, the provincial head of the department, for example, should be involved only in policy matters, problems that raise policy questions, and the problems of coordination. Operational decisions should be made in the appropriate divisions where authority and responsibility should be further delegated. Unless there is a willingness and a conscious effort to decentralize the making of decisions, problems will never be solved rapidly nor the pace of educational progress quickened.

14. *The Role of the Inspector.*—The function of the Inspector has been frequently discussed and as frequently criticized. The task of the Inspector is to raise the quality of the work in the classroom, and this he can do only by bringing in new ideas, encouraging initiative and directing the whole of his attention to content rather than to the external machinery of education. An Inspector should not be a combination of a clerk and a policeman, as he is now, but an educationist, and we propose immediate steps to bring us into line with the practice in advanced countries.

15. Perhaps the first step would be to change his designation from inspector to something that more accurately describes the function he is expected to perform, and we suggest that this possibility be given serious consideration. The second step would be to give such an officer, either before or after selection, a special course of training at an educational extension centre. As a third step we would like to suggest experimentation in the use of teams of specialists working with the inspectors to help improve the educational programmes of individual schools. This system is being used increasingly in other countries and holds great promise as a means of improving our educational system. Finally, the inspectors should be provided with books and professional journals from some of the more important countries of the world, and they should be expected to study these and other relevant literature produced by international organizations, particularly UNESCO.

16. *The Role of the Headmaster and Principal.*—The post of Headmaster has usually been filled by seniority. In consequence, it has become the practice for headmasters to be appointed when they are on the verge of retirement and when they have neither the time, the energy, nor the inclination to exert a positive influence. Moreover, the headmasters do not carry the authority required for effective management, and they are constantly harassed by interference from outsiders. We recommend that a system be adopted whereby headmasters are normally appointed from among younger men, preferably between the ages of 35 to 45. At the same time the headmaster must be given effective control over the operation of his school and should have a degree of authority and responsibility similar to that exercised by the headmasters elsewhere in the world. He must be the type of person who can give leadership both to his teachers and to his students, a man whose ideas carry weight and whose personal character is an inspiration and an example to his students. What we have said about headmasters applies equally in the case of

principals. It is not enough to select a man for his academic qualifications alone, important as these are. The men who are put in charge of our colleges and schools should be chosen with the same care as we select a captain for a ship or a commander for a company. Upon them depends in the last resort the performance of all. We have in the past overlooked the vital importance of character and qualities of leadership in those to whom we entrust our young people. It is particularly significant that where we have the right kind of man in charge, we hear little of student unrest or poor standards of work.

IV. The Ministry of Education :

17. The main function of the Ministry of Education has been the co-ordination of educational policies but it has never been given adequate staff to perform this function efficiently. Despite this handicap, the Ministry through the meetings of the Advisory Board of Education, the Inter-University Board, and the Council of Technical Education has done much useful work. Nevertheless, considering the importance of a national system of education, the Ministry has not been able to discharge the duties which a Central Ministry should.

18. The achievement of educational reform will require that the Central Ministry take positive leadership in educational affairs. In the first place educational policy will be recognized as an essential part of national policy. Secondly, as we have indicated, the Central Government must assume a greater share of the financial burden in educational endeavour with direct national implications, specifically, adult education, residential schools, scholarships, technical and vocational education, and higher education. The Ministry has always had some responsibilities for cultural relationships at the international level, and these responsibilities, which include the exchange of teachers, the procuring of people from other countries to work in our colleges and universities, and similar activities, are bound to increase. Our emphasis upon fellowship abroad to provide advanced training for specialists, close contacts with students studying in foreign countries, and the need for increased foreign assistance in certain types of educational programmes will further increase the Ministry's work in the international sphere. Since the basic reason for the existence of this Commission is a desire to gear our educational effort to the realization of fundamental national objectives, the Ministry, in cooperation with provincial educational authorities and the universities, must assist in keeping the direction and pace of educational development moving in line with these over-all aims. In addition to this, the Central Ministry must do as the national education authorities do in other nations where the Government is decentralized ; it must provide the leadership and the expert advice that are needed to initiate and sustain educational efforts at all levels in its many specialities.

19. The concept of a Ministry with these functions has implications for its structure and staffing. We believe that the Central Ministry should be organized on the basis of the two major divisions of general and technical education. These should be further separated into Divisions related to the different sections of education or other responsibilities. As we indicated in the chapter on Finance, there should be another section which should be basically concerned with the question of the generation of funds for the support of educational effort. This implies that the personnel of the Ministry must include many outstanding men in the various phases

of education whose opinions and advice will command the respect of educators in Pakistan and in international councils. If the Ministry is to perform the function expected of it, will require considerable expansion.

V. Planning and Research in Education :

20. *Educational Planning*.—In outlining our ideas on the organizational structure of educational administration we have stressed the importance of a section whose major function would be planning. In simple terms, planning is a process by which the direction and scope of future activity is determined by specific objectives, past experience, knowledge of present resources, and estimates of what will be available in the future. Given the objectives, the key to sound planning is the possession of complete and accurate information. The absence of such information has been a constant source of difficulty to us not only in education but in virtually every other sphere of activity. Without it planning can be only guessing or hoping, either of which are wasteful and uneconomic. There is a tremendous lack of information about the present educational situation and much of the information we have has never been systematically analyzed and presented in a meaningful manner. There is a similar dearth of information about educational practices and trends in other countries. Consequently, those who must make our educational decisions must do so blind folded, having neither sufficient information about our educational system nor the experience of other countries to guide them.

21. Planning, however, should not be thought of as merely the collection of statistics and other forms of information. The analysis and interpretation of this data is a more difficult but equally essential part of planning. This involves the application of projective techniques to statistical data ; the development of alternative probable consequences of proposed courses of action ; and the exercise of informed and experienced judgment upon specific problems. Educational Bureaux have recently been established in both wings and in the Central Ministry to gather the kind of information that will be needed by education officers ; to collect, standardize, and analyze statistics on education ; and to publish material for the departments and the Ministry aimed at keeping teachers, the general public, and readers abroad informed on educational practices. We feel that these Bureaux must be suitably strengthened so that the planning so necessary for sound educational development can be pursued intelligently.

22. *Educational Research*.—A comprehensive programme of educational research must be included in any proposal for sound and lasting progress in education. It is from the findings of research that the education planner receives most of the data that cannot be secured in any other way. Those involved in the actual operation of the educational programme are, by the fruits of research, informed of improved practices and new insights into educational practice. At the present time very little educational research is being done in Pakistan, yet the need for this kind of activity is great. We have a pressing need for research findings in such areas as the economical construction of school buildings, the methodology of teaching certain subjects, and at an even more fundamental level, the psychology of the Pakistani child, and the development and standardization of intelligence, aptitude, and diagnostic tests. We propose, therefore, that the Ministry of Education should have a research institute related to it that is adequately staffed and equipped to perform this vital function.

EDUCATIONAL ADMINISTRATION

SUMMARY OF RECOMMENDATIONS

1. As education is a specialized field it must be administered by persons having a high degree of technical competence as well as administrative ability and experience. (1-2).

2. The highest education service should be organized in the same manner, with the same financial advantages and proportionately the same professional opportunities as the Civil Service. Officers of this service should be recruited by (i) direct selection of the ablest young men between 21—25 years of age, (ii) direct selection at later ages of university and college teachers of proved ability, (iii) promotion from within the service on the basis of merit. (4—7).

3. Those recruited directly into the service should be given training in general and professional fields either in the recently-established Educational Extension Centres or in an Academy especially created for this purpose. (8).

4. Promotion within the service should be on the basis of merit as determined by a continuing evaluation of the officer's performance. Headmasters, Inspectors, and other administrative personnel of the department should be required to undergo professional and administrative courses at the Extension Centres. Their performance in these courses should be taken into account in making future assignments and promotions. (9).

5. When the new administrative pattern of government and the relationship between Central and Provincial Governments have been determined, it would be possible to define the structure of educational administration for East and West Pakistan.

6. The Central Ministry should assume a role of positive leadership in the programme of national education and undertake the larger responsibilities assigned to it in this report. To perform its functions properly the Ministry should be suitably expanded and staffed with outstanding educators of high professional and administrative competence. (17—19).

7. The Central Ministry should establish such institutes and bureaux as may be required to assist it in long-range planning and in operation and fundamental research projects. (20—22).

THE UTILIZATION OF SPACE AND EQUIPMENT

1. In the years since the creation of Pakistan, large numbers of educational buildings have been erected for primary and secondary schools as well as for colleges and universities. The total cost of this construction programme must have been considerable. Overall construction costs have increased several times in the same period so that a building which might have cost one lakh to erect in 1949 would cost two or three lakhs today. Money provided for such building purposes has not matched these increased costs nor the tremendous expansion in the demand for education. The problem we face now and in the immediate future is one of making up for the shortcomings of the past and providing for future growth. The buildings we have can house properly only a small number of the children in our schools, and even so, many of these are poorly designed for the purpose they are intended to serve. Within the next 10 years we must provide space for an expanding population with many more children of primary school age. At the secondary level we shall have to intensify the construction of hostels and also provide buildings for a variety of technical and vocational programmes. All of our universities are at some stage in the development of new campuses, the ultimate cost of whose buildings will come to several crores of rupees.

2. Unfortunately very little planning has gone into our school building programme, with the result that many of the structures are inadequate ; others are poorly constructed or difficult to maintain ; and in some cases they are unnecessarily expensive. We have pointed out on many occasions in this report that the nation can ill-afford the luxury of waste particularly when it is the result of poor planning or no planning at all. As in other areas, it is imperative that we marshal our resources in the sphere of educational construction so that the maximum benefit is received from whatever expenditure is made. To achieve this objective we suggest two principles to guide our planning in the construction of educational buildings. First, every effort should be made to achieve the maximum utilization of existing facilities. Secondly, every building that is constructed should be simple and functional in design, make maximum use of local building materials, and be economical both to construct and to maintain. We would like to discuss each of these principles and the implications of them in greater detail.

3. It is common practice in educational institutions in other countries to make annual or semi-annual surveys of the use of classrooms, laboratories, and other facilities to serve as a guide for planning time-tables, assigning space, and providing information on the need for expanded facilities. In such surveys a time-table is made for each classroom and laboratory from which it is possible to determine the percentage of school time the facility is in use as well as the percentage of its student capacity that is being used. Where such surveys have been made, it is often found that by re-assigning classes, by careful scheduling, and by using the entire school day it is possible to accommodate many additional students. The optimum utilization of space within an institution assumes that the authorities are aware of the existing use being made of each facility ; that the assignment of classrooms and the scheduling of classes are both the responsibility of the same institutional officer ; and that there are no artificial restrictions placed upon the use of particular facilities. There is no

reason, for example, why the room used for lectures in history cannot be used to the same advantage for lectures in Arabic, economics, philosophy, or other subjects.

4. In view of the importance of this matter the President's Committee on Education beyond the High School (USA) suggested the establishment of a National Research Centre and Clearing House for conducting studies on space utilization, design, and construction and for the dissemination of information on these. We feel that the need for such a centre is even greater in our case and recommend that the Ministry of Education should take the necessary steps to establish one. We further recommend that each of the universities and colleges should designate a staff member to be responsible for ensuring the maximum utilization of each class room, of laboratory equipment, and other facilities and that the same officer be in charge of the scheduling of classes and the assignment of the lecture halls and laboratories in the institution.

5. We have already observed that the construction of educational buildings in the past has suffered from a lack of planning and research. Several factors are involved here which deserve further consideration. There seems to have been little realization on the part of the Government or among educators themselves that the design and construction of school buildings are actually specialized functions. As a result the planning and building of schools have normally been assigned to those whose experience has been gained primarily in the construction of roads, bridges and dams. Considerable research has been done in other countries covering the whole spectrum of problems related to school construction. The size and shape of classrooms most conducive to good vision and hearing ; the placement and size of windows to permit maximum light and ventilation ; acoustics ; construction patterns and furniture that will minimize the possibility of injury to small children ; and colours that get the most advantage from natural light and prevent eye-strain, are but a few of the problems that have absorbed the attention of researchers elsewhere. Although the findings of all of this research are not necessarily applicable to school problems in Pakistan, it is essential that those who design and construct our buildings be aware of what has already been done. If our school structures are to be both economical and functional, it is equally important that we, too, begin intensive research aimed at discovering, developing, and using indigenous materials for the construction of educational buildings and furniture. Only through the widespread use of materials which are readily available, durable, easily maintained, and suitable for schools can we hope to provide the required expansion of our educational system without bankrupting the nation.

6. To correct the existing weaknesses in our programme of school construction and to provide for the planning, research, and organisation necessary for future building activity we recommend that :

- (a) The Government departments which are currently responsible for the design and construction of school buildings be required to maintain a staff of architects and engineers who are specifically trained in the construction of educational buildings and that all school construction projects undertaken by these departments be placed directly under the supervision of such personnel.
- (b) The Ministry of Education should take steps for the creation of a Research Centre with branches in each province. It should be the responsibility of these centres to :

- (i) Establish standards for the construction of school buildings, from housing provided by educational institutions, from school furniture, and from other educational facilities.
 - (ii) Collect and disseminate the results of pertinent research in the design and construction of school buildings and school furniture as well as information on the characteristics, quality, suitability and availability of local construction materials.
 - (iii) Stimulate research in engineering colleges, research institutes, and other appropriate agencies on problems related to the construction and maintenance of school buildings and on the development of local building materials.
 - (iv) Work in a consulting capacity with school authorities at all educational levels on problems related to the design and construction of educational facilities.
- (c) When undertaking major projects of school construction those responsible will be well-advised to retain a firm of consulting architects with broad experience in this area of construction.

7. *Educational Equipment.*—Much of what has been said about the lack of planning and the resulting wastage of financial resources in the area of school construction applies with equal force to the procurement of educational equipment. The problem is particularly acute in the colleges and universities where significant amounts of money are involved in purchasing scientific equipment; but it is not unknown in our secondary schools. The major difficulties encountered in this area result from (a) the purchase of equipment without due consideration of the requirements of the programme for which it is purchased; (b) the tendency to dissipate money upon intricate items which have limited usefulness and which cannot be properly operated by those supposed to use them; and (c) the lack of adequately trained technicians qualified to maintain and repair the equipment that is available. We are aware of the fact that in many cases expensive equipment had been obtained long before the programmes for which it was to be used were actually drawn up. We fear that there is a great deal of equipment gathering dust in college and university laboratories either because the teachers are unable to utilize it or, more commonly, because there is no one available with the skill to repair it. We are particularly conscious of the waste involved in unused scientific equipment because its procurement requires the expenditure of limited and carefully husbanded foreign exchange. Effective measures must be taken to assure that the equipment we have is being fully utilized and that it can be properly maintained and quickly repaired.

8. Much of the expansion of education recommended in this report is in the areas of scientific, technical, and vocational education and in the teaching of these subjects at the secondary level. It is in these areas that the use of expensive equipment is most necessary and we envisage that the demand for basic equipment in the sciences and in certain vocational fields will increase tremendously as these programmes are initiated. We believe that it represents an unnecessary expense continually to seek this material in foreign markets. It will be to our advantage to manufacture in Pakistan those items that are in the greatest demand. Such a venture should permit extensive savings in the total expenditure for these projects, conserve our foreign exchange, and ensure a quicker implementation of these recommendations.

9. As one solution to the above problems we recommend :

- (a) That universities and Departments of Education designate an officer to review their requirements, to indicate the use presently made of existing equipment, and to ensure its most effective use. This report should be scrutinized by Vice-Chancellors and heads of Departments of Education before new equipment is ordered or foreign exchange applied for.
- (b) That immediate steps be taken to train a number of technicians in the maintenance and repair of scientific equipment. One such technician should be retained in each university department which makes extensive use of scientific equipment. In addition, a centralized repair service should be established in the Provincial Departments of Education to serve the needs of colleges and secondary schools. These positions should be filled by men well trained in science and should carry a rank equivalent to lecturers in the universities and a commensurate status in the Department of Education.
- (c) Each University should retain a qualified member of staff trained as an instrument maker. Such a person should be able to produce a number of items of scientific equipment and to design some of the unusual items required for specific research problems.
- (d) The Ministry of Education should in consultation with the Ministry of Industries investigate the feasibility of manufacturing certain widely used items of scientific equipment.

10. We must emphasise that although these recommendations call for expenditure of money, they should in the long run represent a substantial saving through the prevention of waste. It is clearly false economy for us to spend crores of rupees on educational buildings and equipment only to discover too late that the buildings either were not needed or were so poorly designed or constructed that they failed to realize the purpose for which they were built ; or that the equipment is lying unused. If we are to abolish the waste that has accompanied the lack of planning in the past, we must have people with the skill and the experience to give direction and purpose to our future efforts.

11. Some careful thought should also be given to the possibility of using such visual aids as films, film-strips, and slides to supplement instruction or as substitutes for more expensive equipment needed to demonstrate scientific principles or technical practices. There are numerous opportunities where a highly satisfactory presentation can be made through photographic media when the equipment normally needed for such a demonstration is unavailable or too expensive for the limited use to be made of it.

12. The employment of these materials for this purpose has several advantages in addition to the rather substantial one of obviating the necessity for the purchase of equipment that can be put to only occasional use. With careful planning and adequate organization the same film or slide can serve the needs of a number of different institutions and teachers over the course of a year and can be used again in subsequent years. Moreover, when imaginatively used, these devices often present materials more clearly and more effectively than the teacher can himself because of the scope of action and the artistic inventiveness available in the picture.

Where a film or slide projector is a part of an institution's equipment it can serve the needs of a number of teachers and departments over the course of an academic year.

13. While encouraging the use of this type of equipment and material, we would urge that the programme be built slowly and in a way that ensures maximum utilization. The practice is common in other countries to establish regional centres from which both the operating equipment and the films and slides are sent out on loan upon request. This arrangement permits the visual centre to adapt its rate of growth to the use that is being made of the materials, prevents unnecessary duplication, facilitates the repair and maintenance of equipment, and provides the organizational resources to encourage the use of films, slides, and other devices through the dissemination of information on what is available and how it might be used. For these reasons we would recommend that the appropriate educational authorities set up such centres where they do not exist and strengthen those which do for the distribution of visual aids and for the encouragement of their use.

THE UTILIZATION OF SPACE AND EQUIPMENT

SUMMARY OF RECOMMENDATIONS

1. A planned effort must be made to ensure the construction of functional and economic school buildings and furniture and the maximum use of classrooms, laboratories, and educational equipment. (1-2).

2. Each university and college should appoint one staff member to be responsible for the maximum utilization of classrooms and laboratories and for the assignment of these facilities and the scheduling of classes. (3-4).

3. Government departments responsible for the design and construction of school buildings should maintain a staff of architects and engineers specifically trained in this area, and all major construction programmes should be under the supervision of consulting architects with broad experience in school construction. (5-6).

4. The Ministry of Education should establish a research centre to fix standards for the construction of school facilities, to stimulate research related to school construction, particularly in the use of local materials, and to work in an advisory capacity with school authorities on problems concerning school construction. (4).

5. Each university and the department of education should designate an officer to ensure the most effective use of equipment and review requirements for new equipment. (9).

6. Technicians should be trained in the maintenance and repair of scientific equipment and retained by universities and by the departments of education for this purpose. In addition, universities should engage a trained instrument maker. (9).

7. The Ministry of Education in consultation with the Ministry of Industries should investigate the feasibility of manufacturing in Pakistan common and widely used items of scientific equipment. (10).

CHAPTER 26

ACCOMMODATION OF STAFF AND STUDENTS

1. We have already pointed out in an earlier section some of the difficulties involved in attracting to our college and university campuses able young teachers and scholars, especially those who have gone abroad for advanced study. One of the major deterrents has always been the inability to provide the prospective teachers with satisfactory housing in or near the institution. These people are understandably unwilling to move into a situation where they are required to pay a large percentage of their salary for accommodation which is often of poor quality. If we are to be able to attract them to service in our higher institutions and much of our hope for improvement depends upon our ability to attract them—we must provide them with reasonable living quarters at a rent they can afford.

2. To do this we recommend that Government should establish a corporation through which the capital required to build staff quarters can be loaned to colleges and universities. These loans should be for a long-term, preferably 30 to 40 years and should carry the minimum rate of interest. By standardizing the type of housing that will be provided so that it will be simple, functional and economical we anticipate that it will be possible to repay the loans through a rental that would approximate to 15% of the teacher's salary. We know that in some of our large urban areas many teachers would be willing to pay as much as 20% of their salary for good housing. We believe that the most pressing needs in staff housing can be met if the suggested corporation had available to loan 50 lakhs per year for a period of ten years. We would also recommend that Government assign land on which to build staff quarters for those institutions whose existing land holdings are not sufficient for this purpose.

3. We have recommended that the loans be made to institutions rather than to individuals for several reasons. First of all we are attempting to solve an educational problem rather than the individual housing problem of individuals. In this context it is important that whatever housing is built in this manner should be continuously available to the institution for the housing of its staff. If a teacher leaves his post at a college or university the house vacated by him should be available for his replacement. Secondly, the accommodation provided under this plan would be built on the institution's campus wherever possible, and we would not favour the practice of allowing individuals to have privately owned houses on a college or university campus. As a further precaution the allocation of land and the construction loans made under this proposal should be contingent upon their being used for the erection of staff quarters and that where they are not so used they should revert to government.

4. The Commission has also considered the possibility of providing hostels, cafeterias, and other revenue-producing facilities through a similar system of loans but we have come to the conclusion that the rental that would be necessary to ensure repayment of such loans would be too great a charge upon students. It should be possible, however, to combine the concept of loans with direct grants in the case of government institutions and with private capital in the case of private institutions. Specifically we suggest that in providing money for hostels, cafeterias, and the like half of the required sum may be provided in the form of long-term, low interest loans similar to those suggested for staff housing. In

the case of Government institutions the remaining half would be a direct grant. Where private institutions are concerned the amount loaned by the Government would match the amount raised from private sources by the management. The effectiveness of this arrangement would be enhanced considerably if several additional steps were taken. One of these would be to plan hostels that are much more functional and austere than our present housing facilities and thereby reduce the cost of construction. Secondly, the administrative costs of operating hostels should be reduced by giving students greater responsibility in providing for their own needs both as individuals and as a community. By reducing these administrative costs it should be possible to repay the borrowed portion of the construction costs with only moderate charges levied for accommodation in the rooms of the hostel.

ACCOMMODATION OF STAFF AND STUDENTS**SUMMARY OF RECOMMENDATIONS**

1. Suitable living accommodation at reasonable rents should be provided for our college and university teachers if we are to attract and retain qualified personnel. There is also a great need for adequate housing for boarders at our colleges, universities and residential schools. (1).
2. Government should establish a corporation through which the capital required for the construction of staff quarters can be loaned to colleges and universities on a long-term basis at minimum interest rates. (2).
3. Government should also consider a programme of providing loans to cover half of the cost of construction of student hostels, cafeterias and similar facilities. The remainder of the cost would be met through Government grants and private philanthropy in the case of non-Government institutions. (4).
4. To facilitate the construction of staff-quarters, hostels and other facilities, steps should be taken to reduce the cost of such construction through the standardization of functional and economic buildings. (4).

CHAPTER 27

FINANCING EDUCATIONAL DEVELOPMENT**I. Motivation :**

1. In approaching the problem of financing our educational programme we have been greatly encouraged by some of the recent trends in economic thinking as it relates to education. Until recently it was customary for the economist to view education as an expensive social service rather than as a means of creating wealth. This was, no doubt, due, at least in part, to the fact that education does not lend itself readily to the neat input-output analyses that are customary in the spheres of industry and commerce. A recognition of the tremendous economic progress resulting from the application of science and technology to production, both in agriculture and in industry, has made it clear that scientists, engineers, and highly trained technicians very largely determine the economic level of a society. These people cannot exist unless there is a well developed educational system to produce them. Viewed in this way, it becomes reasonable to look upon the expenditure of money on education in much the same way as we look upon capital investment in industry, namely as an essential pre-requisite for increasing the wealth of a nation.

2. The relationship between education and production is, of course, most direct in the scientific, technical, and agricultural fields, but the point we have made is also valid for education in general. In many advanced Western countries it has been shown that the general educational level has contributed to industrial development by providing large numbers of people who adapt to quickly change and who respond readily to training. These countries accept the fact that the discoveries of the scientist and the processes and techniques worked out by engineers and agricultural specialists must be widely disseminated and translated into practical operation by large numbers of operatives if they are to have any effect upon production. This translation of ideas into action can take place only when the general population is educated to a point where they can receive this information and understand it. Hence primary education and adult education are directly related to economic productivity in that they produce people capable of "consuming" the ideas of the researcher. Moreover, it has been felt that a generally educated labour force possesses a greater sense of personal responsibility and an attitude toward the importance of industrial development that results in greater efficiency and encourages industrial expansion. These views have been accepted not only by a number of leading economists in industrially advanced countries but by the business community and by a large segment of the total population as well, with the result that there is a willingness to support education at an increasingly higher level.

3. Education cannot be had cheaply, and good programmes, particularly in science, engineering, agriculture, and technology are expensive. We recognize that neither the Government nor the people will give the money that is required to establish a sound educational system unless there are strong arguments why they should undergo the sacrifices that are entailed. Our main hope for securing adequate finance for the nation's educational enterprises is that Government, the business community, and the people in general recognize and accept the close relationship—in fact the indispensable relationship—that exists between education and economic productivity.

4. The Commission itself is firmly convinced of this relationship and has, therefore, emphasised the importance of universal primary education, a broad expansion of technical and agricultural education, and a widespread programme of adult education. We have also kept in mind the need for improving the quality of education at every stage so that a proper foundation can be laid for advanced study in science, engineering, agriculture, and those other areas which are most closely allied to national economic development. Considerable stress has been laid on the inculcation of values and the creation of attitudes and habits that are essential for sustained work and efficiency. However, we are perfectly conscious of the fact that the success of the educational effort will depend ultimately upon the quality of our teachers and the adequacy of our facilities. These in turn, are inseparably linked with the willingness of Government, industry, and society itself to make the sacrifices and to pay the price. We can only hope that each of these groups will come to understand and accept the fact that education is a means of creating wealth, not only in the intangible sense of a fuller and more satisfying life for the individual, but also in the very practical sense of contributing directly and positively to economic growth. This understanding has already come to those highly industrialized nations where the effects of education upon the economy have been most dramatic. There, the new view of education as a vital factor in the economic growth of a country has been translated into a willingness to invest an ever-increasing proportion of the total resources in teaching and research, with complete confidence that the dividends will be substantial, and that they will be quickly forthcoming.

II. Suggestions for Raising the Necessary Financial Support for Education :

5. We are not a fiscal Commission, but we realize that it would be unrealistic to draw up extensive plans for the improvement and expansion of our educational system without also giving some thought to the ways in which these reforms might be financed. It is in this spirit that we wish to make the following observations.

6. *The Present Effort to Support Education.*—First, we must recognize that Government has never provided adequate financial support for education either in absolute terms or in comparison with the effort being made in other countries. It is frequently argued that the level of support for education in Pakistan is related to the general economic position of the country and that if our effort is judged in this light it is as much as can be managed. It is stated that because we are poor we cannot afford an extensive educational programme. There is, of course, some truth in this. We cannot expect at one jump to establish an educational system that will compare in scope with educational programmes in countries whose resources are several times our own. The Commission has no wish to make any such idealistic recommendation. But to argue that we are too poor to support education is to argue that we must always be poor. This goes against the whole concept of economic planning. The plain fact of the matter is that because we are poor we must make the extra sacrifice to promote an educational system that offers us the hope of being less poor in the future.

7. When we weigh our efforts in terms of our resources and compare them with what is being done in other countries, we find that we are spending a smaller percentage of our national income and a smaller percentage of our total revenues on education than many countries whose

resources are more or less equal to our own. Leaving out the industrialized nations of North America and Europe and comparing ourselves with countries like our own, which are trying to achieve a reasonable measure of economic stability and well-being, our financial effort shows up poorly. We cannot evade the fact that the improvements suggested in this report can be achieved only if a greater percentage of both our national income and our public expenditures are allocated to education.

8. Clearly, the rehabilitation of the educational system and its much needed expansion in various directions, particularly in areas related to economic development, will require large sums of money. This money must come from new taxation, from fees, from philanthropy, and from many other sources ; and we have not attempted to set out in detail the manner in which this burden will be assigned among the various sectors. We feel that when the precise relationship that will exist between local administrative units, the provinces and the Central Government has been established in the new constitution and the general principles which the Commission has recommended to guide the future direction of our educational effort have been accepted by Government, it should be the responsibility of the Planning Commission to determine the ways in which the financial burden should be assigned. We have had neither the time nor the resources to outline a detailed financial programme, nor have we considered this to be one of our functions. There is, however, one area in which we are in a position to make some specific recommendations, and that is the role of the Central Government in financing educational development.

9. There are a number of areas of national importance, some of which are directly related to economic development and as such become matters of special concern to the national government. At the same time the total cost of educational rehabilitation will be so large as to make its achievement impossible without significant support from the Centre. At the present time the Central Government allocates only 3% of its revenue to education, and the major portion of this is used to support schools in the federal area. Less than 1% of our Central revenue is allocated to education on a national scale. Yet there are, as we have said, certain fields of education which are the particular concern of the national government, namely adult education, technical and vocational education, science teaching in secondary schools, residential schools, the equalisation of educational opportunities through scholarships, and the entire field of higher education. It may be argued that education is fundamentally a provincial matter and should not concern the Central Government. However, it should be pointed out that even in those countries which zealously guard local control of primary and secondary education, even to the point of resisting the financial help of the national government, significant grants are made and accepted in the special fields we have mentioned above. We are convinced that the Central Government must take the lead in the expansion of these fields and must also bear a significant share of the cost. This cannot be done within the percentage of revenue now allotted to education and we are recommending here that 7% of the revenue of the Central Government should be earmarked for education. In Brazil, where a new constitution was adopted in 1946 (only a year before the creation of Pakistan) provision was made for a minimum of 20% of Provincial revenue and 10% of Central revenue to be spent on education. The 7%, we are suggesting here, corresponds to the share education has been receiving from development funds and in our view it is a minimum figure and entirely reasonable.

10. *The Need for Sacrifice by the People.*—Secondly, there has been very little financial support from the general public for education, and the public clamour for more schools has never been matched by a willingness to contribute to their cost. The practice has rather been to look to Government for the provision of free primary schools and for secondary education at a nominal fee. What the public must realize is that the concept of 'free' education is, in fact, a delusion. Although children may attend school without paying fees, teachers must be paid, supplies and equipment purchased, and school buildings constructed and maintained. Even when Government has allocated to education the finances that we have recommended, more funds will be needed, and they can only come from new taxes, private philanthropy, and fees. The provision of this additional money will call for a much greater financial sacrifice on the part of all of the people. At the primary level, where we have suggested that school buildings be provided by the local communities and that the recurring costs of this stage of education be borne half by the local community and half by the Provincial Government, the sacrifice will take the form of new taxes. At the secondary school stage, where we have recommended that 60% of the cost be borne by fees and 20% each by the contributions of management and Government, the necessary sacrifice on the part of parents will be much increased. In higher education it is expected that our recommendations will also entail higher fees and a corresponding sacrifice on the part of the people.

11. We firmly believe that these are sacrifices that the people should be willing to make. It is they who are the ultimate beneficiaries of education through the increased opportunities it provides for their children, the direct economic benefits it produces in the form of a higher standard of living for them and a richer community life. Education is an integral and indispensable component of permanent economic improvement and greater financial sacrifice on the part of everyone is the only means through which our educational requirements can be met.

12. *The Contribution of Industry.*—The industrial sector has also failed to support education, even technical education from which it derived direct and immediate benefits. Industry has continuously received artisans, skilled workers, technicians, supervisors and engineers which it has not had to train itself and it will benefit even more from the programmes of technical education proposed in our report. For this reason we believe that industry must bear a much larger share of the cost of education, particularly in the technical and vocational fields. As we have proposed in the chapter dealing with this phase of education, the increased financial burden on industry will take several forms. Larger industries will be expected to operate their own in-service and apprentice training programmes and even to establish monotechnics in such fields as textiles and ceramics. In addition we have proposed that there should be a direct tax upon industry for the support of technical education. This tax should be clearly earmarked for technical education and the funds turned over to the Ministry of Education for this purpose. A tax of this type is already employed in France, Spain, Yugoslavia, and other countries. The funds expended by industry for all of these purposes should be charged as production costs by the industries concerned.

13. *The cost of Education as a Charge against Major Development Projects.*—Pakistan has already spent large sums of money on development projects and we are planning to make even greater expenditure in the future. The budgets for these projects provide for the cost of raw

materials, labour and equipment, and also for foreign consultants and technicians. Yet no provision is made for the education and the training of those who will be required to maintain and operate the project once it has been completed or to staff a similar project elsewhere. The lack of trained manpower to create and support an industrialized economy has been a constant source of discouragement in our development effort, and it is high time we realized that to have skilled workers we must train them and that to train them we must have educational programmes that cost money. We do not build factories in the hope that once they are completed we will be able somehow to find the machinery necessary to operate them. Indeed the machinery is planned with the building. It is difficult to understand why we do not also plan for the personnel required to operate and maintain such projects.

14. The Commission is convinced that the education and training of those required to staff our major development projects is a reasonable, essential, and legitimate charge against the funds available for development purposes. For this reason we recommended that a suitable percentage, say 5% to 7% of the cost of major development projects, particularly those for power, irrigation, transportation, communications, and large industrial undertakings, should be allocated for education in science, engineering, agriculture, and technical education. All of these development schemes include standard classifications of cost, such as labour, equipment, and material. We are arguing here that they should also have a classification for education and training and that the amount should approximate to 5% to 7% of the total cost of the project. This amount should be transferred to the Ministry of Education to be used for the support of scientific, technical, and engineering education at the school and university level. Normally, when money is provided in a scheme, it is spent by the appropriate authority in the prescribed manner and counted as a cost of production. Obviously the director of these projects cannot run an engineering college or a highly complex research institute and we recommend that he should transfer the funds to the Ministry of Education as the appropriate authority to establish and maintain technical institutes and to promote research. Since this amount would be part of the construction cost it would be passed on to the consumer in the form of rates of purchase price. Similar practices are common in other countries. In the United Kingdom, for example, the Coal Board, the Gas Council and the Central Electric Authority assign a fixed percentage of their funds for educational purposes. Although this may initially result in higher rates and prices, the increase should be quickly offset by lower production costs realized through the employment of technically trained and highly skilled workers. In this way scientific, technical, and vocational education will receive the money it needs, the public, as the ultimate beneficiary, will absorb the initial cost, and the entire nation will benefit.

15. *Grants from Foreign Agencies.*—In the past few years Pakistan has received considerable assistance from foreign governments and agencies. Part of this has been in the form of the emergency provision of foodstuffs, but large amounts have also been granted to assist in economic development. We realize that foreign aid comes primarily at the request of Government but we should like a reasonable proportion of it to be assigned for the education and training required to support economic development at various levels. The education sector has, of course, received some aid and for this we are grateful, but the contribution has been inadequate to meet the needs created by development projects.

16. In other Asian countries where foreign aid is a major factor in the economic development programmes, the general pattern has been to provide simultaneous large-scale educational projects to support economic development. In neighbouring countries, foreign aid projects have already established engineering and agricultural universities, departments of sciences in universities, polytechnics, and science education in schools. Here might be noted the recent agreements signed by Canada with a number of countries for the support of programmes of technical education. We are convinced that projects of this magnitude must be included in our foreign assistance programmes if this aid is to have the maximum effect upon our economy.

17. *Government Loans for Educational Facilities.*—It may be possible to provide such facilities as teachers' housing, hostels and cafeterias out of loans. The basic problem in the past has been lack of capital to finance construction. We have already suggested some solutions to this problem. In the case of teachers' housing we have recommended a system of long-term, low-interest loans. If the loans are for a long enough term, and carry the minimum interest rate, and if the houses are standardized for economical construction, we believe that the loans can be repaid from a rental charge that is within the teachers' means. As regards hostels and cafeterias, we fear that the rental required to repay the loans would entail too great a charge upon the students. In such cases it may be possible to combine the concept of loan with direct grants from Government or private philanthropy. Government hostels and cafeterias might be built on a matching basis with 50% by loan. In the case of privately managed institutions these facilities might be constructed by combining loans with funds raised by the management on a matching basis.

18. *Financial Planning in Education.*—From the points raised in the preceding paragraphs it seems obvious that during the next ten to twenty years there will be a continuing need to raise additional revenue for education from taxation, philanthropy, fees, Government loans, development funds, and other sources. It is important that the type of fiscal planning that is needed be done by people who are familiar with and sympathetic to the requirements of education and at the same time knowledgeable in the fields of revenue, taxation, and development economics. To provide this kind of planning we believe that the Ministry of Education should have a section, headed by a senior officer with a staff trained in the appropriate fields of economics and finance. It would be expected that this section be familiar with the financial requirements of education at the various stages as well as with the economic situation in Pakistan, the fiscal policies of Government, and the practices and trends in financing education in other countries. In this way we may anticipate that proposals for financing education and the generation of new funds will be firmly rooted in economic reality.

19. In the Chapter on Primary Education we recommended other measures to be taken as part of the national effort to secure the financial support that will be required for universal primary education. There we suggested the creation of a small committee in each province at the highest level of Government and including members particularly knowledgeable in the field of taxation and revenue to deal primarily with the problem of generating funds. To review and co-ordinate the work of these Provincial Committees we have recommended a Central Committee including the Governors of the Provinces and the Minister of Education in its mem-

bership. We repeat this recommendation because of our conviction that the money necessary to support universal primary education will be forthcoming only if the problems of raising it receive continuous attention at the highest levels of government.

20. *Conclusion.*—The Commission has kept these observations in mind throughout, and they form the basis for the specific recommendations for financing education that are outlined in other chapters of this report. We would once again repeat that good education cannot be had cheaply. The Commission fervently hopes that our economic resources will develop rapidly so that government can constantly raise the level at which education can be offered as a free service without direct cost to the parent. In the meantime, however, those who benefit from education must be prepared to make financial sacrifices. We have tried to be both progressive and realistic in our recommendations, stating what is needed and the price that must be paid to have it. The education that the nation gets depends ultimately upon the price it is willing to pay.

FINANCING EDUCATIONAL DEVELOPMENT

SUMMARY OF RECOMMENDATIONS

1. There must be a general recognition on the part of Government, the business community, and the general public that education is an investment directly related to economic progress ; that good education cannot be had cheaply ; and that an educational programme designed to make a substantial contribution to economic improvement will require sacrifices on the part of everyone. (1—4).
2. The Government should devote a larger share of its revenue to education. The Central Government should recognize its direct obligation to specific areas of education such as technical and vocational education, scholarships and fellowships, residential schools, and higher education. To meet its obligations for the development of a system of national education at least 7% of Central revenues should be allocated to education. (5—9).
3. The people should share with the Government the cost of universal primary education by meeting 50% of the cost through additional taxes levied specifically for this purpose. At the higher levels they should insist upon educational programmes of a high standard and be willing to pay for such programmes. (10-11).
4. To plan for the generation of the funds required for universal primary education, a small high level committee should be created in each province which will be concerned primarily with this problem. A similar central committee, including the Provincial Governors and the Minister of Education, should be established to review and coordinate the work of the Provincial committees. (19).
5. The business and industrial community should contribute a significant share of the expense on technical and vocational education. There should be a direct tax upon industry for the support of this type of education and, in addition, larger industries should operate in-service and apprentice training courses of their own. All of these costs, however, should be chargeable as costs of production. (12).
- 6. Education and training should be one of the standard categories in detailing the costs of major development projects, particularly those in power, irrigation, transportation, communications, and large industrial undertakings. This educational cost should represent 5% to 7% of the total cost of such projects, and these funds should be transferred to the Ministry of Education for the development of appropriate educational programmes. (13-14).
7. The Government should assign a more reasonable share of funds received through foreign assistance to the education and training required to support the development programme. (15-16).
8. Since it will be necessary for the next 10 to 20 years to raise, through taxation, fees, philanthropy, and other sources, additional funds for education, the Ministry of Education should establish a section to deal with these matters headed by a person with knowledge and experience in the field of taxation, revenue, and finance. (18).

MINISTRY OF EDUCATION

RESOLUTION

Karachi, the 30th December, 1958

SUBJECT :—*Commission on National Education—Establishment of*

No. F. 16-9/58-E. III.—WHEREAS the existing educational system of Pakistan is not adequate to meet the needs and requirements of the nation, it has become necessary to set up a competent body to review, in consonance with the aspirations of the people and the socio-economic structure of the country, the educational system and to recommend appropriate measure for its reorientation and recognition for the purpose of ensuring an integrated and balanced development of education in various stages. The President of Pakistan, therefore, is pleased to appoint a Commission on National Education with the personnel, directives and terms of reference as set forth below :

2. *Personnel.*—The composition of the Commission will be as follows :

1. Mr. S. M. Sharif, Education Secretary, Government of West Pakistan, Chairman.
2. Dr. Raziuddin Siddiqui, Member, Atomic Energy Commission.
3. Col. M. K. Afridi, Vice-Chancellor, Peshawar University.
4. Mr. B. A. Hashmi, Vice-Chancellor, Karachi University.
5. Dr. Mumtazuddin Ahmed, Vice-Chancellor, University of Rajshahi.
6. Mr. A. F. M. Abdul Haq, President, Secondary Board of Education, Dacca.
7. Professor Atwar Husain, Dacca University.
8. Dr. A. Rashid, Principal, Engineering College, Dacca.
9. Dr. R. M. Ewing, Forman Christian College, Lahore.
10. Col. Mohammad Khan, Director of Army Education (Representative of the Defence Services).
11. Brig. S. Hamid Shah, Director of Organisation, G. H. Q.

3. *Directives.*—The primary task of the Commission will be to suggest reorientation and reorganisation of the educational system :

- (i) to develop among the people a sense of public duty, patriotism and national solidarity and to inculcate among them the habits of industry, integrity and devotion to service ;
- (ii) to provide facilities for the development of talent and to produce men of character and ability required for the development of the country in different fields ;
- (iii) to introduce modern methods of selection for determining intelligence and aptitudes so as to obtain the diversion of students at appropriate levels of technical, agricultural and vocational institutions in accordance with the age, ability and aptitude of the children.

The Commission shall examine the role of Education in the community and suggest measures which may enable the Universities, Colleges and Schools to fulfil this role effectively.

The Commission shall consider whether educational institutions in Pakistan are adequately equipped with men and materials to produce (a) the scientific and technical personnel required for the development of the country, and (b) the right type of personnel required for the Civil and Defence Services as well as for the professions and the public life and suggest measures for overcoming these deficiencies.

The Commission shall examine the standards of teaching and in educational institutions and suggest necessary measures to raise them to the highest possible levels.

The Commission shall examine the financial needs of educational institutions and suggest appropriate means for providing for these needs, consistent with the resources of the country. In examining the problems of finance the Commission shall give due regard to the need for using available resources to the best advantage and avoiding wastage and duplication.

The Commission will be free to draw up its programme of work and procedure and to constitute such Committees as it may consider essentially necessary for the expert examination of the different fields of education and to appoint on them persons possessing special knowledge and experience. The Commission will invite suggestions from educationists and members of the public and record evidence, as it considers necessary.

4. *Terms of Reference.*—The terms of reference of the Commission will be to consider and make recommendations in regard to :

- (i) the determination of different stages of education and their duration ;

University Education

- (ii) the qualifications for entrance to the University Courses of Study and the position of the existing Intermediate Classes ;
- (iii) the duration of the University Degrees : Pass, Honours and Post-Graduate ;
- (iv) the Advanced Studies and Research ;
- (v) the Scientific and Technological education ;
- (vi) the attainment of the highest standard of teaching and and research in the Universities and Colleges and the need for coordination of fields of specialization in different Universities ;
- (vii) the changes considered necessary and desirable in the constitution, administration, control and jurisdiction of Universities ;
- (viii) the advancement of Islamic Studies and oriental learning ;
- (ix) the qualifications, terms and conditions of service and the privileges and responsibilities of teachers of Universities and Colleges ;
- (x) the discipline of students, social and cultural activities and the development of Tutorial system ;
- (xi) the Finances of Universities and Colleges ;
- (xii) the improvement in the system of examinations ;

Professional Education

- (xiii) the qualifications for entrance to various professional courses ;
- (xiv) the duration of courses for various degrees and diplomas ;
- (xv) the organisation of teaching and research in professional institutions ;

Secondary Education

- (xvi) the scope, content and organisation of Secondary Education ;
- (xvii) the diversification of courses with due regard to the needs of the community : technical, agricultural and vocational education ;
- (xviii) the methods of grading and examination ;
- (xix) the administration and supervision ;
- (xx) the qualifications, terms and conditions of service and privileges and duties of teachers ;
- (xxi) the training of teachers including in-service training ;
- (xxii) the prescription, production and supply of text-books ;

Primary Education

- (xxiii) the scope, content and organisation of Primary Education ;
- (xxiv) the financing of universal Primary Education ;
- (xxv) the control, administration and supervision ;
- (xxvi) the qualifications, terms and conditions of service and privileges and responsibilities of teachers ;
- (xxvii) the training of teachers including in-service training ;
- (xxviii) the prescription, production and supply of text-books ;

Adult Education

- (xxix) the measures necessary to reduce illiteracy among the adults ;

Physical Education

- (xxx) the provision of physical training, games and sports ;

Military Training

- (xxxi) the establishment of National Cadet Corps in educational institutions ;

Religious Education

- (xxxii) the examination of Maktabas, Madrass and Darul-Ulooms and other private schools of various religious denominations.
- (xxxii-a) examination of the question of adopting Roman Script.
- (xxxiii) Other matters that may be germane and essential to a proper enquiry into educational problems.

M. B. AHMAD,
Secretary.

QUESTIONNAIRE ISSUED BY THE COMMISSION

THE ROLE OF EDUCATION IN THE COMMUNITY

1. Are our educational institutions functioning effectively in relation to the community in which they are situated ?
2. Do their curricula reflect the interests and needs of that community, *e.g.*, farming, small industry, environmental determinants such as deserts and rivers ?
3. Are their pupils and students encouraged to participate in the life of the community and to seek opportunities to serve it ?
- 4. Do they share their facilities with members of the community who are not regularly enrolled in them, *e.g.*, their libraries, the service of members of the staff for lectures, and community projects.

HIGHER EDUCATION**General :**

5. What should be the objectives of university education ? To what extent are these objectives being achieved in Pakistan ?
6. Has university and college education played its role in developing moral and civic and national consciousness and responsibility among the students ? What factors, if any, have operated against realisation of these objectives ?

Qualifications for Entrance to University Courses :

7. Assuming that Intermediate classes belong to the pre-university stage,—
 - (i) What should be the total duration of pre-university education.
 - (ii) What should be the minimum age of admission to the university ?
8. What should be the criteria for selecting candidates for admission to the various non-professional university courses ?

Duration of Degree Courses :

9. What should be the duration, in terms of academic years, of
 - (i) the Bachelor's degree course, and (ii) the Master's degree course in non-professional faculties ?
 - (a) Should there be only one Degree course, Pass or Honours, or should there be two distinct courses ?
 - (b) If there are two distinct courses, Pass and Honours, should they have the same or different duration.
 - (c) How many subjects of study should be included in the syllabi for the Bachelor's degree course, Pass and Honours, and in each of them how many papers should there be in the examination ?

10. Would you like instruction in Pass and Honours courses to be given (i) by the universities, (ii) by the affiliated colleges, or (iii) by both ?

Standards of Teaching, Advanced Studies and Research :

11. What are the main causes for the deterioration in the standards of teaching, studies, and attainments at the colleges and universities ? What remedies, including improvements in syllabi and methods of instruction, would you suggest ?
12. Is your university or college adequately staffed and properly equipped for the teaching of science subjects ? If not, exactly what measures would you suggest for improvement .
13. What subjects in Science and Arts faculties are basic in the sense that facilities for their instruction should be available in every university of Pakistan ?
14. In view of our limited resources as regards finance, personnel, and scientific equipment, would it be advisable to allocate specialised fields and research activities among the various universities in the country ? Please state the branches of study in which your university offers special facilities.
15. Do you think that the existing colleges are inadequately staffed and equipped ? If so, how should they be improved .
16. (i) Do you think that the courses for post-graduate degrees should be provided only at the universities ?
(ii) Should a few selected colleges, particularly in the mofussil, also be allowed to undertake post-graduate teaching ? If so, what conditions should be prescribed to ensure that their work is up to the university standard ?
17. What steps are necessary for introducing or improving the 'tutorial system' in the universities and colleges ? What other suggestions have you for providing individual attention to the student and closer relations between him and his teacher ?
18. What are the factors that militate against the development of research and original work ? What measures would you suggest for the promotion of higher learning and research in the universities and colleges ?
19. What methods should be adopted to discover talent among the staff and students and to encourage its development ?

Scientific and Technological Education :

20. Are you satisfied with the facilities provided for the teaching of science subjects in universities and colleges . If not, what improvements would you suggest ?
21. What steps should be taken continuously to assess the country's requirements in scientific and technical personnel ?

22. What measures should be adopted to ensure that a sufficient number of scientists and technologists of the requisite calibre are produced to meet the country's needs ?
23. Do you think the present courses in the sciences satisfactory for preparing the students to work in applied and technological fields ? If not, what improvements would you suggest ?
24. In what way is it possible to encourage scientists in the universities and colleges to undertake research into the use of existing raw materials for the development of the natural resources of the country .
25. What steps should be taken to establish and maintain effective contact between the universities and other scientific and technological organizations ?

Changes in the Constitution and Administration of Universities :

26. What type of university will be best suited to the needs of the country (i) Unitary, (ii) Federative, or (iii) Affiliating ?
27. Are the existing universities in the country sufficient in numbers to meet all its requirements, or would you recommend the establishment of more universities ? If you are in favour of having more universities, of what type should they be, and where should they be located ?

Affiliation :

28. (i) Do you think that the conditions of affiliation prescribed by the various universities are such as to ensure the maintenance of reasonable standards of efficiency ?
- (ii) If so, how would you account for the marked deterioration in the standards of attainment in the universities and colleges ?
- (iii) What measures would you suggest to ensure that colleges maintain the high standards expected by the conditions of affiliation ?

Advancement of Islamic Studies :

29. (i) What in your view should be the scope and extent of Islamic Studies at the university level ?
- (ii) How in your opinion should Islamic Studies be organised in the universities ?
- (iii) How may the standard of instruction and research in Islamic Studies be raised so as to attract scholars of the highest reputation ?

Oriental Learning :

30. (i) Do you think that the existing arrangements for teaching and research in Oriental Studies at the university level are satisfactory ? If not, please suggest necessary improvements.

- (ii) What is the scope of research in Oriental Learning and how would you promote such research ?
- (iii) What methods do you suggest to ensure that graduates in Arabic and Persian are able to speak these languages fluently ?
- (iv) How can the methods of language study in Arabic and Persian be improved ?

Conditions of Service, Privileges and Duties of Teachers :

- 31. (i) What should be the different categories of teachers in (a) the universities and (b) the colleges ?
- (ii) What should be their qualifications, terms and conditions of service, privileges and duties ?
- (iii) Do you think that the scales of pay of teachers should be the same in (a) all universities and (b) all colleges ?
- 32. What should be the method of selection and the procedure for appointment of (i) university teachers and (ii) college teachers ?
- 33. (i) What steps do you suggest to ensure that the teacher will contribute to the character-building and personality of students and the inculcation of a spirit of patriotism in them ?
- (ii) How far should the continuance in service, increments, and promotion of teachers depend upon their sustained interest in study, teaching, and research ?
- (iii) What measures would you suggest for the recurrent evaluation and appraisal of the work and intellectual development of the teachers in colleges and universities ?

Discipline of Students :

- 34. What suggestions can you make for improving discipline among the students and inculcating in them a sense of duty, patriotism, and national solidarity ?
- 35. Are you satisfied with the existing level of the intellectual, social, and sports activities in the universities and colleges ? Have you any suggestions as to their improvement ?

The System of Examinations :

- 36. What changes would you suggest in the present system of examinations to ensure that they test a student's acquisition, assimilation, and integration of knowledge ?
- 37. What place should be assigned to class-work, periodical examinations and tutorial records for determining a student's merit at the final examination ?
- 38. Should these interim periodical examinations be undertaken by the university ?

39. At what stage, if any, should there be *viva voce* examination ?
40. Are you in favour of having (i) only internal examiners, or (ii) only external examiners, or (iii) both, for
 - (a) the Bachelor's degree examinations ;
 - (b) the Master's degree examinations.
41. If you are in favour of having external as well as internal examiners at one or both stages of education mentioned above, what functions would you assign to each category of examiners at each stage ?

Medium of Instruction :

42. (i) What should be the medium of instruction at the university stage in (i) professional subjects, (ii) the sciences and (iii) the humanities ? If you contemplate a change, how may this be effected without affecting the maintenance of proper standards ?
- (ii) What place should be assigned to English as a subject of study at the university stage ? What measures would you suggest to improve the student's standard of attainment ? What should be the relative importance given to the teaching of language and of literature in this subject ?
- (iii) Do you favour the retention of English scientific and technical terms, symbols, and formulæ, or should these be translated into the national language ? If you favour translation, what steps should be taken to produce a standardized terminology ?

PROFESSIONAL EDUCATION

Engineering :

43. (i) What should be the academic qualifications for admission into the engineering colleges ?
- (ii) Do you think that candidates should also have industrial training or field experience before admission to the college ?
- (iii) Should there be a pre-engineering course for students not possessing such experience ?
44. Do you consider the possession of a diploma or a certificate from a polytechnic or other such recognised institution to be a suitable alternative entrance qualification ? If so, would a person possessing such a diploma or certificate be entitled to any exemption ?
45. Should an admission test be conducted by the engineering college in addition to the public examination ? Should such a test include an aptitude test ?
46. What should be the duration of the course for a Bachelor's degree in engineering, covering both practical work and theoretical studies ?

70. Does the present programme of agricultural education impart to the the students sufficient competence in (i) the sciences allied to agriculture and (ii) field work ?
71. (i) What do you think of the existing pattern of administration of agricultural colleges ? What improvements would you suggest ?
(ii) Are you in favour of the establishment of a unitary university in agriculture ?
72. Do you think that agricultural education and agricultural research should be conducted in the same institution ?
73. (i) Is adequate emphasis being laid on research in agricultural colleges ? Have you any suggestions for improvement ?
(ii) Should post-graduate studies form an integral part of the programme of agricultural colleges ?
74. What should be the qualifications, the conditions of service, and the duties and obligations of the various grades of teachers in agricultural colleges ?
75. What type of evening or part-time courses should be organised in the agricultural colleges for (i) in-service training and (ii) advanced studies to keep personnel in touch with latest developments ?
76. Should agricultural colleges also provide diploma courses for supervisory jobs ? If so, what should be (i) the qualifications for admission, (ii) the contents, and (iii) the duration of such courses ?

Commerce, Business and Public Administration :

77. What should be the academic qualifications for admission to commerce, business, and public administration courses in colleges and universities :
(i) for the post-graduate course ? Should a requirement above Bachelor's pass be used ? Should an admission test be conducted in addition to the public examination ? Should an aptitude test be employed ?
(ii) for the Bachelor's course ? Would you advise an admission test or an aptitude test or both ?
78. What should be the duration of these courses ?
79. (i) Are the existing methods of teaching these courses satisfactory ? If not, how may they be improved ?
(ii) From your knowledge of graduates in these courses, do you regard their skills and competence adequate ? What are the main gaps, and how would you remedy these ?
80. To what extent should the humanities and the social sciences be included in the curriculum of these institutions (i) at the post-graduate level, and (ii) at the Bachelors level ?

81. What other arrangements or improvements in these courses would you suggest ?
82. Are the existing colleges and university departments of commerce, business, and public administration conducting adequate research ? Have you any suggestions for improvement ?
83. What should be the qualifications, conditions of service, duties and obligations for the teachers of these departments ?
84. (i) What type of evening or part-time courses should be organised for the in-service training of teachers of commercial subjects ?
(ii) What type or types of training should be developed in office techniques for secretarial staff working in public offices and business organisations ?

Law :

85. What should be the academic qualifications for admission to the law colleges ?
86. Do you suggest a preparatory curriculum pre-requisite to entering a law college ?
87. Should an admission test conducted by the law colleges be used in addition to the result of the previous public examination ? Should such a test include an aptitude test ?
88. What should be the duration of the law degree course ?
89. Do you think the present courses are comprehensive and adequate ? If not, what changes do you suggest ?
90. Do you consider the legal instruction and training imparted to barristers-at-law in the United Kingdom superior to the instruction and training imparted to law graduates in Pakistan ? If so, what changes do you propose in the system of legal education in Pakistan to bring it up to par with that of barristers-at-law in the United Kingdom ?
91. Are you in favour of instituting an academic degree in law on the pattern of B.A. (Honours) of three years duration ? Assuming that you are in favour of having an academic law degree, what system would you propose for imparting professional instruction and training to entitle persons to practise in law courts ?
92. If you are in favour of an academic degree in law, would you like it to be side by side with professional instruction ?
93. Do you think that the universities should attempt to give a practical bias to legal education by laying more emphasis on tutorial work, holding of law moots, and visits to courts ?
94. What measures would you suggest for the promotion of higher studies and research in law ?

95. Should the teaching staff consist of (i) exclusively whole-time teachers, or (ii) exclusively part-time teachers, or (iii) partly whole-time and partly part-time teachers ?
96. What should be the qualifications, the conditions of service, and the duties and obligations of the various grades of law teachers ?
97. Do you think that the libraries of law colleges are adequate and up-to-date ? If not, what improvements would you suggest ?

SECONDARY EDUCATION

98. (i) What should be the objectives of secondary education ?
(ii) How far does the present system of education fulfil these objectives ? If not, how would you improve it ?
99. (i) How would you re-orientate the system to inculcate in teachers and students :
(a) a sense of responsibility, a civic sense, and love of country ; and
(b) moral values, integrity, and habits of industry and serious thought ?

Please make specific suggestions.
- (ii) How can the schools influence the life and activities of the people so as to develop among them the qualities mentioned above ?
100. Do you think that the parents take sufficient interest in the welfare of schools ? If not, what measures would you suggest to increase it ?
101. (i) What should be the entire length of pre-university education and its various stages, primary and secondary ?
(ii) Should the secondary stage be further divided into stages and if so, what should be the duration of each stage ? In this context, please give your views regarding the intermediate classes.
102. What subjects should be taught in the secondary schools and at what stage should different subjects be introduced or terminated ?
103. What subjects should be compulsory at the secondary stages ? Should they include general science and social studies ? If so, what should be the content of these two subjects ?
104. What should be the elective subjects and how would you group them ?
105. Do you consider the present curriculum (i) adequate, (ii) too heavy, (iii) too light ? Please suggest specific improvements.

106. What should be the medium of instruction at the secondary stage? Are the students well-versed in the language used as the medium? If not, how can they be made more proficient in it?
107. What should be the methods of teaching in various subjects? Are these being followed in practice? If not, what are the difficulties and how can they be overcome?
108. (i) What should be the position of English in the school curriculum? At what stage should the study of (a) English and (b) the second national language begin?
(ii) What should be the aim in teaching English?
(iii) Do you think that this subject is being taught well and on sound lines? If not, how would you improve it?
109. Do you think that adequate attention is being paid to the correction of written work? If not, please suggest improvements.
110. (i) What is the importance of residential schools in the educational system?
(ii) What measures are required to ensure that talented children whose financial resources are inadequate may be admitted to such schools?
111. How can some of the desirable features of residential schools be incorporated in the ordinary schools?
112. What is the role of hostels in the educational system? Do you think that there is need for more hostels? If so, how should their establishment and maintenance be financed; and what is the responsibility of the teacher for their successful functioning?
113. What arrangements would you suggest to enable persons employed during the day-time to prepare for and take public examinations? Is it desirable and feasible to arrange for their instruction in the evenings under proper educational conditions? If so what should be duration of the course and how should it be organised?
114. What should be the size of a class (i) for instructional purposes, and (ii) for practical work in science and technical subjects?
115. What should be the optimum and what should be the maximum number of students in a school to ensure efficient administration?
116. (i) Are you satisfied with the existing number of working days in schools? If not, what improvements can you suggest?
(ii) What are the working hours in schools? Should they be increased or decreased?

117. How can the summer vacation be utilised (i) to make up the deficiencies of weak students, (ii) to help gifted children, (iii) to provide special courses and (iv) for other beneficial activities.
118. (i) What is the function of a library in the school programme? Is this function being performed efficiently?
 (ii) Are existing facilities for library services adequate? If not, how should they be improved?
 (iii) How can the teachers and students be encouraged to make more use of the library?
119. What should be the minimum qualifications for various categories of teachers, including those of drawing-masters, handi-craft instructors and language teachers?
120. (i) What should be the minimum pay scales for all categories of teachers,—government, local-body, or private?
 (ii) Assuming that the minimum pay scales are fixed, how would you ensure that the teachers are paid according to them.
121. What should be the privileges and obligations of teachers in secondary schools?
122. What should be the maximum hours of (i) teaching work, (ii) extra-curricular work and (iii) tutorial work, for teachers of the various subjects, grades, and qualifications?
123. (i) How should the tutorial work of the teacher be arranged? How many students should be assigned to the teachers of various grades? How much time should a teacher devote to the guidance and counselling of each student?
 (ii) Should the teacher keep records of the students in his tutorial group? If so, what record should be maintained and in what form? How should the parents be kept informed about the progress and behaviour of their children?
124. Should teachers be allowed to take up private tuition; if so, to what extent and on what conditions?
125. How should the teacher's work be evaluated; good work recognized, and indifferent work penalised?
126. (i) Are the existing facilities adequate for training teachers of (a) academic subjects, and (b) special and technical subjects? If not, how can these be expanded?
 (ii) Are the training programmes of teachers satisfactory? If not, how can they be improved?
127. What arrangements should be made for in-service training of teachers? How can such training be made effective?
128. What are the causes of the rapid deterioration in educational standards? How can this tendency be arrested and the standard raised again?

129. Do you consider that the existing regulations of recognition prescribe adequate standards for staffing, building and equipment in secondary schools? Are these rules observed in practice? If not, how can they be enforced?
130. (i) Are you satisfied with the existing system of examination? If not, what improvements would you suggest?
(ii) How would you ensure that the examinations test a person's ability and understanding, and discourage mere memory work?
131. (i) How many public examinations should be held during the secondary stage?
(ii) What place should be assigned to class-work, periodical examinations, and tutorial records in determining a student's merit at the final examination?
132. Do you think that the organisation of the inspectorate is suitable and adequate to promote (i) administrative efficiency, and (ii) technical competency? Suggest necessary improvements.
133. What should be the qualifications of the inspection staff and how should they be selected?
134. How far has inspection of secondary schools been effective? How should it be improved?
135. How should in-service training for inspection staff be organised?
136. Should the inspection staff be interchangeable with the teaching staff of training colleges and secondary schools?
137. Recognising that the resources of Government are limited and that the financial allocation by Government has to cover the entire field of general and technical education, to what extent should secondary education be financed by (i) Government, (ii) Local Bodies, and (iii) local communities?
138. Accepting the fact that the schools have to observe the rules of recognition concerning standards of staffing, building and equipment, how should they be expected to balance their budgets?
139. (i) Should Local Boards be authorised to impose special taxes or raise loans specifically to meet capital expenditure?
(ii) Should private managements be permitted to raise loans for capital expenditure?
(iii) Should the State advance loans to a private organisation at nominal rates to meet a part of the initial cost of establishing a school or of making substantial additions to its buildings?

140. Are the existing grants-in-aid to Local Bodies and private organisations reasonable? If not, what do you consider to be a reasonable basis for allocating such grants?
141. (i) How should commercialization in education be stopped?
(ii) What can be done to prevent the exploitation of teachers and students by school managements by such practices as enlarging the work load of teachers, increasing their hours of work or the size of their classes, paying them low salaries, and terminating their services for a part of the year?
142. What should be the spheres of responsibility severally of the universities, boards of secondary education, and departments of education in respect of secondary schools? How should their activities be co-ordinated?
143. (i) Should text books be prescribed for all subjects at this stage or only for some subjects and not for others? If so, which?
(ii) How should the use of 'notes' be stopped or discouraged?
144. Are the existing arrangements satisfactory for (i) prescribing, (ii) producing, and (iii) distributing text books? If not, please suggest improvements.
145. How would you prevent mal-practices among (i) Government officers, (ii) educational bodies and (iii) the book trade in the matter of the prescription, production, and distribution of text books?
146. Should work experience or social service be required during the secondary stage? If so, what should be its specific objective, and how should it be organised?
147. What place should be assigned to (i) organised social and cultural activities, (ii) sports and physical education, and (iii) hobbies? How much of the time-table each week should be assigned to these extra-curricular activities?
148. (i) What place should industrial arts (wood work, metal work, electricity, etc.) occupy in the course of studies? Do you think that every secondary school should teach at least one such subject?
(ii) Should all students learn the use of basic hand tools?
149. (i) Recognising that agriculture is the principal vocation in Pakistan, what place would you assign to it in the curriculum of (a) rural schools, (b) urban schools?
(ii) At what stage and in what form should the study of this subject be introduced? What should be the duration of the course?
(iii) Are you satisfied with the existing arrangements for the teaching of this subject? What improvement would you suggest?
(iv) How should practical training in this subject be organised?

VOCATIONAL EDUCATION

150. (i) What should be the minimum age for admission to institutions imparting vocational training and skills for different trades or occupations ?
(ii) What should be the minimum qualifications for admission to such courses of training ?
151. Should there be an aptitude test before admission ?
152. (i) What kind of courses would you suggest for such institution in your area ?
(ii) How would you organise the work of such courses, and how much general education, *i.e.* language, arithmetic, science, etc., should be included in a vocational course ?
153. What should be the qualifications, the conditions of service and the duties and obligations of the teachers of these institutions ?
154. How should teachers of each institution be trained ?
155. Do you consider the existing pattern of administration of such schools satisfactory ? If not, what are your suggestions ?
156. What type of evening or part-time courses should be organised in vocational institutions for (i) in-service training, (ii) learning new techniques, and (iii) passing on information about new developments ?
157. (i) What should be the scope and content of the courses in (i) commerce, (ii) home science, and (iii) nursing.
(ii) Are the existing arrangements for teaching these subjects adequate and satisfactory ? Along what lines should these courses be developed ?
158. Are you in favour of multilateral schools which offer a number of elective subjects including both academic and technical courses ? If so, how should each elective subject be grouped ?

PRIMARY EDUCATION

159. Assuming that primary education should be a stage complete by itself, what should be—
(i) its objectives ;
(ii) the age of admission to the primary school ; and
(iii) the duration of the course ?
160. What is the place of the primary school in the local community ? How would you promote effective contact between the two ?
161. (i) Is the existing curriculum suitable with due regard to the ability and aptitude of the students ? What improvement would you suggest ?

- (ii) Do the primary schools provide the necessary facilities for games and sports or recreational centres for the students and the community ? If not, what practical steps would you suggest to help them do so ?
 - (iii) Are they equipped with libraries and reading material of general interest ? How far does the community benefit from them ?
162. (i) What should be the minimum academic and professional qualification of a primary teacher ? Please suggest necessary improvements in the teachers training programme.
- (ii) Would you make periodical in-service training of teachers obligatory ?
- (iii) Are you satisfied with the quality of training in normal schools ? If not, please suggest improvements.
163. What do you think of the pay and status of the primary school teachers ? What steps would you suggest to make it worthwhile for a person to become a primary school teacher ?
164. (i) There being no question but that universal primary education is the goal, what practical steps would you suggest for meeting the cost of this great undertaking ?
- (ii) Do you think that the responsibility for providing :
 (a) building, (b) equipment and furniture, and (c) teaching staff should be placed upon the local community in which the school is situated ; and that for this purpose, Government should authorise the levy of necessary taxes ?
165. What should be the pattern of administration within the primary school envisaged above ?
166. In the light of your replies to the preceding question, how should the primary school be controlled and administered ?

WOMEN'S EDUCATION

167. Does the education of women as distinct from that of men need special consideration ? If so, please indicate in what respect and why ?
168. Please define any special responsibilities that women may have for national and cultural development.
169. What place would you assign to the teaching of Home Economics in schools and colleges ?
170. What are the deficiencies in the education and training of women in different fields and occupations and how are they to be remedied ?
171. Do you consider it (i) advisable and (ii) feasible to have all children in primary schools taught exclusively by women teachers ? What special facilities should be provided to make working conditions attractive and pleasant for women teachers in rural areas ?

172. What suggestions would you make for the improvement of girls' schools and women's colleges as distinct from those you would make for education in general ?

SPORTS AND GAMES

173. What emphasis should be given to organised sports in educational institutions ?
174. If it is true that in recent years there has been a decline in interest and participation in sports and games, what is your explanation ; how serious is the decline ; and what are the means you would suggest for reversing the trend ?
175. How should the sports programme be financed in an educational institution ?
176. Should gifted sportsmen be given financial and academic concessions ? If so, please indicate the extent and form of such concessions ?
177. Which sports and games would you consider the most worthy of encouragement in terms of the resources, ideals and character of our people ?
178. What indigenous games and folk dances deserve greater emphasis in this connection ?

PHYSICAL EDUCATION

179. At the several stages of education and in the various types of schools and colleges, what emphasis should be given to physical education as a required subject in the curriculum and as an extra-curricular activity of education ?
180. What do you consider essential in the way of physical education equipment and other facilities ?
181. Assuming that play-grounds are not available in large towns, what equipment should be provided for P.T. ?
182. What should be the qualifications of the teachers of physical education at different levels and their salaries and status ?
183. Is the number of trained personnel adequate ? If not, how should the deficiency be made up ?
184. Have you any suggestions for the improvement of work in the colleges of physical education ?

HEALTH SERVICES

185. What should be the minimum reasonable provision of health services in educational institutions of various types ? How are such services to be financed ?

SCRIPT

186. Do you favour adopting the roman script in Pakistan ?
187. Do you think that this step would—
- (i) reduce the time required for making the masses literate ;
 - (ii) reduce the load for school children in learning their second and third languages ;
 - (iii) tend to produce a national language and so unify the nation ;
 - (iv) facilitate the production of printed reading material ; and
 - (v) have any other far-reaching effects ?

MEDICAL EDUCATION

188. What should be the academic qualifications for admission into the medical colleges ?
189. Should an admission test be conducted by the medical college in addition to the public examination ? Should such a test include an aptitude test ?
190. What should be the duration of the Bachelor's degree course and how would you organize the pre-clinic and clinical sections ?
191. To what extent should humanities and social sciences be included in the medical curricula ?
192. Are the medical colleges producing enough graduates to meet the requirements of the country ? If not, have you any suggestions for increasing the output ?
193. Does the present programme of medical education impart to the students sufficient competence in (i) the latest laboratory techniques, (ii) preventive medicine and public health, (iii) operative surgery ? If not, please suggest ways and means of improvement.
194. Are the existing arrangements adequate for the post-graduate training of specialists ? If not, please make concrete proposals for improvement.
195. What do you think of the existing pattern of administration of medical colleges ? What improvements would you suggest ?
196. Are the medical colleges conducting adequate research ? Have you any suggestion for improvement ?
197. (i) What should be the qualifications, conditions of service, duties and privileges of the various grades of medical college teachers ?
- (ii) What specific suggestions can you make for attracting suitable persons to the teaching posts in pre-clinical departments ?

198. What should be the academic qualifications and training of various categories of technicians employed in the medical profession ?
199. Do you think that the technicians are adequate in numbers and proficient in work ? If not, what suggestions have you to make ?
200. Recognising the paucity of nurses what measures would you suggest to popularise the nursing profession in the country ? Please indicate concrete steps for improvement in (i) the courses of instruction and studies (ii) conditions of service of (a) female and (b) male nurses.

EDUCATION OF THE HANDICAPPED

201. What should be the object and the contents of education of the handicapped children ?
202. Are the educational facilities for the handicapped children adequate ? If not, what suggestions would you make to improve and extend these facilities ?
203. Recognizing that the resources of Government are limited to cover the entire field of general and technical education, to what extent should the education of the handicapped be financed by (i) Government, (ii) Local Bodies and (iii) local communities ?

ITINERARY OF THE COMMISSION

Monday, January 5, 1959		Inaugural meeting at the President's House, Karachi.
Tuesday to Saturday, January 6—10, 1959		Meetings at Karachi.
Wednesday to Saturday, January 28—February 7, 1959.		Meetings at Karachi.
Tuesday, February 24, 1959.	(Morning)	Meeting at Dacca.
	(Afternoon)	Interviews.
Wednesday, February 25, 1959...		Visit to educational institutions at Dacca.
Thursday, February 26, 1959.	(Morning)	Interviews.
	(Afternoon)	Visit to educational institutions at Dacca.
Friday to Monday, February 27 to March 7, 1959.		Interviews.
Tuesday, March 3, 1959		Interviews and visits to educational institutions at Chittagong.
	(Night) ...	Leave Chittagong for Dacca.
Wednesday, March 4, 1959.	(Morning)	Arrival Dacca from Chittagong.
	(Afternoon)	Interviews.
Thursday, March 5, 1959.	(Morning) ...	Visit to Rajshahi University (Chairman, Dr. M. Ahmad and Dr. R. M. Ewing).
	(Afternoon)	Interviews.
Thursday, March 12, 1959.	(Morning)	Arrival Peshawar.
Friday, March 13, 1959		Interviews.
Saturday, March 14, 1959.	(Morning) ...	Leave for Kohat by Road.
		Visit Inter-Services Selection Board, Kohat.
		Visit Signal Training Centre, Kohat.
	(Evening) ...	Return to Peshawar and Interviews.
Sunday, March 15, 1959		Leave for Abbottabad by road.
Monday, March 16, 1959.	(Morning) ...	Visit educational institutions at Abbottabad.
	(Evening) ...	Leave Abbottabad for Rawalpindi.
Tuesday and Wednesday, March 17 and 18, 1959.		Interviews at Rawalpindi.

Thursday, March 19, 1959 ... Visit educational and training centres at Rawalpindi.

Friday to Sunday, March 20 to 22, 1959 Interviews at Lahore.

Monday, March 23, 1959 ... PAKISTAN DAY. Free.

Tuesday, March 24, 1959 ... Interviews at Lahore.

Thursday, April 2, 1959. (Morning) ... Meeting at Karachi.

Friday and Saturday, April 3 and 4, 1959 Meetings and interviews at Karachi.

Sunday, April 5, 1959 ... Visit new site of the Sind University Campus and interviews at Hyderabad.

Monday to Thursday, April 6 to April 9, 1959. Meetings at Karachi.

Friday, April 10, 1959 ... EID HOLIDAY.

Saturday to Tuesday, April 11 to April 14, 1959. Meetings.

Sunday, April 19, 1959 ... Interviews.

Monday and Tuesday, April 20 and 21, 1959. Meetings at Karachi.

Wednesday, April 22, 1959 ... Interviews.

Friday, April 24, 1959 ... Interviews.

Saturday, April 25, 1959. (Afternoon) ... Meeting at Karachi.

Wednesday and Thursday, April 29 and 30, 1959. Meetings at Karachi.

Friday, May 8, 1959 ... Meeting and interviews at Karachi.

Saturday, May 9, 1959 ... Interviews.

Sunday, May 10, 1959 ... Meeting.

Friday, May 15, 1959. (Afternoon) ... Meeting and interviews.

Saturday to Monday, May 16 to 18, 1959 Meetings at Karachi.

Wednesday to Saturday, July 1 to July 12, 1959. Meetings at Karachi.

Thursday to Tuesday, August 13 to August 25, 1959. Meetings at Karachi.

Wednesday, August 26, 1959 ... Presentation of the Report to the President at the President's House, Karachi.