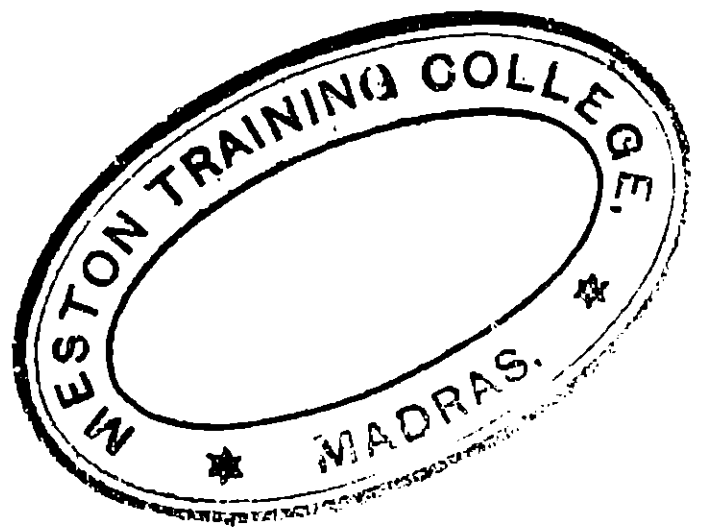


# EXAMINATIONS IN INDIA THEIR DEFECTS AND REMEDIES.

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## PREFACE

This study is an attempt to give a proper orientation to the whole question of examinations in India in the light of progressive thought and practice in modern education. In places, the study may look too idealistic in view of the actual educational conditions in India at the present time. But if we are convinced of the adequacy and fairness of the democratic process, we expect that the development of our education and examination system will take place somewhat along the lines suggested here.

From the practical point of view also, a few proposals have been made for the immediate improvement of our existing examinations. These proposals can be implemented presumably without making any radical changes in the present examination system.

This study does not outline a plan for the reorganization of the examination system in detail. For instance, it does not give the probable cost and the time needed for putting the proposals into effect, and the size of the personnel required for the purpose. It has, however, attempted to clarify the basic issues involved in reorganization, and to suggest possible ways and means of meeting them.

This book is addressed to all who have the power and the will to help change our educational system in the interests of the people. Organizations like the All India Board of Basic National Education (Hindustani Talimi Sangh) and the Central Advisory Board of Education, who have devoted themselves to furthering the cause of education, are especially approached to consider the proposals made herein.

If these organizations accept the proposals in general, administrative details regarding the time, cost, and personnel needed can be worked out without great difficulty. It is expected that their acceptance and approval will do much to speed introduction of the reforms in our examination system which are here put forward.

Sincere appreciation is extended to Professor R. L. Thorndike, Professor L. Zilliacus, Professor D. G. Tewksbury and Professor I. Lorge for their genuine interest in this study and for their constructive guidance and kind direction.

To Professor R. L. Thorndike, major advisor for this study, gratitude is expressed for his hearty support and encouragement to me in my work at all stages. Without his active interest and constant help this study could not have been completed during the limited time at my disposal.

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SALAMAT ULLAH.

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PART I

THE BACKGROUND



## INTRODUCTION

### *Need for study.*

These days there is a general awareness among the leaders both in the educational field and the public life of India that our present educational system is haphazard, lacks direction and fulfils very little in the way of preparing people for the exigencies of life.

Keeping these things in view, the Central Government of India has recently made an attempt to evolve a comprehensive scheme of education for the whole country. Among other things, it envisages a reorganization of elementary education on a universal, free and compulsory basis for all children between six and fourteen years of age, and a diversified secondary education on a selective basis.

There is a genuine apprehension that the real aims and objectives of education may still remain unfulfilled, if the examination system which has always been an integral part of our educational set-up is left unaltered. Examinations in the past have virtually dictated the curriculum, the methods of teaching and even the procedures of school organization and administration. This has resulted in an undue emphasis on the relatively more easily examinable bits of knowledge, which in themselves are of little use or value to actual living. Education has thus become a cramping rather than a liberating process.

Besides, even this limited evaluation of pupil achievement made by current examinations is far from being reliable, because the examinations are essay-type and as such their reliability is very doubtful—a fact which has been proved by various studies in different countries including India.

Further, our examinations have been used primarily as a screening device to prevent the so-called 'weaker' and 'duller' students from going ahead. The result is a huge wastage and stagnation. As the examinations are based on a rigid curriculum which is the same for all the pupils irrespective of their different interests, talents and abilities, the weeding out through examinations does grievous injustice and harm

not only to individuals but to society as a whole. For the progress of a democratic society demands that every individual must be so taken care of that he can give his best to the society.

The vernacular middle and high school examinations in India influence the curriculum still more adversely because of their external nature. They are externally controlled and administered on a province-wide basis by a central examining body. The success of the pupils depends entirely upon their results.

Thus the examinations in India have created an almost unchanging and inflexible curriculum, and stereotyped methods of teaching, with the result that education has become very unreal and superficial.

Therefore for any fruitful reorganization of the educational system in India our examinations do badly need reorientation with regard to their aims, contents, methods and techniques.

Hence the need for this study.

### *Scope of study.*

1. To understand the present condition of education in India, it will be proper, first of all, to make a short survey of education in colonial India under British rule with special reference to the aims and purposes, scope and contents, and methods and techniques of education. This will be followed by a description of the educational needs and aspirations of the people of free India, showing the need for a change in the whole outlook on education. The need for adequate methods of evaluation of educational outcome in conformity with this new outlook next requires discussion.

2. Then the operation of the present examination system in India will be described, together with its effect on education in its various aspects. In this analysis, the weaknesses and ill-effects of the current examinations will be discussed in some detail.

3. This will be followed by a summary of other techniques of evaluation besides essay examination that have been developed in India.

4. During the last thirty years or so, the state of education in India has been surveyed and reviewed by several

committees and commissions appointed by the Government and private organizations. Some of these bodies have also come out with recommendations for the improvement of examinations. The relevant recommendations of these bodies will be outlined and discussed to show how far they can go to better the situation and to what extent they have actually been implemented.

5. In making suggestions for improvement and reform in the examination system of India, it will be helpful to survey modern practices and trends in examinations in some more developed countries of the West. So a study of the pattern and techniques of examinations in America and England will be undertaken, showing how the changing needs of education have resulted in a reorientation of purposes, scope, techniques and administration of examinations in these countries.

6. On the basis of the above study, some proposals will be outlined for the reorganization of the examination system in India. In this connection, certain necessary recommendations will be made for the remoulding of the curriculum, which in itself represents the objectives of education. This will naturally lead to a restatement of aims of examinations and will help determine what kinds of examinations are needed and how they can best be used to meet the specific purposes of education.

7. In order to put these proposals into effect, certain administrative and organizational machinery will be needed.

8. It will take some time to implement long-range reforms. Therefore, some suggestions will be made for the immediate improvement of our existing examinations.

9. Finally, the limitations and difficulties of the plan will be identified and possible remedies suggested.



## CHAPTER I

# EDUCATION IN INDIA—ITS PAST AND FUTURE

### 1. EDUCATION UNDER BRITISH RULE

Education in colonial India had a very stunted growth for various reasons, the discussion of which is out of place in this study. It is an uncontroversial fact that the development of education in the past suffered from inadequacy of aims and purposes, scope and content, methods and techniques.

#### (a) *Aims and purposes.*

Macaulay's famous minutes of 1835 went a long way to lay the foundations of public education in India. The type of education he proposed was explicitly intended to create a class of people who would help the British to administer the vast country by acting themselves as liaison between the rulers and the ruled, through their services as clerks and secretaries in the Government offices. This is why the Government insisted so much on secondary and higher education—and that too of a purely literary nature—rather than on building up a system of universal elementary education which must have served subsequently as a sound basis for supporting the superstructure of higher education.

The educational policy of the Government did not change in substance and practice in the years that followed. Even when as a result of the pressure of public opinion they had to accept the responsibility for the education of the masses they tried to maintain the gulf between elementary and secondary education. As late as 1929, the Auxiliary Committee on Growth of Education (61: 3)\* say, "The system of primary and higher primary schools should be so designed

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\* The numbers in parenthesis denote references given in the bibliography attached at the end. The first number denotes the serial number of the book or article, and the second the page thereof.

as to produce a competent electorate; the system of secondary and higher education to produce competent and trustworthy representatives and officials." Thus the two ladders of education are so differentiated as to accentuate the already existing gap between the masses and the classes. Further, secondary and higher education are significantly identified as education for 'the directing class'.

*(b) Scope and content.*

The aims and purposes of education stated above, in themselves, have limited the opportunities of education to a very small section of people. We still do not have anything approaching universal free elementary education in operation, with the result that there is illiteracy of over 85 per cent.

Furthermore, whatever little facilities of education there were, have not been used to the best of advantage because of the inadequacy of the curriculum. The literary aspect of education has been overemphasized throughout all the stages of schooling to the detriment of a large section of students who fail to gain anything from such education. Though the policy of bifurcation between literary and vocational education was advocated as early as 1854 in the great Dispatch and reaffirmed by the Hunter Education Commission of 1882-83 and once again by the Sadler Commission in 1919, it was never put into effect. According to Hartog (162: 45) this failure was brought about by the matriculation policy of the Indian Universities and by the desire of Indian parents to send their boys to the university, mainly because a university degree had hitherto been regarded as a passport to the safe career of Government employment, and other professions.

The need for diversification of the curriculum at the secondary school level and beyond has been increasingly realized by the universities as well as the Government in recent years. Hampton (114) refers to a resolution of the conference of Indian universities which met at Delhi in 1934, urging the radical adjustment of the present system of education in such a way that a number of pupils should be diverted on the completion of their secondary education to occupations or to separate vocational institutions. Since then, the Central Government of India, as well as several

Provincial Governments, have drawn up schemes for the introduction of a School Leaving Certificate Examination with diversified and practical courses relatively free from university requirements. But still the condition has not changed much practically. Indeed, it is only a slight exaggeration to say that the Indian High School, with a few notable exceptions, is much the same as it was in 1904 and only little changed from what it was as far back as 1884.

Even the Central Advisory Board of Education in their recent report (18: 17) deplore the fact that "at present, almost all schools follow the beaten track as laid down by universities and examining bodies and there is little variety in the scope and scheme of studies."

## 2. THE NEEDED CHANGE IN THE CONCEPT OF EDUCATION IN INDIA

### (a) *Aims and purposes.*

The future development of national life in India is expected to take place along democratic lines. This necessitates a transformation of the existing system of education for the classes into an education for the people. We need a common school for all—a school that is based on the principle of productive and creative work and that derives its sanctions from a cooperative society founded on the principle that no one shall eat who does not work. The Basic National Education, as outlined in the Zakir Husain Committee Report (57), also visualizes a productive school for our nation.

Our future school, instead of being a composite of classrooms where passive memorisation of the traditional subject matter goes on, shall become a sort of laboratory or a workshop where learning takes place through experimentation, observation and investigation, where children and youth are educated by participating in the projects which are necessary for the betterment of community-life, and where individuals are so guided as to enable them to discharge their duties and obligations faithfully as well as to enjoy their rights and privileges judiciously in a cooperative society. In a word, our school shall aim at producing productive, cooperative and sensitive citizens.

Such a scheme of education would attempt to produce

young men and young women dedicated to the common weal. For it is the only reasonable way to make the individual lives happier and richer.

(b) *Content.*

This scheme demands an altogether different type of curriculum. It should no longer have its emphasis on the purely literary aspects of human knowledge, as it has all through the past years. The new curriculum should be devised in harmony with the needs of the growing child and the community.

At the elementary school level the productive work chosen as a central activity may be one of the crafts which are practised by the local community, provided it is sufficiently rich in educative possibilities. A major part of the educational programme should be interwoven with this basic activity. Then, the community life and the physical environment around the school are likely to furnish immense opportunities of knowing and learning a number of worthwhile and interesting things. School subjects should lose their separate entities, as so many different bits of unrelated knowledge, having little significance beyond the four walls of the school. On the other hand, the whole education should be based on a process of correlation and integration of all the subject matter and other activities that the children need to learn and do for their own growth as well as for the improvement of the community life.

The transition to the secondary school should mark the next stage in the growth of a child, rather than stand as an administrative barrier past which only the "elite" may go. In a democratic system of education elementary and secondary schools cannot be thought of as self-contained and alternative phases. On the other hand, they should be regarded as successive steps in a single universal scheme of education for all.

Secondary school should take care of the developmental tasks of the growing pupils as did the elementary school. Since it is a more advanced stage, the youth can be prepared to shoulder greater responsibilities. They are now in a better position to appreciate the demands of adult life. Happily, at this stage natural differences between young

people become more conspicuous and easily identifiable. Therefore, different types of schooling can be arranged for them. The provision of diversified curricula is very essential, for each individual can easily absorb only that part of human culture for which he possesses natural endowments and capacities, inclinations and interests. This does not in any way isolate him from the rest of the community, because the cultural goods he is interested in are after all the products of a collective human endeavour. Arrangements must be made both for the academic type and for the practical type of studies, *e.g.*, agriculture, technology, fine arts, etc., and the youth should be guided to pursue a course of studies which may bring into relief their own creative and productive capacities.

Variations in curriculum, however, should not imply social distinctions, but ought to be based solely upon differences in the ability and needs of the youth, as well as the demands of society.

Keeping in view this picture of future development of education in India, the next chapter will be devoted to an analysis of the present examination system of elementary and secondary schools, for examinations will affect greatly the progress of our education, as they have done so far.

## CHAPTER II

### THE PRESENT EXAMINATION SYSTEM IN INDIA

For an analysis of the examination system in India, it is necessary to provide a brief statement regarding the administrative and organizational set-up of education in the country.

What is described here is not necessarily true in every respect throughout India. Education, being a subject under the jurisdiction of provincial governments, varies somewhat in detail from province to province. But the general pattern outlined here is more or less the same in all the provinces.

At the present time our educational ladder is divided into three main stages, namely the primary, the secondary and the university. In most provinces primary school is a five-year-school and caters for children from six to eleven years of age. The secondary school admits pupils after they have passed the primary school, as well as earlier, from the third grade upwards. The High School is an eight-year-school from the third to the tenth grade. Some provinces have another post-primary school, called the vernacular middle school, which has three grades.

But this pattern will be changed slightly according to the proposed plan for post-war educational development in India. Education is being organised, now, on the following pattern:

The Basic or Elementary School is to provide universal, compulsory and free education to all boys and girls between the ages of six and fourteen. This stage is broken up into two parts—a five-year Junior Basic School and a three-year Senior Basic School.

The High School is designed to cover six years after the completion of the Junior Basic School. So the normal age of admission will be about eleven. Admission to this school will be on a selective basis.

With this background of the educational system in view, a survey of examinations given in elementary and secondary schools will be made below:

### 1. NATURE AND CONDUCT OF EXAMINATIONS

Both in elementary and secondary schools there are internal as well as external examinations. The internal examinations are conducted and administered terminally in each school by its own staff. But these examinations are considered necessary according to the rules and regulations of the Education Department of each province. Question papers are set by the faculty of individual schools. Questions are essay-type and similar to those set for the universal graduation examinations given at the end of the school. Examinations are usually held three times a year, at the end of each term. Each examination lasts about one week. The result of the annual examination plays a decisive role in the matter of promotion to higher grade.

At the end of the last year in each type of school a public examination is conducted, administered, and scored externally by a central examining body on a province-wide scale. All of these examinations are essay-type.

#### *(a) Examinations in the elementary school.*

The public examination given at the end of the elementary school is called the Vernacular Final Examination or Middle School Examination. Some years ago, in certain provinces the examination given at the end of the primary school of four grades was also a public examination. It was conducted by the Inspectorial Staff at suitable centres throughout the province. But now the Primary School Examination is given locally by the headmasters of the schools themselves, though the certificate of having passed the Primary School is still granted by the District Inspector of Schools. All the other examinations given in the elementary schools are purely home examinations.

The examinations up to the fourth grade are partly oral and partly written. Beyond this stage all the examinations are wholly written. The papers set for these home examinations are modelled upon the pattern of the Vernacular Final Examination.

#### *(b) Examinations in the secondary school.*

The public examination given at the completion of secondary education is known by different names in various

provinces, *e.g.*, the High School Examination, the Matriculation Examination, the School Leaving Certificate Examination, etc. This examination is conducted by a University or a Board of Education, on a provincial or regional basis. Large numbers of candidates appear at this examination at various centres distributed throughout the vast area.

In several areas candidates for the High School Examination are selected strictly on the basis of a rather difficult test given to the students in the last grade a few months before the final examination.

The High School Examination is held once a year. The same papers are given at all the examination centres. Candidates are sent up by the recognized schools. Private candidates are, however, allowed to sit for the examination under certain prescribed conditions.

Examiners, both paper setters and readers, are appointed by the examining body. The paper setters are mostly selected from the University or College staff who usually do not have any experience of actual teaching in a high school. The examination answer books are distributed among the appointed readers who are asked to mark them in accordance with a set of general directions provided by the examining body. Usually the number of answer books allotted to each examiner is too large to be examined carefully within the time limit set for the purpose. This fact has been generally recognized by the various education committees.

The examination drags on for weeks and causes a great strain on the examinees. Moreover, they have to suffer unduly from anxiety during the long interval of about eight to ten weeks between the conclusion of the examination and the publication of the results.

The whole machinery of examination is defective and harmful, as is testified by the Calcutta University Commission (20, Vol. II, p. 140) in the following words: In no branch of education does the machinery tend so much to become regarded as an end in itself, or its smooth and regular running (where it exists) as a tribute *per se* to the excellence of its organization; yet in no branch does badness of design, even in small and trifling details of the machinery



affect so profoundly the whole psychology of education from the school upwards to the university, and in none is this fact less generally recognized.

## 2. AIMS AND OBJECTIVES

Examinations both in our elementary and secondary schools have at present mainly one purpose, *viz.*, that of weeding out the weaker pupils who supposedly cannot match the rest of the class in the work of the higher grades.

Incidentally, examinations have also been used to some extent as a means of instruction, as a form of educational administration and as a means of social control.

Instructionally, class examinations have been expected to motivate the pupils to prepare their lessons well and to help them identify the particular areas in which they are weak. But it is doubtful whether this purpose has been achieved to any reasonable degree.

Examinations have served in some instances as an easy means of classifying pupils into more or less homogeneous sections and of promoting them from grade to grade. They have also been used by the administrators as a convenient means of checking the work of various grades and of the teaching staff. Examinations and the general educational set-up being as they are, these procedures are far from being fair.

Some of the examinations, especially the public examinations given at the end of the vernacular middle school and high school, have in a way served as a means of social control. They have restricted the opportunities of education beyond these stages to a narrowly selected group, and they have been used as a convenient device of selecting personnel for certain services—public as well as private.

However, the aim of the high school examination, which is known by different names in various provinces, has predominantly been to serve as a screening device for admission to university courses. It is evidenced by the Calcutta University Commission (20, Vol. I, Ch. IX) in these words: "The aim of the examination is to serve as a general test of fitness for a course of university studies."

### 3. USES OF EXAMINATION RESULTS

As pointed out above, the results of examinations both at the elementary and secondary school level, are in the main used for dividing pupils into those who pass and those who fail on a preconceived, and arbitrary standard. Few teachers have derived from them specific suggestions for the improvement of instruction. Even the results of home examinations have seldom been used for remedial or guidance purposes, as they throw little light on individual weaknesses and abilities specifically.

The results of public examinations are also used, though indirectly, as a test of school efficiency. One of the most influential factors that determine whether a private school should be recognized as eligible for receiving Government grant-in-aid is how the school in question has shown up in the High School Examination, *i.e.*, what percentage of candidates sent up by the school to appear at the examination have been able to pass it. Besides, the recognized schools might lose their grants-in-aid, if they consistently show poor results in terms of percentage of successful candidates. This practice in our educational system dates back from the report of the Hunter Commission of 1882, in which the pernicious system of "payment by results" was recommended. This practice is indefensible. Grave sources of error may occur in comparing schools on the basis of examination results alone, especially when the environment and the conditions of work are widely different in various schools. Moreover, our examinations in themselves are not reliable, as will be demonstrated in a later section. This use of examinations to test the efficiency of schools has helped to make examinations unduly important with the result that education has succumbed to the requirements of large-scale examinations, ignoring the needs of the individual and society.

### 4. INFLUENCE OF EXAMINATIONS ON CURRICULUM, METHODS AND ORGANIZATION OF EDUCATION

There are several reports and studies showing the bad influence of examinations on education in India and other countries which have similar systems of examination.

The Calcutta University Commission Report (20, Vol. II, p. 141) mentions that as early as 1904, the Government of India in a resolution on their education policy deplored the fact:

In recent years examinations have grown to extravagant dimensions and their influence has been allowed to dominate the whole system of education in India, with the result that instruction is confined within the rigid framework of prescribed courses, that all forms of training which do not admit of being tested by written examinations are liable to be neglected, and that teachers and pupils are tempted to concentrate their energies not so much on genuine study as upon the questions likely to be set by the examiners.

This report on the basis of a wealth of evidence further asserts that examinations have adversely influenced the methods of teaching and of learning as well as the relations between the teachers and the taught; that they have been responsible for a deplorably widespread use of "keys" and "made easy's"; that there has been a popular practice of cramming the prescribed text books without understanding; that the problem of "stagnation" has assumed alarming dimensions; and that the very aim of education has been degraded to that of passing the examinations.

The above conclusions are generally supported by Watkins (164), the New Education Fellowship (110), the Auxiliary Committee on Growth of Education (61) and the Zakir Husain Committee (57).

Experience in some other countries too confirms the general findings mentioned above. The Examination Enquiry Committee (108: 266-269) in their findings based on the reports submitted from twenty-two countries draw a general conclusion that the existing examination systems seriously interfere with educational programmes in many countries and that the rigid, mechanistic type of external examining and supervision greatly hampers good teaching.

Again, the International Commission on Examination (111) point out that the evil effects of examinations include the undue importance given to academic attainment at the cost ✓ of the practical and aesthetic aspects of education, and indifference to individual and environmental needs. The

Commission observe that examinations tend to create an attitude of tension and anxiety among pupils with the result that they lose their natural curiosity and endeavour for real learning, and that examinations demoralize teachers who are led to think that their reputation largely depends on the examination successes of their pupils.

The Committee of the Secondary School Examination Council (27) make a similar criticism of examinations in England. They are of the opinion that one of the most vicious effects of examinations has been the sacrifice of originality for the sake of uniformity.

Education in Canada, Australia and South Africa has suffered from their examination systems for similar reasons (176: 154-408). In South Africa the Matriculation examination has assumed an undue importance, because it determines to a large extent the grading of a school and incidentally the Principal's salary. This is also true of India to some degree, as has been already described in the preceding section.

To sum up, the evidence available with regard to examinations in India as well as in other countries goes to show that examinations have adversely affected education. Instead of serving as a useful tool in the service of education, they have presumptuously assumed the role of a dictator controlling every aspect of education. They have not only dictated what shall be taught, but also how it shall be taught. Even the organization of education and administration of our schools reflect the cramping influences of our examination system.

## 5. VALIDITY OF EXAMINATIONS.

The validity of an examination is defined as the degree to which it measures what it claims to measure. It means that for the determination of validity, one must have a well-defined and suitable criterion of the characteristic which the examination is intended to measure.

Every examination claims to measure some aspect of human behaviour explicitly or implicitly. The assumptions underlying it are:

- (1) The characteristic to be measured has a well-defined

criterion against which it can be evaluated in a particular case.

(2) The questions set are really adequate to test the criterion.

(3) The examiner's judgment of the answers to the questions is in conformity with the criterion.

Any one of these assumptions is, however, seldom justified in our examinations, as is evidenced by a number of studies, some of which are quoted below.

The Calcutta University Commission Report (20, Vol. II) seriously questions the validity of the Matriculation Examination. The report maintains that the criterion is uncertain, that no precise meaning can be attached to the score obtained by a candidate, that marks may be allotted to the unimportant portion of an answer and leave out of consideration the important, and that even for the limited purpose of serving as a passport to university or college admission, the matriculation examination is inadequate, for a considerable number of students admitted to university fail to succeed in the courses they take.

Watkins (164) has a similar statement to make about the Secondary School Leaving Examination in the Province of Madras.

There have been a number of statistical studies on the validity of essay examinations in the United States. Engelhart (39) remarks that the validity of essay examination has been studied by correlational techniques, taking school marks, the scores on objective tests, or intelligence tests as criterion. He admits that none of these criteria is satisfactory. Nevertheless, the available evidence shows that essay examination is less valid, because of its limited sampling of student knowledge, than objective tests.

It is claimed by the protagonists of essay-type examinations that these examinations are more valid than the objective tests inasmuch as the former measure the more important outcomes of education such as the abilities to think, to reason, to organize, etc., while the latter provide mainly the measures of memory. But even from this point of view, essay examinations in practice have not been proved to be any better than the objective tests. The conclusions drawn by Wrightstone (173), though based on studies con-

ducted in America, can reasonably be generalized to the Indian situation, for the nature of the essay examinations is more or less the same in both countries. He observes that an essay-type question gives no assurance that its answer necessarily involves a significant amount of reorganization of knowledge. On the other hand, he says, the essay-type test measures memory more than any other mental process.

The validity of our examinations is questionable because of the uncertainty of any clear cut criterion, and the inadequacy of sampling of the material which is supposed to furnish a measure of the criterion concerned.

#### 6. RELIABILITY OR CONSISTENCY OF EXAMINATIONS.

The degree of accuracy with which an examination measures whatever it does measure is called reliability of examination.

Reliability of examination has two phases—(1) the degree of agreement between the marks assigned to a paper or a set of papers by two or more examiners, *i.e.*, reader reliability, and (2) the degree of agreement between the marks received by examinees on two comparable examinations, when the two sets of papers were scored by different persons.

There are a number of studies relating to reliability of examination. But so far as the essay examinations are concerned, these studies mainly fall in the first category, that is, they seek to find out the reader reliability.

In India there has not been much effort to prove the unreliability of examinations statistically, although on this point there is a general agreement.

However, there are available a few studies in this field. One study by Dutta (31) shows the wide variation in the judgment of the same examiner at different periods of time. He reports a correlation of .48 between the marks awarded by the same examiners a week apart. He further reports that the correlation between the marks assigned in 1921 and 1926 to the same answers by the same examiners ranged from .42 to .82 in different subjects.

There is another study by Dutta (32) where he shows the unreliability of traditional examinations on the basis of an analysis of marks awarded by different examiners in four school subjects. The correlation between the marks awarded to scripts in various subjects by two examiners ranged from

·60 to ·84. The correlation was highest in Mathematics and lowest in English and History. He explains the disparity as being due to the fact that examiners are unconsciously influenced by such factors as handwriting, spelling, appropriateness of wording and many other adventitious things.

In Western countries a lot of work has been done in furnishing statistical evidence to establish the unreliability of traditional examinations. The earliest study of this kind was by Edgeworth (England) in 1890 (36). There are reported also three studies on reliability by Starch and Elliott (U.S.A.) in 1912-13 (71: 62). They analyzed the scores of high school pupils on examinations in History, English and Mathematics, and came to the conclusion:

Variability is a function of the examiner, and the method of examination and not of the subject; and such variability throws suspicion on the fairness and accuracy of existing methods of evaluating the quality of work done in the schools.

In another study (71: 69) they conclude:

No amount of care in the marking of the papers of the essay-type—discussion of standards before the marking was undertaken, the reading of papers by two or more examiners, the distribution of students on a normal curve—could successfully eliminate the fallibility of subjective judgments.

Findings of Starch and Elliott in a study of grading in Mathematics (144) are rather surprising. It is usually believed that marking in Mathematics is more reliable than in other subjects. But they found a wider variation of grades in Geometry than in their previous study of English marks. They came to the conclusion:

There is no inherent reason why a mathematical paper should be capable of more reliable evaluation than any other kind of paper.

They attributed the wide variation in their study to the complicated factors involved in evaluation.

Further, the unreliability of essay examination is established by a number of interesting investigations made in connection with the International Examination Enquiry under the auspices of the International Institute of Teachers

College, Columbia University, New York. Some of the important ones are given below:

Reliability of the Baccalaureat Examination in France is generally claimed to be very high, specially in the subjects which lend themselves more readily to objective marking, for example, Latin Translation. But the evidence given before the International Examination Enquiry Conference shows that this claim is far from being justifiable. The report of its proceedings (66: 18) says:

One of the markers writing in the short report asked for by the Commission thought that, though a difference of two marks in twenty might be expected in the evaluation of the candidates who were just about passable, in the case of very good or very bad papers, those distinctly above or below the average, agreement would be practically complete. Experience has proved this optimism to be unfounded. Discrepancies of fifteen, twenty, and in certain rare cases, of thirty marks out of a total of sixty, have been noted.

Hartog (53: 9-10) reports the conclusions of a comprehensive study on reliability of essay examinations in England as follows:

It is clear that the part played by chance in the verdicts given at different examinations on which careers depend must often at the present time be a great one

Of all the results recorded by the English Committee perhaps the most disturbing are those recorded in the investigation on the marking of School Certificate History scripts. It was found that when fourteen experienced examiners re-marked independently fifteen scripts which had all received the same moderate mark from the examining authority by which they were furnished, these examiners, between them, allotted over forty different marks to the several scripts. It was found, further, that when these examiners re-marked, once more the same scripts after intervals of from twelve to nineteen months, they changed their minds as to the verdict of Pass, Fail, and Credit in 92 cases out of the total of 210. Clearly a test of this kind cannot inspire confidence.

On the basis of the evidence furnished above, one is



strongly inclined to believe that essay examination is grossly unreliable.

### 7. MEANING OF MARKS.

The question of the meaning of marks is closely related to the one of reliability of examination. In the previous section it has been made clear that our examinations are very unreliable. This, in itself, throws some light on the variation in the value of marks.

Studies of examination results in various provinces of India show a significant difference in the standards of examinations in different subjects in the same year and in the same subject from year to year. This fact points to the variability of the value of marks.

Dutta (33) in a study of the results of the High School Examination for five years shows that prominent fluctuations in the mean and standard deviations as well as in the percentage of passes occur in all subjects. These fluctuations are too great to be explained as being due to the probable error of marking alone. Assuming the improbability of any sudden changes in the average intelligence or in the efficiency of school training, where a large number of pupils are involved, the fluctuations must be due to the changes in the standards of marking or of the questions, or of both. He also points to the unreasonableness of summing up marks obtained in different subjects and the more so in optional subjects for assigning a division or grade on the basis of the total, for the value of the unit-mark is not the same in different subjects.

There is one rather comprehensive study by Seshu Ayyar and Raghunathan (137) based upon marks assigned in a certain public examination in various school subjects in six consecutive years in Madras. They concluded that the fluctuations in the mean and in the standard deviation of the marks in all the subjects cannot be due to "probable error" alone. They argued if the observed fluctuations in the mean and in the standard deviation were due to variations in the average intelligence of the candidates from year to year, they would be similar in the various subjects. But the results obtained did not show such similarity. Hence they con-

cluded that these fluctuations can be attributed mainly to fluctuations in the standards of the examination as determined by the difficulty of the question papers, the stringency of the marking and the like.

On the basis of a statistical analysis of marks obtained by candidates in the Matriculation Examination, Mahalanobis and Chakravarty (87) conclude that the standard of examination in different subjects varies significantly from one another.

Mukerjee (104) made a survey of the High School Examination marks and showed the arbitrary character of a minimum pass mark as well as of second class, first class and distinction marks.

However, Paranjpe (116) in his study defends the Bombay Matriculation Examination as "a fairly reliable test". Though he admits of the wide fluctuations in the annual percentage of passes, he does not ascribe them to any arbitrariness of standards. He explains these fluctuations on the basis of deterioration of the academic standards of the candidates owing to various reasons. He shows a relative constancy of the percentage of candidates securing different divisions from year to year. But he concludes:

We have not proved that the standard observed by the examiners is the right standard, . . . that the method of examinations adopted by the Bombay University is faultless. We have only tried to show that the mechanism devised is not so bad as it is sometimes supposed to be.

Seshu Ayyar and Raghunathan in their study (137) conclude:

The fixing of the minimum pass mark appears to be very arbitrary at present. From the data it may be seen that for a pass less than average intelligence is demanded in Science and History, whereas slightly more than average is demanded in English.

A proper method will be not to have an arbitrary fixed minimum, but to define the minimum to be the mark that is at a prescribed distance from the mean, since by assumption, the average achievement which is measured by the mean is constant from year to year.

We have what they call a "pass-mark" fixed for each examination in advance expressed as a percent of possible

or perfect performance. This concept of "pass-mark" has served only to confuse many of the real issues in our country.

The concept of perfect performance or the cent per cent standard as well as that of the various grades called divisions, I, II, and III, has no single meaning, but varies from one examination to another in a manner which is largely accidental. The examiner cannot predetermine the difficulty of the examination questions. So what actually happens in marking a paper is that he consciously or unconsciously adjusts his scoring so that an arbitrarily predetermined proportion of students will "pass" and obtain various divisions, regardless of the percentage value at which the pass-mark and marks for different divisions are set. Thus a revision in the standards of marking goes on while the examiner is reading the scripts, with the unfortunate result that all the scripts are not evaluated on the same basis and hence do not receive comparable marks.

Thus, in fixing per cent grades or divisions arbitrarily, we are only deluding ourselves to no particular advantage. The percentage system is supposed to set absolute standards and to result in scores which are comparable from examination to examination. But it is not true. Marks in an examination can only have relative meaning, and the system of scoring should be consistent with this truth.

## CHAPTER III

### DEVELOPMENT OF OBJECTIVE-TYPE TESTS IN INDIA

For various reasons, in India, so far no concerted effort has been made in the field of the construction and use of objective tests. Up to the year 1921 only a few isolated experiments with intelligence tests had been conducted by Christian missionaries engaged in educational work, among whom may be mentioned the names of the Rev. E. L. King of Narsinghpur (C. P.) and the Rev. D. S. Herrick of Bangalore (Mysore). King and Herrick used the Goddard Form-Board in their respective schools for measuring intelligence.

The earliest record of a public educational agency advocating the construction of objective tests for use in public schools is found in the proceedings of a meeting of the Central Advisory Board of Education held in October 1921, when it was resolved that experiments on a large scale should be conducted with a view to devising a series of intelligence tests suitable for children attending Indian schools. Though this proposal was not carried out, since then some isolated efforts have been made to construct both intelligence and achievement tests. But this work has not so far met with the enthusiasm it deserves. Some of the main attempts in this direction are summarized below:

#### 1. INTELLIGENCE TESTS.

At the instance of the Central Advisory Board of Education, four Government Training Colleges at Saidapet (Madras), Dacca (Bengal), Jubbalpore (C. P.) and Lahore (Punjab), undertook to make an adaptation of the Stanford Revision of the Binet-Simon Intelligence Test. The Bureau of Education offered their services to collate the results obtained by the application of the test to children attending the model schools attached to the respective Training Colleges.

The series of provisional tests thus gathered covered the range from the eighth to the sixteenth year, because though the tests were to be given in the vernacular, they were not intended for use in the primary schools. Later on, one more test was added to this series for use with children of seven years of age. It was now intended to introduce these tests in elementary schools, but for some reason this preliminary work proceeded no further and the tests remained incomplete and unusable for lack of norms and other necessary information about them.

Perhaps the first significant attempt to prepare an intelligence test in India was by Rice (124) who brought out a test called the Hindustani Binet-Performance Point Scale in 1922, in two of the Indian languages, Urdu and Punjabi. This test was gathered out of a translation of the Stanford-Binet Scale, and of parts of the Otis Group Test and the U. S. Army Alpha. The non-verbal parts of the test were adapted from Army Beta, Pintner—Paterson Performance Scale, and Porteus Maze Scale. The directions for administering them were translated with or without various modifications and adaptations. Certain parts of the original tests were rejected on a consideration of the time needed for administering the test, the need for variety, and the adequacy of the material in respect of its being equally familiar to the children of various home and school environments. The final form contains thirty-five tests. This test was duly standardized and norms were established in terms of mental ages for various scores.

The Stanford Revision of the Binet Simon Intelligence Scale has also been translated into a number of other Indian languages, *viz.*, Marathi, Kanarese, Tamil, Bengali and Telugu. But the Bengali and Telugu versions have not been standardized for the local conditions.

Even these tests have not been used on any considerable scale. Their use has been restricted to a few private and progressive schools.

## 2. GROUP INTELLIGENCE TESTS.

There have been several attempts on a local level by individuals to construct group intelligence tests. But they could

not win popularity anywhere beyond a very limited circle, mainly because of the overwhelming importance given to the public examinations, preparation for which is regarded as the sole aim of education. Some of the important tests are named below:

(a) *Verbal*—

A group test of Intelligence in Bengali by Mahalanobis.

A Gujrati version of Ballard's Group Test.

The Simplex Mental Test—Hindi adaptation by Jha.

The Terman Group Test of Mental Ability—Hindi adaptation by Jha.

A Group Verbal Test for College Students in Hindi, Urdu and English by Jalota.

The Pasrur Group Intelligence Test in Urdu by Kumaria.

The Group Test of Mental Ability for College Students by Shah.

The Preliminary Classification Test in Hindi, Urdu and English by Manry.

(b) *Non-verbal*—

Goodenough "Draw-a-man" Test, standardized by Menzel.

Oliver's "General Intelligence Test for Africans" adapted for use (1) in Hindi by Menzel, (2) in Urdu by Ewing and Leeder and (3) in Gujrati by Chilson.

### 3. APTITUDE TESTS.

Efforts to construct and use aptitude tests have been negligible in the past. Menzel (95) reports that the most consistent use of tests has been made by Warnshuis and Olcott of Vellore in what they call "The Arcot Mission Experiments in Tests". The tests have been mainly used for the selection of candidates for admission to Middle and High School. This experiment has had the helpful criticism of Thorndike and Pintner.

Many has prepared a "Professional Test for Teachers" in English to be used as a test for occupational fitness.

Shah has made a similar test called "Teaching Aptitude Test".

#### 4. ACHIEVEMENT TESTS.

Still less has been done by way of making achievement tests in Indian languages. In a few English schools some of the achievement tests prepared in America and England have been used. However, there are a few tests which have been brought out in India, for example, "An Urdu Writing Scale" by Ryburn, "New Examination in History" by Bokil, and "New Examination in English and in Geography" by Wilder.

It is evident from the foregoing survey of the state of objective tests in Indian education, that so far very little, an almost negligible amount, has been accomplished in this field. So, if objective tests are considered necessary and useful instruments in our educational development, the work of test construction has to be started almost from the very beginning.

## CHAPTER IV

### NEED FOR REFORMS IN EXAMINATIONS

In the last chapter various phases of current examinations in India were discussed, and references were made to a number of studies and investigations made in this field to show the weaknesses and defects of our examination system. This chapter will first make a short survey of the suggestions and recommendations of various educational committees and commissions for the reform of the present system of examination. An estimate will then be made of how far these suggestions and recommendations really go to improve the existing situation, as well as of the extent to which they have been adopted in actual practice.

#### 1. RECOMMENDATIONS OF VARIOUS COMMITTEES FOR REFORMS IN EXAMINATIONS

##### A. *The Calcutta University Commission Report*

###### (a) *Change in the role of Matriculation examination*

The Commission (20, Vol. IV, p. 55) recommend that the Matriculation Examination should no longer be regarded as an entrance test for university admission, so that it may be freed from the direct control of the university.

###### (b) *Methods of evaluation other than written examination*

A written examination alone can no longer be the basis of judgment of pupil's success. The Commission (20, Vol. 1) observe that the need of introducing subjects like physical education and manual training makes a written examination in itself an inadequate test either of the work the schools are doing, or of the general attainments of pupils. To appraise these aspects of education vast collective examinations are not feasible. Therefore the responsibility for declaring candidates fit to receive certificates must be thrown in some measure upon the schools themselves.



The Commission (20, Vol. IV) further recommend that a system of visiting examiners ought to be instituted. These examiners should examine notebooks and exercise books of students, arrange for practical examinations in subjects like manual training, report upon the organization of the school and the methods of teaching and take into account the reports made by the teachers upon the work of individual candidates.

(c) *Decrease in the burden of formal examination*

The Commission (20, Vol. IV, p. 56) suggest that the burden of the written examination can be made lighter by splitting it into two parts, namely, an examination in compulsory subjects and another in non-compulsory subjects. The latter can be held at the time of the visit of the visiting examiners and combined with an oral test. Thus, the candidates can be relieved considerably from the strain of a formal examination extending for weeks.

But the Commission believe that the above privilege should be granted only to a limited number of schools in recognition of their special excellence as places of education. The Commission (20, Vol. IV, p. 57) describe the advantages of this scheme in the following words:

We believe that the introduction of this alternative method of conducting the high school examination would be a valuable corrective to the tendency of all very large systems of written examination to become mechanical in their methods and to repress individuality in methods of teaching. The bestowal of the privilege of this distinctive form of examination would be a suitable acknowledgment of the special excellence of a school. The hope of obtaining the privilege would be an incentive to many others. The withdrawal of it should be penalty attached to a decline from the high standard of excellence previously reached.

So great would be the advantage of thus conducting the high school examination that it might be expected that we should propose its general introduction in the case of all high English schools.

But for various reasons, administrative and educational, the Commission think that the proposed scheme of exami-

nation cannot be put into operation all at once. Therefore for all high schools, except for a limited number distinguished by special excellence they propose that the plan of holding a general written examination as the sole test should be continued.

(d) *Establishment of a new examining body*

For conducting High School and Intermediate Examinations a separate agency is suggested by the Commission (20, Vol. V., p. 22). They say:

We propose that the present matriculation and intermediate examinations should be transferred to the control of a Board of Secondary and Intermediate Education. .

Possibly the latter Board might be able to refer questions (regarding examinations) to the university organization, or some joint arrangement might be made between the University and the Board for the employment of the experts of the University in dealing with examination problems.

The Commission recommend that the experience of headmasters and other teachers in secondary schools should be utilized by the Board of Examination.

(e) *Subdivision of high school examination on the basis of zones.*

The High School Examination becomes very unwieldy because of the large number of candidates appearing at it throughout a vast province or a region. With a view to facilitating the conduct of such a huge examination, the Commission (20, Vol. V, p. 23 and 24) suggest that this examination may be subdivided into a number of zones of a convenient size. In making this suggestion, the Commission are, however, conscious of the objection that this step would result in a variation of standard. But they think that this objection can be met as follows:

If different papers were set for different groups, it might be objected that there would be a variation of standard, but this should not exceed the variation which now takes place from year to year; and if the groups were arranged territorially, which might be convenient in arranging

meetings of examiners, the examiners acting on one occasion for a territorial group A might act on another for territorial group B, and so on; or there might be an interchange of examiners for the various groups.

In examinations on a large scale there is, as we have pointed out, a tendency to sacrifice the real purpose of an examination to uniformity of marking; to set questions of which the chief merit is that they lend themselves to such uniform treatment and make the least possible demand on the examiner's time and judgment. This is almost inevitable; and on this account we should prefer the matriculation examinations to be reduced within reasonable limits by some such method of subdivision as we have suggested, although it might perhaps be urged that the reduction would not be sufficient materially to alter the character of the examinations.

(f) *Periodical inspection of examinations.*

The Commission (20, Vol. V, p. 24) suggest that every examination should be periodically inspected, with a view to ascertaining whether it is really fulfilling the aims and objectives for which it is designed. In large examinations such inspection is most necessary, owing to their tendency to become mechanical.

(g) *Improvement in reader reliability.*

The Commission (20, Vol. V, ch. XL) suggest that uncertainties of standard and of numerical marks would be largely diminished, if fairly precise verbal definitions are given of the meaning to be attached to a "pass".

### B. *The Zakir Husain Committee Report.*

The Committee are primarily concerned with elementary education. Their recommendations are, therefore, applicable only to those examinations which are usually conducted on a local basis in every school. Further, they do not consider any Final Examination of the traditional type to be necessary even at the completion of elementary education. Their chief recommendations regarding the reorganization of examinations are outlined below.

(h) *Emphasis on the evaluation of school efficiency.*

The Committee stress the need for an evaluation of school efficiency rather than an assessment of individual achievement, as their following remarks (57: 36 and 37) indicate:

The purpose of examinations can be served by an administrative check of the work of the schools in a prescribed area, by a sample measurement of the attainment of selected groups of students conducted by the inspectors of the Education Board. To maintain the desired level of efficiency throughout the school system, the Board of Education should conduct an annual testing of typical sections from each grade of the school of the various divisions. As far as possible, pupils should not be made to repeat the work of a grade or any considerable portion thereof. If a large number of children in a class fails, the work of the teachers needs watching. If a school records many failures its administration must be looked into and if the number of failures in the whole school system is large, there is something wrong with the curriculum and the norms set for the several grades. This should be set right.

The Committee expect that this arrangement would greatly improve the situation in a number of ways. They remark (57: 36) as follows:

The introduction of this check-up by sample testing will add greatly to the efficiency of the school system and will in fact lengthen the teaching term of the final class by at least six weeks, the time now usually wasted on memorizing "notes" and "revisions" which precede the ordeal of examinations. This period may now be devoted to a test of the efficiency of individual pupils in the basic craft over a period of weeks, to be determined from case to case, and to comparatively more intensive work for the improvement of the village community which the school serves.

The Committee hold that the efficiency of a school cannot be judged by the results of the sample achievement tests alone, but the judgment regarding it must also take the social function of the school into consideration, namely its contribution towards improving the community life. The Committee (57: 37) observe:

The Board of Education should judge the efficiency of its schools by the sample achievement tests mentioned above, by the efficiency of the pupils in the basic handicraft, and by the specific contributions made by the teachers and pupils to the improvement of the general life of the community around. An annual district exhibition of the work of the schools will also go a long way towards keeping up a definite standard of achievement.

(i) *Use of pupil record for examination.*

The Committee (57: 37) suggest the use of carefully prepared record of pupils work as a basis for promotion from grade to grade which should be decided exclusively by the teaching faculty of the school.

(j) *Use of objective tests.*

The Committee (57: 36) recommend that tests be long enough to cover the whole range of the curriculum and be in a form which makes marking objective and independent of individual judgment.

(k) *Need for organization.*

The Committee (57: 43-44) suggest that there should be a collaboration between the curriculum experts and test-constructors.

The Committee are of the opinion that the Board of Education in each province should provide on its academic side for an efficient staff of educational experts and that this staff should carry on scientific research to fit the school curriculum to the real life needs of the pupil. Tests should be constructed in close consultation with the specialists responsible for curriculum revision.

C. *The Central Advisory Board of Education Reports.*

The Central Advisory Board of Education have made several suggestions regarding the reorganization of examination system in their report on "Post-War Educational Development in India." There are two more recent reports on examinations prepared by special committees appointed

by the Board. These Committees have surveyed the whole field of examinations from the elementary school to the university, and have made a number of recommendations. Some of the major ones are given below:

(l) *Selective function of examination.*

The Board contemplate a national scheme of education which would provide schooling facilities for all children up to the age of fourteen. But beyond this stage education will be selective. The Board (18: 15) observe:

The function of the High School is to cater to those children who are well above the average in ability. It has been well said that the chief purpose of higher education is to form an elite not for its own sake but for that of society. Character and intelligence, which are the essential attributes of any elite, are not confined to any particular class in the community; hence the selective principle by which children should be picked out for higher education on completion of the Junior Basic (Primary) stage is of the greatest importance.

The Committee (19: 5) express the need for selection of candidates for admission to High Schools as follows:

With the introduction of a compulsory and universal system of primary education there will be an unprecedented increase in the number of children seeking admission to High Schools. This will necessitate some positive type of test by which abilities and aptitudes of the pupils can be ascertained with sufficient precision.

(m) *Method of selection for admission.*

(i) *To High School.*—The Committee (19: 5) are of the opinion that:

Selection at this stage, *i.e.*, about the age of eleven should be based on a careful scrutiny of candidates' previous school records with due regard to their probable reliability and of their performance at a test designed and conducted by experts. Every effort should be made to guard against children of real promise being excluded through illness or any other cause from the chance of going to High School. Whatever the procedure adopted—and regard

may usefully be had to the experiments already conducted in other countries—the general control should be in the hands of a Board of Examiners specially constituted for the purpose and presided over by a very senior officer. For the “late developers” at the age of thirteen or fourteen the technique of selection should generally be the same as at the age of eleven.

The Board (18: 15) recommend that on completion of the fifth grade of Junior Basic School children (at the age of eleven plus) should be diverted either to Senior Basic Schools or to High Schools according to their abilities, aptitudes and general promise. The list of promising candidates should be prepared by the Junior Basic Schools in consultation with the Inspector of Schools. Then a common examination should be given to all these candidates. It should be designed to test intelligence and promise rather than actual attainment. This common examination is to be controlled by a Board of Examiners specially constituted for the purpose.

(ii) *To Technical High School.*—The Committee (19: 5) consider that the method of selection for admission to a Technical High School should be the same as suggested in the case of ordinary high schools, though special stress should be laid here on the use of aptitude tests, with a view to ensure that the selected candidates possess the requisite capacity, interest and practical ability.

(iii) *To Teachers Training School.*—For the purpose of admission to Training Schools, the Committee (19: 6) suggest the following procedure:

Pupils who wish to become teachers should be picked out during the last two years of their high school course. They should be kept under observation by heads and inspectors and given the opportunity of visiting other schools and trying their hands at actual teaching. Doubtful cases may be sifted by this means. This system has the advantage of insuring that intending teachers before being admitted to Training Schools will have shown at any rate some signs that they are likely to make good.

The Board (18: 50) recommend a similar procedure for the selection of candidates for admission to Teachers Training Schools.

(n) *Freedom of high school examination from university domination.*

The Board insist that high school should be freed from the rigid control of university in the matter of formulating its curriculum and examinations. They (18: 17) remark:

High School education should on no account be considered simply as a preliminary to university education, but as a stage complete in itself. . . While it will remain a very important function of the high schools to pass on their most able pupils to universities or other institutions of equivalent standards, the large majority of high school leavers should receive an education that will fit them for direct entry into occupations and professions . . . It is to be hoped that in the near future with the development of a higher standard of high school education, a school leaving certificate, supplemented where necessary by further training of a technical or commercial type, will come to be regarded as a more normal qualification than a university degree for entry to all but the highest grades both in government service and business life.

The Committee (19: 5) also support the above view as follows:

Since under a national system of education only a small percentage of high school students will proceed to universities, there will be still less justification for the curriculum, methods of instruction for the others being determined by the requirements of the prospective university students. The Committee hope that both educational and examining authorities concerned with high schools will bear this important consideration in mind both in devising courses and methods of study and in formulating examination techniques.

(o) *Proposals for making examinations objective, reliable and valid.*

The Committee (19: 2) emphasize that the ultimate aim to be kept in view is the creation of technically more accurate, reliable and valid types of examinations, which should eliminate subjective variations in marking papers and establish objectively measurable standards.

(i) *Prerequisites.*—The Committee think that much spade



work has to be done before a reasonable amount of success can be expected. They state:

The process will involve elaborate research and co-ordinated experiments all over the country and it may take the national education system some time to evolve the types of examination which will be most conducive to the all-round mental development of the scholar. Meanwhile, however, the Committee are of the opinion that they cannot do better than lay down certain principles.

(ii) *Marking*.—The Committee (19: 3) suggest that the system of numerical marking should be changed to that of letter-grading, for they believe that it is a more satisfactory method to judge whether a candidate or a group has reached a certain level of efficiency. They express it as follows:

The Committee realize that examination results are often used for the award of public scholarships and for other purposes for which an order of merit is necessary. The Committee are of the opinion that though it may be necessary to allot numerical marks or produce an order of merit in the top group of candidates, attempts to arrange all candidates in order should be avoided wherever possible. In the normal course, for grading the achievements of examinees it would be sufficient if they were graded into three or four main groups.

(iii) *Reader reliability*.—For improving reader reliability the Committee (19: 3) suggest the following:

With a view to reducing the subjective factor as far as possible, the Committee consider it most desirable that all answer-books should be marked separately by two examiners and in case of disagreement the answer-books should be referred to the Chief examiner. The Committee appreciate that in the present circumstances it may not be feasible to adopt the suggestion at the school stage, where the number of examinees is very large, but they see no reason why this practice could not be adopted forthwith at all stages after matriculation.

(iv) *Agencies*.—The Committee (19: 3) make the following suggestion for making continuous improvements in examinations:

Apart from the proposed agencies for ensuring moderation of papers and standardization of examination results

as a whole, it is desirable that every examining authority should appoint a permanent official of professional rank, with adequate knowledge and experience of the various examinations, techniques, to enable him to advise the authorities concerned in regard to the results of the current examinations and to improvements that could be effected in the light of the experience gained in this country or abroad.

(v) *Objective tests*.—For improving the reliability of our examinations the Committee (19: 3) recommend the use of objective tests as follows:

The Committee are of the opinion that as these new techniques (of objective testing) have proved their efficacy beyond all doubt at all school stages, every attempt should be made to devise and standardize them for use in this country so that they may supplement and ultimately replace the old types of examination.

(vi) *Practical examinations*.—In order to increase the validity of examinations in some subjects, the Committee emphasize the need of adequate provision for practical examinations. They recommend them in spite of the heavy cost involved in holding them. They (19: 5, 6) remark:

As practical examinations are relatively more expensive for the large examining authorities, the Committee apprehend that there may be a tendency to avoid them, but they are emphatically of the opinion that if the school curriculum is to be sufficiently varied to satisfy the wide range of interests of the high school population, the technique of examination at this stage must provide for practical tests in subjects like arts and crafts, music, and domestic and other applied sciences.

(p) *Distribution of examinations and use of cumulative record*.

The Committee (19: 4, 5) suggest that examinations should be distributed over the whole range of school-life. They think it desirable to take into account carefully prepared school records for evaluating pupil success. Therefore assessment of pupil achievement must continue to be made throughout the school career. The degree of reliability of a cumulative record necessarily depends on the quality of

the teachers employed, therefore, the Committee are of the opinion that unless we can produce efficient teachers as envisaged by the Central Advisory Board, school records should be treated with caution.

(q) *Duration of examinations.*

We have a time-honoured practice of stretching out examinations over weeks and weeks. One of the important reasons for this practice is that it affords intervals in which candidates may undertake intensive memorization of the material connected with the examinations that are still to take place. The Committee (19: 7) greatly deprecates this practice. In their view no examination ought to extend over a longer period than one week, unless it is absolutely impossible to make the necessary arrangements.

## 2. EVALUATION OF THE RECOMMENDATIONS.

On the basis of a review of the above-mentioned recommendations for the reform of our examination system, the following observations are offered.

Perhaps owing to the restrictions imposed by the terms of reference, none of the committees discussed the question of home examinations in elementary and secondary schools, except the Zakir Husain Committee. Most of the recommendations have been made with reference to the high school examination, and very little light is thrown upon the reforms required in elementary school examinations. This is a significant omission inasmuch as the examinations at the two stages, *i.e.*, elementary and secondary school, affect one another greatly. An improvement in the high school examination cannot be made without corresponding reforms in the other examinations of the elementary and secondary school that lead to it; and vice versa.

However, certain significant recommendations and suggestions have been made. They are briefly evaluated below:

It has been emphasized both by the Calcutta University Commission and the Central Advisory Board of Education that the high school examination should be regarded as a school leaving examination intended to measure the outcome of the instructions which pupils have so far received. This

recommendation if implemented would tend to make the high school curriculum more flexible and thus help to minimize the appalling amount of stagnation and wastage from which our secondary education has been suffering.

They also propose some other techniques of evaluation besides the written examination, especially for those school subjects which cannot be examined adequately by ordinary written papers. For instance, they recommend practical examinations in science, music, art, crafts, physical education and the like. Though this step is intended to broaden the scope and purpose of education, yet the means by which it is proposed to carry it out, namely through the agency of visiting examiners, takes away much of its value. For in this procedure almost all the ill-effects and defects of external examinations persist. Furthermore, it is made operationally more expensive and unwieldy.

The establishment of a new examining body independent of university control and the subdivision of the high school examination by zones, as suggested by the Calcutta University Commission, are good proposals inasmuch as they make for better and easier administration, but they cannot substantially improve the situation so far as the aims, purposes and contents of examinations are concerned.

The Central Advisory Board of Education lay too much emphasis on the selective function of examination. Presumably in the present stage of educational development in India, it may be considered necessary to restrict admission to high schools, on the plea that there are not enough schools to accommodate all the children seeking secondary education. But to insist on the selective process as a matter of principle or even as a long range policy is indefensible in a democratic society which professes among other things the provision of equal educational opportunities for all children. What is really needed is not selection but classification. The basic question is not who shall go to high school but rather what each individual should study in a high school, so that he may be able to make the best use of his time and talents and later on to contribute his utmost to the welfare of the community. So a scheme of national education should envisage a non-selective secondary education, with provision, of course, for the identification of the various abilities and

interests of pupils and their guidance and direction into suitable channels.

[The Examination Committee of the Central Advisory Board of Education make a very useful recommendation for the construction and use of objective tests to assess the achievement of pupils at all school stages. But in their enthusiasm for this novelty, they entertain excessive hopes that these objective tests will ultimately replace the old types of examination—an expectation which is not justified by the experience of Western countries where these tests have been in use for a considerable time.

[The suggestion made both by the Examination Committee and the Zakir Husain Committee that a carefully prepared school record over the whole range of pupil career should be taken into consideration while evaluating pupil success, is highly commendable. This will not only help to reduce the cramping effects of formal examinations but will add considerably to the validity of evaluation, as in this case other outcomes of education which are not directly examinable, and are probably more important, may also be taken into account. But this suggestion does not go far enough, for it omits the most crucial point that the evaluation thus made must be used properly for the guidance and direction of the pupils concerned.

By and large, the recommendations of the Zakir Husain Committee about examination reforms are fundamental and far-reaching. They would do away with all examinations that attempt to measure the success of individual pupils. On the other hand, they would try to evolve a procedure and technique for the evaluation of school efficiency. The basis of this idea is sound, but in the suggested plan there is a positive danger that individual efficiency may deteriorate, because of a lack of proper diagnosis and guidance based on individual evaluation, and this in its turn might tell adversely upon the collective efficiency of the group. In a society like ours, which is marching towards industrial and technological development, both accuracy of knowledge and efficiency of performance are essential. Therefore, evaluation of pupil achievement for diagnostic, remedial and guidance purposes is indispensable.

Another important and useful point made by the Com-

mittee is the fact that in the evaluation of school efficiency due weight must be given to the specific contribution of the school itself to the improvement of the general life of the community around. This is a highly significant factor in the evaluation process, if education is conceived as a means of social reconstruction. Unfortunately, the committee have not suggested how the evaluation of this important function of the school is to be carried out.

*Inadequacy of the recommendations.*

As discussed above, the recommendations regarding examination reform made by different committees do not go far enough to eradicate the evils resulting from our examination system.

The recommendations are not based on a comprehensive definition of the aims and purposes of examination. It may be conceded that to some extent they can affect suitable changes in the form or the administrative aspect of examinations. But these recommendations fail to offer much in the way of a reorientation of the content and purpose of examinations so as to meet individual and social needs. Except for the Zakir Husain Committee's recommendations, they still emphasize the use of examinations as a screening device to debar pupils, who cannot pass, from proceeding to a higher grade or school.

The high school examination is still to be externally controlled and administered on a provincial or regional basis. It does not therefore provide favourable conditions for making the curriculum flexible enough to suit the needs of individual pupils and local communities.

These recommendations, if implemented, can certainly improve our existing examinations a great deal. But they fail to widen the scope of examinations so as to cover all the significant aspects of education. The term "evaluation" is used for such over-all appraisal of educational outcomes. Wrightstone (175: 468-70) defines it as follows:

From the point of view of its functions evaluation involves the identification and formulation of a comprehensive range of major objectives of a curriculum, their definition in terms of pupil behavior and the construction of valid and reliable and practical instruments for appraising

the specified phases of pupil behavior. The instruments of appraisal include intelligence, achievement, attitude, personality and character tests, rating scales, questionnaires, interviews, anecdotal records, etc.

Evaluation should also emphasize the social aspect of education. Tests should satisfy the need not of the individual pupils alone but of the social order for which education is supposed to be a training. Hence there must be tests not only to measure the knowledge and the skills gained during the process of education but also to evaluate such outcomes of education as sociability, adjustment to group in collective action, and so on.

Judging from this wider concept of evaluation, the recommendations made by various committees regarding examination reform are inadequate.

*Lag in implementation of the recommendations.*

Inadequate as the recommendations outlined in this chapter are, even so they have not yet been entirely adopted. Only a few administrative reforms have been implemented and these are intended only to facilitate the working of the machinery; for instance, holding high school examinations under the auspices of secondary education boards rather than of universities—and that too not in all the provinces;—provision for practical examinations in certain subjects like Science, Manual Drawing and Music; and similar minor reforms.

Neither the recommendations of the Central Advisory Board of Education nor of the Zakir Husain Committee regarding the construction and use of objective tests for the evaluation of pupil achievement have so far been put into effect. There is, however, a hopeful sign that the Central Government are seriously contemplating this reform as soon as it is possible. For this purpose they have already decided to establish a Central Bureau of Psychology. The object of the proposed Bureau will be to conduct research on selective methods and the standardizing of various tests in the educational field. The Bureau (60) will deal with the following five projects:

1. Selection of primary school children for secondary education.

2. Selection of entrants to teachers' training institutions.
3. Selection of entrants to higher technical institutions.
4. Educational development of backward areas.
5. Child guidance clinic in Delhi.

Project No 1 will involve production of intelligence and other tests and their standardization, guidance in teaching methods and treatment of children in selected schools in Delhi, a sample survey in Delhi Province of children suffering from mental or physical handicaps, selection of free entrants to secondary schools in centrally administered areas, etc.

The main purpose for which the Bureau of Psychology is proposed to be set up is to measure the progress made by boys in their classes in their schools without the exclusive aid of examinations as at present. The idea is to be able to train the right type of teachers and to build up the right type of institutions to achieve this objective.

It is a move in the right direction. This Bureau may serve as a nucleus of a well-organized research institute and may stimulate and help similar endeavours in other parts of the country.



## CHAPTER V

### MODERN PRACTICES AND TRENDS IN EXAMINATIONS IN THE U.S.A. AND GREAT BRITAIN

After a review and evaluation of the recommendations made by various committees for the improvement of our examination system in India, it is proper to make a short survey of the practices and trends in examinations in more developed countries of the West, so that in proposing a plan for the reorganization of our examination system any insight gained through this survey may be fruitfully utilised. This study is based primarily on the examinations in the U.S.A. and Great Britain, as they fairly typify all the Western countries. However, references are made occasionally to the examinations in some other countries also.

#### 1. A SHORT SURVEY OF THE GROWTH OF EXAMINATIONS.

According to Hartog (49) the origin of Western examinations lies in the medieval universities. These universities were corporations of teachers and students, analogous to the trade and craft guilds of the time. Examination then had one single function. It was a test of technical efficiency. Since then, this tradition has persisted with more or less emphasis in various countries.

The first decade of the twentieth century, however, witnessed a new development in the general attitude towards the traditional examination. Examinations began to be looked upon rather critically. Even earlier, in 1888, Edgeworth in England had made a statistical investigation of examinations, throwing great doubts on their reliability. Since then they have been analysed in their various ramifications, especially in America, and a fuller insight has been acquired into their functions and techniques.

Kandel reports (72) that Cattell began in 1905 to subject the whole question of examination to scrutiny by statistical techniques. Thorndike as his collaborator analysed the

results of the College Entrance Examination Board for the students admitted to Columbia College from 1901 to 1903, with respect to the standing of these very students in the third year of the College. This study showed that even so carefully conducted an examination was an extremely imperfect means of estimating an individual's fitness for college, as the predictions made on the basis of this examination proved erroneous in 94 per cent of cases.

About this time, Binet was trying to evolve a technique of testing the intelligence of children in France. His success gave an impetus to a similar effort in America. In the beginning attempts were limited to translating and adapting his tests. But later on, new tests were constructed independently.

The first world war gave a great impetus to the construction and use of intelligence tests in America. These tests proved useful in selecting and classifying soldiers and officers for the army. After the war, there was a large influx of students seeking admission into educational institutions. To meet this situation, *Army Alpha* was tried in a number of colleges as an entrance test for some time. But later on it was found that the test had little predictive value.

In the twenties of the current century, there emerged all kinds of tests claiming to measure almost any and every phase of human behaviour. There was an enormous flood of enthusiasm and some people thought that these new tests would probably solve every educational problem and achieve every object of instruction. But by and by, as the conclusions of the scientific studies made in this field became more widely known, the earlier enthusiasm regarding the new type tests began to subside.

Now the test-experts as well as general public in America are inclined to have a more balanced, judicious and scientific view of objective tests. They have not lost faith in these tests. Nevertheless, now they would use them with caution. They are no longer regarded as substitutes for the traditional essay-type examination and teacher's mark based on his evaluation of the pupil's day-to-day work. On the other hand, objective tests are now thought of as useful means of evaluation for certain phases of educational outcome, and as such they effectively supplement the information gathered

about pupil achievement through other sources, *e.g.*, essay examinations, teacher's mark, etc.

In England and other European countries objective tests never succeeded in attaining the same popularity as in America. However, in these countries too, objective tests have been occasionally used not only in school but in industry and other departments of public life. Apart from the question whether objective tests have gained favour or not, examinations in all the western countries, including England, are showing some perceptible trends, which will be discussed presently.

## 2. MODERN TRENDS IN EXAMINATIONS.

During the last thirty years enormous work has been done in the field of examinations both in America and in Great Britain. Some of the important trends in examinations are given below:

### (a) *Emphasis on the use of cumulative records.*

One thing that stands out most clearly is the fact that written examinations alone, whether essay or objective in type, are but inadequate instruments for the evaluation of educational outcomes. The need for appraising different aspects of pupil behaviour by various methods has been emphasized, and the use of a cumulative record recommended for the guidance of students.

Kandel (71) refers to this as one of the main conclusions of the Pennsylvania Study. The Progressive Education Association (107: 13), Judd (65: 125), Burt (111: 63-64), Hartog (52: 22-26) and the Committee of the Secondary School Examination Council (27, and 14) support it.

### (b) *Decentralization of examinations.*

In America, there has never been an emphasis on external examinations conducted by a central authority. Examinations have, in general, remained entirely a concern of individual institutions at all levels of education, except in a few areas such as the Regents Examinations in the State of New York. The examinations in the elementary and secondary school are mostly of the objective type, conducted and scored

by the teachers of the respective schools themselves. As colleges in America have varying requirements and standards of admission, it is possible for most students to find their way into some institution beyond high school, if they want to. The problem of admission to higher institutions has moreover been made easy by the creation of Junior College in direct continuation of High School.

In the absence of any external examination, the maintenance of standards in different schools is expected to become a difficult problem. It has been partly met by instituting a system of accrediting agencies and by the College Entrance Examination Board. The accrediting agencies certify schools as institutions carrying on adequate programmes of education after inspecting the courses of study, equipment and personnel of the schools. The College Entrance Examination Board serves as a voluntary agency to promote co-operation between secondary schools and colleges and indirectly helps set up uniform standards for secondary schools and for admission to colleges.

In Great Britain where external examinations have been in vogue for a long time, there has recently been a marked tendency towards the decentralization of examinations. The Committee of the Secondary Schools Examinations Council (27: 33) observe:

In our view the time has passed when such guidance and direction as teachers need can best be given by means of an external examination. To retain a profession in leading strings is to deny it the chance of growing up to responsibility, with resulting harm to itself and to those who depend upon its services.

Raymont (121) after discussing the pros and cons of external and internal examinations concludes that an external examination in which the teaching and examining functions are completely separated should be replaced by an internal examination.

Norwood (112) supports decentralization of examinations on the basis of the changed system of education under the Butler Act, which makes provision for all children's education up to the age of sixteen. He lays down the following rationale for his support:

As the majority of children learn through the use of

their hands, eyes, and ears, more surely and quickly than through reading the printed page, it is very hard to devise any form of external examination which can test the acquisition of such skills. Certainly no written test like that which has hitherto been known as the School Certificate is appropriate in the changed situation.

The most recent Report of the Secondary School Examination Council (123) promises greater freedom and more responsibility for teachers. Its emphasis is upon the school as being the guardian of its own standard, instead of its continuing servitude to external assessors. It allows only a limited usefulness to external examinations and would confine them to students who have followed courses substantially beyond the statutory minimum school age, particularly those who seek exemption from professional or university examinations.

The New Education Fellowship (109) report unanimous dissatisfaction with examination systems in various countries and a general realisation of the need for decentralisation of examinations.

(c) *Non-selective nature of examinations.*

In America, secondary education has been non-selective for a long time. A pupil who completes his course in the elementary school is promoted automatically without a further entrance examination to high school. With certain reservations the same is true of students proceeding from high school to college, particularly in those States—and they constitute the majority—where the college is a part of the public educational system.

This educational organization has not eliminated the problem of examination, but has certainly limited its functions and forms. Examinations are generally of the objective type, and controlled internally as pointed out above. They are supplemented by other means of evaluation, e.g., teacher ratings, questionnaires, observations, interviews, etc.

Even in England, where secondary education has always been highly selective, after the enactment of the Butler Act of 1944, emphasis on the selective function of examination is lessening, and elementary and secondary system of

education are tending to grow closer together so as to be integrated into one organized system.

(d) *Testing programmes on a large scale.*

Contradictory as it may seem, there is a growing tendency in the U.S.A. to adopt nation-wide or state-wide testing programme to effect economy and efficiency in administration and to help establish national and regional norms.

Davis (4: 61) recommends a regional evaluation of educational outcomes, for he thinks that schools and individual classes could thus identify their position with regard to their attainments as compared with other institutions and adopt appropriate remedial measures if they can.

Moreover, testing programmes on a state or regional basis have become necessary because of the increasingly large number of candidates seeking admission to colleges and the huge percentage of failures in the freshman year.

Sangren (131) reports that in 1933 there were State testing programme in twenty-three States of the Union. Most of the State testing programmes are under the direct supervision of the State University or State Department of Public Instruction. He enumerates some other organisations that are conducting national testing programmes as follows:

The Educational Records Bureau; the Co-operative Test Service (subsidized by the General Education Board); the College Entrance Board; the Kansas Teachers College Bureau of Educational Measurement (supervising a nation-wide scholarship test twice a year); the American Council on Education (sponsor of the construction of a new edition of the American Council of Psychological Examination); the Psychological Corporation (conducting a national survey of English usage which has been made a state programme in Pennsylvania and Ohio).

Kandel (72) describes that twenty-one States conduct State-wide examinations to determine the eligibility of elementary school leavers for admission to high schools. In most instances, however, the State authorities only prepare the examination questions, the conduct of the examinations and the marking of the papers being left to the teachers in each school under the supervision of a local official.

Segel (134) mentions that the following tests have more than a State-wide influence:

The Kansas Nation-wide Every Pupil Scholarship Test; the New York Regents Examination; the Iowa Academic Contest; and the Ohio State University Intelligence Examination.

Two of the important testing programmes are outlined below:

### (1) THE IOWA TESTING PROGRAMME

The Every-Pupil-Testing-Programme in Iowa conducted under the co-operation of the College of Education and the Extension Division of the State University is rather an instructive enterprise in the field of large-scale testing.

The same tests are given on the same day in the co-operating high schools to about 40,000 pupils and norms are established each year on the basis of the results from all the schools.

(i) *Objectives of the programme.*—This programme lays its emphasis on the aspect of pupil guidance. Segel (136) says it is based on the following objectives:

- (1) to enable teachers, administrators, and counsellors to keep themselves more intimately and reliably acquainted with the continuing educational development of each individual pupil, in order that instruction and guidance may be better adapted to his peculiar and changing interests, needs and abilities; and
- (2) to provide the school administrator with a dependable and objective basis for the overall evaluation of the total educational offering of the school, in order that any need for curriculum revision may more surely be brought to his attention, and that his supervisory efforts may be more wisely distributed.

(ii) *Scope of evaluation.*—The Iowa tests attempt to measure the following fundamental abilities of pupils in the secondary schools:

- (1) Understanding of basic social concepts.
- (2) Ability to do quantitative thinking.
- (3) Ability to write correctly.
- (4) Proficiency in natural sciences.

- (5) Ability to interpret reading materials in social studies.
- (6) Ability to interpret reading materials in natural sciences.
- (7) Ability to read literary materials.
- (8) Ability to use important sources of information.
- (9) Ability to recognise important word meanings.

The scope is fairly wide and comprehensive, so far as the evaluation of the knowledges and skills gained through subject matter are concerned.

(iii) *Advantages of the programme.*—Lindquist (82) describes the advantages of the Testing Programme as follows:

- (1) Economy and efficiency in administration, economies in printing, distributing and administering of tests; in scoring, analysing and reporting the results.
- (2) Ease in try-out of new test materials.
- (3) Economical standardization and establishment of norms on the basis of large-scale testing.
- (4) Certainty with regard to comparability in test results from test to test and from year to year showing growth of pupil achievement—establishment of standard scores based on the same population.
- (5) Creation of a feeling of belongingness in schools, because of the homogeneity of the schools involved—added motivation and satisfaction which the schools derive from participating in a truly co-operative project.
- (6) Elimination of the clerical and statistical burden in the administration of the testing programme on the part of the schools.
- (7) Economy of time in administering tests, the whole programme taking about seven hours in all.

(iv) *Financial implications of the programme.*—Limitations of schools with regard to funds for the testing programme do not stand in the way of Iowa Programme. Lindquist (82: 97) states the following in this connection:

The cumulative effect of all the economies mentioned has been such that we have been able to provide each pupil with nine tests averaging fifty minutes in length, to score and rescore all papers for the schools, prepare four or more copies of an individual profile card for each pupil, tabulate, analyse and report the results for each school, provide



each teacher and administrator with a comprehensive pamphlet of suggestions for the interpretation and use of the tests, establish unusually dependable and specialized norms, as well as finance the construction of new test materials—all at the single all-inclusive charge of 25 cents per pupil. This, of course, is only a fraction of what would ordinarily be charged for nine test booklets alone.

It does not, however, include the cost of the services of the programme director, the rental of the space in University buildings. For these and other reasons, the true cost of a service of this kind might, in other situations, exceed twice the figure I have just given.

## (II) THE CO-OPERATIVE TEST SERVICE.

This organization was established in 1930, under the supervision of the Committee on Measurement and Guidance of the American Council on Education. In the first instance, a ten year plan of test-construction was chalked out.

It has done remarkable work in bringing out adequate tests for secondary schools and colleges. It goes on changing its tests from year to year on a comparable basis. Tests produced by this organization are widely used throughout the States. Some agencies like the Education Records Bureau which carry on testing programme on a large scale prefer these tests to all others.

In the beginning it was apprehended that these tests might, like the traditional examination, exercise a constricting influence on education and instruction. But this fear has not been justified by experience, because according to Kandel (72) the tests of the Co-operative Test Service “in most of the subject-matter fields are based largely upon certain fundamental common aspects of the subject-matters which are widely recognized as important elements of achievement in those fields, and therefore worthy of being measured.”

### (e) *Test construction as a co-operative undertaking.*

There is manifest a growing realization of the need that the work of test construction cannot be adequately accomplished by individual experts alone, however efficient they may be. It has to be done in co-operation with a number of

people who are concerned with education. The Co-operative Test Service is a pointer in the right direction. The Committee on Review of Testing Movement of the American Council on Education (3) express the need for such co-operation as follows:

The ultimate solution of the examination problem in the achievement field requires a combined attack on the question in which specialists in subject-matter, specialists in measurement and many others concerned with education of the child all participate . . . Responsibility for the content of tests should rest with subject-matter experts.

(f) *Use of tests for various purposes.*

Now tests are being used for many other purposes besides assessing achievement in academic subjects. Stenquist (147) enumerates a number of uses as follows:

1. Determining and evaluating administrative policies, including the classification of pupils, provision for individual differences, standardization of teacher's marks, curriculum construction and supervisory activities.
2. Setting up objectives and evaluating the products of the educational programme.
3. Evaluating methods of teaching.
4. Improving learning through a discovery of learning difficulty, the source of motivation, and the uses of self-teaching materials.

Keys (77) in his study describes several uses of intelligence tests including their use in occupational studies and vocational and clinical guidance. But he concludes:

Few psychologists today look to an individual's score on an intelligence test, alone and of itself, to determine the source of his difficulties or indicate the exact solution to his problems.

Some of the special uses of the tests, other than the assessment of pupil achievement, are noted below:

(i) *Predictive value of tests.*

A number of tests have been made in America as well as England for use in predicting success in different fields.

There are a number of studies varying in their conclusions as to the adequacy of these tests.

Kandel (71) emphasizes the importance of the Pennsylvania Study inasmuch as it shows the way how abilities and capacities of students can be identified earlier and more adequate provision can be made for differentiated treatment of students in the assignment of programme of study.

Davis (4: 33 and 34) strikes a note of caution in making use of aptitude tests in a democratic society. He asserts:

Scientific procedures for identifying and measuring aptitudes must not be used to classify students arbitrarily and to direct them into fields of endeavour calculated only to permit them to work efficiently. Instead these procedures should be used to advise and to guide students to make wise educational and vocational choices in the light of valuable data that scientifically constructed instruments are capable of making available to them.

Davis (4: 35), further stressing the national importance of identifying all sorts of abilities, says:

Information gathered in the armed forces demonstrates conclusively that for some essential occupations verbal abilities are not particularly important. Highly specialized talent for designing and operating machinery may be largely unrelated to verbal abilities, it may be of greater social importance in the modern world to develop talent of this sort than to develop literary talent.

He (4: 39) indicates that combinations of highly specialized aptitude tests are more effective for purposes of educational and vocational guidance than tests of general intelligence or general learning ability.

Ballard (9: 289-294) criticizing the predictive value of the Free Place Examination refers to the research carried on by Valentine who found a correlation of only .40 between the order at the Free Place Stage and the order at the School Certificate stage. He explains this low correlation by the fact that in the examination, scholastic attainment is the real selective factor, whereas native ability is the alleged selective factor.

McClelland (93) in his study concludes that prediction of the success of an individual pupil in the secondary course

on the basis of examination and tests cannot be made with any reasonable certainty.

(ii) *Diagnostic value of tests.*

When the results of the general tests show that some objective of instruction is not being achieved, systematic methods of determining the reasons for unsatisfactory outcome must be undertaken. One essential tool of such a procedure is the detailed diagnostic test by means of which the specific element that is at the root of the difficulty may be discovered.

The Thirty-fourth Yearbook of the National Society for the Study of Education gives a detailed account of the techniques of diagnosis. Brueckner (107: 131-154) outlines them under the following six heads:

- (1) Observation of the pupil at work on ordinary daily assignments or in standard situations.
- (2) Systematic analysis of various characteristics of the pupil's written work.
- (3) Systematic analysis of the pupil's oral responses and reactions.
- (4) The use of objective analytical diagnostic devices to determine by comparative methods precisely and in detail the faults the work of the pupil exhibits.
- (5) The interview either with the pupil, his family or others of his social group to locate contributory conditions.
- (6) Laboratory procedures.

Diagnostic tests, probably by themselves, cannot succeed in identifying the real cause of weakness, but they can certainly go a long way to discover the nature of the weakness. If one can supplement the information obtained by their use with that gained through other techniques mentioned above, diagnostic tests will prove powerful tools in the effective education of children.

(iii) *Guidance value of tests.*

Ryans (5) emphasizes the necessity of using tests for guidance of the pupils. He defines guidance as "the assistance of the individual through the use of scientific procedures and ascertained facts, to plan and pursue his

education and life in the light of his aptitudes, past achievements and interests and also, in the light of attested and recognized values." The individual should know his abilities and aptitudes as well as limitations and requirements and demands made by courses of study, professional or occupational practices or other activities with which he is concerned. If guidance is to be effective, the decisions have to be taken by the individual himself. The study of Bingham (12) also points in the same direction.

(iv) *Selective value of tests.*

Enlightened public opinion both in America and England is not in favour of the tests being used as selective instruments, so far as the education up to the secondary stage is concerned. Kandel (70) summarizing the opinions of the educationists from various countries who participated in the International Examination Inquiry upholds that the crucial problem is not primarily one of selection but of distribution of education according to aptitudes and abilities.

The Association of Education Commissions and the National Union of Teachers (7: 233 & 234) express doubt about the validity of the selective examination at the age of 11, for they believe that specific abilities and interests are not sufficiently differentiated at such an early age except in rare instances such as music and art.

(v) *Social value of tests.*

The International Examination Inquiry lays equal stress on individual and social aspects of examination. Kandel (70: 66) says:

The one solid contribution which comes out of the European inquiries is that the technical, psychological and statistical studies of Examinations are as much concerned with the needs of the society as of the individual and that these studies must remain meaningless unless they are guided by a philosophy of educational values and purposes.

To sum up, the major trends in examinations in the U. S. A. and Great Britain are as follows:

1. Any one examination is not considered adequate in evaluating the outcomes of education. There is a growing realization of the need to evaluate different aspects of pupil

behaviour by various techniques and entering all the information thus gained into a cumulative record card of pupils for ready reference and future guidance.

2. External examinations are regarded as unnecessary and even harmful. Examinations are, therefore, being decentralized even in Great Britain, which has a relatively centralized system of education.

3. The selective function of examination is being minimized and the guidance function is being stressed.

4. Testing programmes tend to be organized on a large scale for the sake of economy and efficiency even in the U. S. A., which has a relatively decentralized system of education.

5. The work of test-construction is regarded as a co-operative undertaking, in which both test technicians and subject-matter experts should participate.

6. Tests are used not only for assessing achievement but for the purposes of prognosis, diagnosis, guidance and selection.



PART II

THE PROPOSALS







## CHAPTER VI

### REORGANIZATION OF THE EXAMINATION SYSTEM

In the preceding chapters a survey has been made of the present examination system in India, its defects and recommendations for its reform, as well as of the current practices and modern trends in examinations in two of the Western countries, namely the U. S. A. and Great Britain.

On the basis of the foregoing survey, this chapter will attempt to formulate a few proposals for the reorganization of our examination system, so that it may help rather than hinder the development of education in India along the lines which have been suggested in the opening chapter.

For this purpose the following points will be borne in mind:

1. To make examinations useful tools for the attainment of the wider educational objectives, they have to be changed in their techniques and scope so as to cover as many dimensions of pupil behaviour as possible.

2. Examinations like all other items of education will have to be devised with due consideration of both individual and social needs.

3. As the needs of a community go on changing with transformations in its structure from time to time, no fixed and rigid pattern of examinations, howsoever comprehensive, can be laid down for ever. The examination system must be flexible enough to adapt itself to the emerging needs of the community which it is designed to serve, rather than tend to standardize certain human relationships and thus help to maintain the status quo, as has been the case in the past.

Reorganization of the examination system cannot be effective without making necessary changes in the curriculum. Hence the following section will deal with this problem.

## 1. EXAMINATIONS AND CURRICULUM

The problem of examination is closely bound up with that of curriculum, and of the meaning of education both for the individual and the society. So for a profitable re-organization of examinations, a reconstruction of the curriculum is a precedent condition.

### (a) *Basis of new curriculum*

(i) *Adaptability to individual needs.*—The first and foremost consideration in reconstructing our curriculum should be the fact that educational opportunities have now to be provided for all the children both in the elementary and the secondary school. As children differ in their capacities, aptitudes and interests, a single stereotyped curriculum cannot equally suit all. Therefore, these opportunities must be defined in terms of the abilities and interests of those whom they are intended to benefit. Hence the need for diversified curricula.

(ii) *Emphasis on co-operative endeavour.*—Co-operation is the basis of democracy in practice. In democratic interaction the purposes and the programmes are decided upon and laid out by the whole group, after taking into consideration the needs of all the individuals who comprise it. In this process of investigation, each individual has much “to give and take” and must be willing to modify his previous beliefs and judgments, so that the group derives a new purpose and programme. Democratic co-operation in no way suggests coercion. It rather involves that the individual, of his own free will, chooses to accept a certain type of discipline in the interest of group life. Only as group demands and individual concerns are united in educational objectives, can education become an experience of vital significance.

This principle suggests pupil participation in the matter of curriculum construction. It also ensures a co-operative basis of working for common purposes. The more the individuals learn to respect each other in their struggle to achieve worthwhile ends, the higher is the quality of interaction and achievement.

(iii) *Relation to community needs.*—The curriculum which

has tended to concern itself with the heritage of the past and to be divorced from community problems and community life has to change very definitely in the direction of laying emphasis on the community needs. The heritage of the past should serve as a functional means of gaining insight and understanding about life activities. What was previously regarded as an end should now become a means. School programmes should be based on life-situations. Thus learning will become more meaningful and usable.

(iv) *Emphasis on experience.*—The new curriculum has to look for its direction in the learning situation itself. True learning is experiencing. Therefore curriculum should be based on a series of purposeful experiences growing out of pupil interests and moving toward an ever more adequate understanding of and intelligent participation in the surrounding culture and group life.

In such a curriculum, habits are evolved normally as a part of the process, and skills are developed wherever need arises.

It is obvious that the experience-curriculum cannot be limited within the four walls of the school. For this, the school would function as an integrating factor among all other agencies of education operating in the community.

(v) *Integration of subject matter.*—A curriculum based on the principles outlined above would hardly admit of compartmentalization of subject matter. Materials from several courses or fields will have to be correlated and integrated around a group problem or need. Subject matter thus assumes the role of a means rather than an end of instruction.

#### (b) *Objectives of curriculum*

For the reorganization of elementary school curriculum the six cardinal objectives laid down by Wrightstone (171:IV) may prove helpful:

- (1) To understand and practise desirable social relationships.
- (2) To discover and develop individual aptitudes.
- (3) To cultivate powers of critical thinking.
- (4) To appreciate worthwhile activities.

(5) To gain command of the common integrating knowledges and skills.

(6) To build sound physical and mental health.

Similarly for the secondary schools, Wrightstone (172) suggests that the curriculum should aim at creating the following:

(1) Working skills for obtaining facts and materials.

(2) Organizing facts and data.

(3) Interpreting facts and principles.

(4) Applying facts and principles.

(5) Civic beliefs and attitudes.

(6) Science beliefs.

(7) Self-initiated, co-operative and recitational activities.

It is hoped that a curriculum based on such principles can help produce better results than the traditional curriculum laying its emphasis on the memorization of subject matter. This expectation is justified on the basis of experimental evidence. The eight-year study conducted by the Progressive Education Association (117:117) on a large scale, in which thirty high schools participated and about two thousand students were involved, points out:

Many roads lead to college success. It does not depend upon the study of certain subjects for a certain period in the high school. There are many different kinds of experiences by which students may prepare themselves for successful work in college.

Still further, the study concludes that the graduates of the thirty schools stood higher as compared with their matched peers who had taken the prescribed traditional courses in ordinary high schools, and had undergone the same training in college. It is interesting to note that the scores of the former group were higher than those of the latter not only in such non-academic aspects of behaviour as interest in international affairs, orientation towards choice of a vocation, participation in organized group activities, taste for fine arts, resourcefulness in meeting new situations, etc., but also in purely academic achievement. For instance, they earned higher grade averages in all subject fields, except foreign languages, and more academic honours each year; they were more often judged to possess a high degree of intellectual

curiosity and drive ; and they were considered as more precise, systematic and objective in their thinking.

(c) *Evaluation of curriculum outcomes*

Change in curriculum and evaluation are complementary aspects of true experimentation. Evaluation must, therefore, be made in terms of the objectives towards the attainment of which the change is designed to contribute. The programme of evaluation should not be limited to a few isolated goals, but should include important aspects of all major objectives.

For the purpose of appraisal, each of the objectives should be defined in terms of various kinds of pupil behaviour which provide evidence of progress. Thus each objective should be subdivided into several component parts or aspects. These parts or aspects are the functional units to which tests and other measures can be applied to assess changes in pupils.

However, the curriculum of a school should in no case be dominated by external sources. The admission plan of a higher institution should never fix the content or organization of the lower institution. The eight year study suggests that if a college insists on an entrance examination, it should be such as does not presuppose a particular pattern of content. It may be of the type of the Comprehensive English Examination of the College Examination Board.

If these conditions are fulfilled, then a rapid progress in education may be expected as is forcefully expressed by the Progressive Education Association (117:124) in the following words:

The static frozen pattern of subjects and credits would disappear and secondary education would move ahead with other dynamic forces towards the achievement of a greater democracy.

The same is true, even with greater force, in India where examinations have overpowered the whole educational system.

## 2. OBJECTIVES OF EXAMINATIONS

What should be the objectives of examinations in India is a question which is closely related to what our plan of education ought to be like. It has been pointed out else-

where that we still do not have anything even approaching a universal compulsory elementary education and our secondary school caters only for a negligible minority. The official plan of the Government of India for post-war educational development is certainly a progressive step inasmuch as it recognizes elementary education as a prior public concern that is to be looked after by the Government. But in this plan, secondary education is proposed as a highly selective stage, and for this selection some machinery has been suggested. This proposal is essentially based on a concept of 'elite'.

For this reason, one of the objectives of examination would be the selection of an elite for higher education beyond the elementary stage. Probably it is useful to look at this question in the light of the discussions held at the Eastbourne Conference of the International Examination Inquiry. Burns (64:227) makes some fruitful remarks in the course of this discussion. He says:

Elite is an eighteenth century conception of a society in layers. Democracy is not a levelling up to an elite, it is an articulation of different functions on levels that are equally important. Our examination system lifts up the top of each functional group and connects the functions only at the top. That will not do in a modern civilization.

He further maintains that in modern times there is a very grave distrust of the elite which is supposed to be running the world. Now we need a new type of person in every section of community life, who shall be a functional unit and an integral part of our society. But on the contrary, our standards in regard to the type of person we want to produce and to the tests we are applying are very antiquated. The old-fashioned idea that it is necessary to skim off the cream into a group which shall hang together at the top is a fatal mistake. What is needed is tests of competence in different spheres of human endeavour.

Therefore, there is a need of a new kind of examination system based on the assumption that we want a distribution of social functions within each section of society. Burns (64:233) further goes on to say:

It is much less important to see who is at the top and

who is at the bottom. There is no top and bottom really ; society is simply an interlocking of certain structures—almost organic structures—in regard to which you cannot say that one part of the structure is purely directive and the other part is purely instrumental. That distinction has gone out. Command and obedience are useless in the contemporary world. Advice and criticism and the ability to use them are important.

One may, or not agree with all that Burns says regarding the selective function of examination. It can at least be generally admitted that for the maximum development of society, we must use our entire human resources, and for this purpose the classification and development of all available talents are much more profitable than the selection of a few so-called higher talents.

Keeping this broad picture in mind, (the two main objectives of examination may be named as evaluation and guidance. As a matter of fact, these two objectives are not separate from each other. They are really interdependent. Guidance is impossible without proper evaluation and evaluation has little meaning in itself, if it is not used for guidance.

#### (a) Prerequisites of evaluation

(1) The first essential of an examination is that it should measure something worth measuring. It involves the whole question of the objectives of education, *i.e.*, what type of human being is intended to be created through education.

(2) The objectives must be defined and specified in terms of pupil behaviour, which should be measurable as directly as possible.

(3) The subject matter, experiences and procedures by which these objectives can be achieved should be specified.

(4) Such techniques and procedures should be devised as to enable one to obtain evidence about the realization of these objectives.

#### (b) Purposes of evaluation

Among the purposes of evaluation, the following should be included, as described by Lorge (85):

(1) The degree to which the specified objectives are attained by an individual or a group of individuals.



- (2) The modification of the objectives based upon the known achievement and performances of the individuals.
- (3) The modification of the educational means of content, experiences, and methods to aid in the achievement of objectives.
- (4) The development of a programme of selection of individuals for specified interrelated objectives.
- (5) The utilization of information gained during the inspection and the selection of individuals in giving adequate guidance.
- (6) The utilization of information gained during inspection and selection for diagnosis of defects, and their therapy.
- (7) The utilization of educational means of content, material and organization for the diagnosis of the needs of faculty and staff.

To the list of objectives given above, one more objective might be added:

The provision of a sound basis for parental and public relations by information as to what their own children and school were achieving.

(c) *Evaluation as basis for guidance*

Evaluation should be put to the use of serving the ends of guidance in the following way:

- (1) Helping pupils to discover interests and to form accurate judgments relative to the extent of their abilities in different types of activities.
- (2) Helping pupils to select the activities in life in which they will participate and in which there is large promise of success and happiness for them.
- (3) Helping pupils to plan an educational programme which will best prepare them for their chosen activities giving appropriate recognition to the need of education for the social, recreational, health and vocational activities.
- (4) Facilitating the adjustment of the pupils in their activities in and out of school so that they will attain maximum achievement and happiness and not to be disturbed by social and personal maladjustments.

It is obvious that for the evaluation and subsequent guidance the results of examinations and tests alone would not suffice. For this purpose, a comprehensive record of various phases of pupil personality is needed. It must include not only the intellectual and academic capacities and abilities but information about the health and physical conditions, the social and economic background, the character and everything that goes to make up an individual's personality. Only when such a record is maintained over the whole period of school years, is guidance possible with any reasonable degree of certainty for success.

### 3. CUMULATIVE RECORD

#### (a) *Purpose*

The purpose of the cumulative record is twofold as given by Earle (35):

- (1) To exhibit changes in the rate of progress whereby, having regard to temperamental and other influences, adjustment can be prescribed and applied without undue delay.
- (2) To give information regarding speed and efficiency of learning in different aspects of the educational environment by means of which natural aptitudes may be assessed.

#### (b) *Difficulties*

Cumulative record presents two difficulties:

- (1) What should be its contents is a problem on which agreement is needed, but it is not so easy to achieve.
- (2) It is difficult to equate the records received about a pupil through different sources.

#### (c) *Criteria*

The model Cumulative Record Card, according to Kandel (71), should be based on the following criteria:

- (1) It must show trends of development of abilities and interests.
- (2) It must provide accurate measures and concrete observations.
- (3) It must provide a means for recording measures and observations in comparable and meaningful terms,

wherever such measures are available, but must at the same time provide for convenient recording and clear differentiation of whatever measures, subjective and non-comparable, may be available.

- (4) The data should appear in a form and order capable of showing their interrelations and thus presenting a coherent and integrated picture of the individual.
- (5) It should be capable of quick reading, hence it should be in graphic form in so far as possible.
- (6) It should be fairly complete for the large mass of "normal" children, requiring auxiliary cards only for extremely atypical subjects, mentally or physically.
- (7) It should be reproducible, inexpensively, accurately and quickly, such as by photostating.
- (8) It should be accompanied by a carefully written and amply illustrated manual of directions.
- (9) It should be administrably convenient, showing all available information on one continuous record form and permitting the collection of further data, by auxiliary cards and otherwise for current use (in connection with the previous record) and for periodic sifting and entering on the permanent record.
- (10) Since all the officers of the school that have to deal with students should have access to all the information that is available on each student everywhere in the school, it follows that the principal's record and the teacher's record should be duplicates so far as information of permanent significances is concerned.

The interdependence of the cumulative record and the testing programme is so important that it cannot be over-emphasised. All test findings concerning each individual pupil should be recorded properly on his cumulative record card.

#### (d) *Contents*

A cumulative record card should contain information on the following items:

- (1) Name, sex, date of birth, parentage with address.
- (2) Height, weight, photograph.
- (3) School grade achieved, school grade attended, schools attended.

- (4) Record of attendance and absences, causes of absences.
- (5) Chronological age, mental age, intelligence quotient.
- (6) Scores in achievement tests, school marks, educational quotient.
- (7) Mental, emotional and physical experiences.
- (8) Extra-curricular activities, athletic and non-athletic, clubs and offices.
- (9) Discipline.
- (10) Unusual experiences.
- (11) Vocational experiences, vocational and professional preferences. Educational plans.
- (12) Interests reported.
- (13) Special defects
- (14) Health, mental hygiene, social adjustment.
- (15) Home conditions.
- (16) Personality ratings.

Information on these items should be recorded for each calendar year in such a way that the progress of a pupil can be traced easily across the record form.

(c) *Need for adaptation*

Several cumulative record forms have been evolved in the U.S.A. and England. The National Committee on Cumulative Records (161) and Allen (1) provide a detailed description of the cumulative record. Two of the important forms are being used by Educational Records Bureau (New York), and Kent County Schools (England). These forms may be adapted for use in our schools with necessary modifications. The cumulative record is a tool which should be adjusted to fit the individual school system. Only those items should be put into the cumulative record which a school system can possibly use. The National Committee on Cumulative Records of the U.S. Office of Education (161) are of the opinion that the installation of an elaborate cumulative record system is too costly to be undertaken without serious consideration being given to the adequate use and efficient maintenance of records.

(f) *Use of cumulative record*

The teachers' conference is the basic and most important feature of the programme of elementary and secondary

schools, where cumulative records are maintained as a background tool for furthering the guidance of child development.

The record data may be used for a number of purposes such as Allen outlines in his study (1:4—5):

- (1) To secure an over-all picture of the past experience of each student.
- (2) To facilitate the study of exceptionally able and exceptionally handicapped children.
- (3) To help a teacher determine the characteristics of a group of his students.
- (4) To aid in discovering the extent to which students are progressing toward the objectives which the school has accepted.
- (5) To provide data essential to an adviser when he attempts to aid students in selecting curricular and extra-curricular experiences and when he endeavours to promote their social health, educational and vocational adjustment.

#### 4. KINDS OF EXAMINATIONS NEEDED.

In spite of the fallibility of examinations, we need them. For, they do help us know children better, and so aid us to guide them more effectively. Examinations could have been done away with, if it were possible to evaluate the achievements and aptitudes of the individuals on the basis of intimate acquaintance. But in huge schools, as we have today, this is not possible.

There is a need for both types of examinations—objective and essay-type. For certain purposes essay examination is suitable, while for others an objective test serves better.

All material which relatively needs to be memorized, whether it consists of separate items of concrete information, exact verbal definitions, conventional devices and forms for the representation of massed data, or even definite patterns of relationship in terms of the material of the course, can be more accurately and more quickly tested by means of the objective-type than the essay-type examination.

The objective test can also to a certain extent help in measuring the application of ideas learned in the course to materials not encountered in the instruction, or the ability to apply these ideas to new material.

Those outcomes of instruction which are more closely connected with attitudes of understanding and of appreciation, and creative expression can be better tested, so far as they can be tested at all by an examination, by means of an essay-type question than by an objective test. Moreover, essay-examination is a better tool for evaluating the abilities to organize, to analyse and to interpret the learnt materials.

#### (a) *Practical tests*

For the evaluation of the wider objectives of the curriculum as outlined before, written examinations alone, whether objective-type or essay-type, will not do. A curriculum which lays its emphasis on productive work and collective projects demands some techniques to evaluate this practical aspect of education. We shall, therefore, need tests to measure the following:

- (1) Outcomes of a collective project at different stages in its development.

- (2) Sociability and adjustment of individual participants to the group in action.

- (3) Individual efficiency in subjects which are not examinable by means of written tests, e.g., craft, art, music, practical sciences, etc.

For this purpose, rating scales should be evolved so as to make evaluation of the knowledges, skills and attitudes involved in carrying out the activities concerned, possible.

#### (b) *Objective tests*

We need objective tests for several purposes, e.g. measurement of achievement, intelligence, prognosis, diagnosis, etc. They can also be used for discovering interests and attitudes to a certain extent. We need them primarily for appraising the outcome of instruction in various subjects, for measuring intelligence and also for finding out the aptitudes of individual pupils.

(i) *Achievement tests*

In measuring achievement, we must first have the objectives or specifications of the course stated in a language which will make measurement possible. The ideal formulation of an objective, in the opinion of Chicago University Board of Examiners (24), is a precise statement of just what operation the student should be able to perform on specified subject matter. An objective stated in this manner constitutes the basis for a test-item. If all the objectives were so stated, an adequate examination would consist of a sampling of these items.

In the construction of an achievement test curricular validity is the most important thing to be kept in mind. For this purpose the test must satisfy the following conditions:

- (1) Measure some specified ability.
- (2) Be based on the curriculum students have been following.
- (3) Represent a fair sampling of the subject.
- (4) Be limited to the more important aspects of the subject—topics which fit the main objectives of the course and have the greatest residual social value.
- (5) Have clear unambiguous language.
- (6) Encourage students to do their best.

The tests must be standardized on the basis of a representative population and comparable norms established from subject to subject. From the point of view of individual guidance, the lack of comparability in the norms from subject to subject is a greater deficiency than the failure of these norms to be representative of current groups. Moreover, for certification and transfer purposes, comparable measures are indispensable.

Standards must be based on the stability of the point of reference and of the units in terms of which variations from the point of reference are reckoned. They must, of course, have demonstrable educational and social meaning.

(ii) *Intelligence tests*

We need individual as well as group intelligence tests of both type, verbal and non-verbal. The individual intelligence test will be needed for a careful measurement of

intelligence in extreme cases. The Stanford Revision of the Binet Simon Scale can afford a sound basis for constructing such a test. This test has to be made available in all the major languages of India with separate norms for different linguistic regions. A few versions of the Stanford Binet have already been made in India. They should be published and made use of, and in the light of experience necessary modifications should be effected. In evolving a new test the following suggestion of Menzel (96) will prove useful:

Educational standards and practices cannot be imported from other countries without thoroughgoing modifications and adaptations which take into account the handicaps and advantages under which Indian pupils work.

For measuring the intelligence of children coming from economically and socially backward communities, nonverbal tests of intelligence will be needed. They should be pictorial and performance in type, taking due consideration of the peculiar conditions of the social and physical environment.

### (iii) *Aptitude tests*

Aptitude differences fall into two distinct classes:

- (1) The trait being constant, the individuals differ in the amount of it possessed by each—individual differences.
- (2) The individual remaining constant, the magnitude of his different traits differ—trait differences.

The first class of differences forms the basis of selection, while the second class is concerned with guidance. The latter are for the majority of pupils of far greater significance than individual differences.

Trait differences may be estimated on the basis of aptitude tests. We need them for identifying the capacities and inclinations of pupils for different types of activities both educational and vocational.

The preparation of a test battery for use in vocational guidance is a more ambitious project than the preparation of a test of fundamental academic aptitudes, because the mental and motor skills utilized in a wide range of occupations is probably far greater than that utilized in the more common subject-matter fields. Therefore, more care and



technical ability will be needed while preparing vocational aptitude tests.

For the prediction of success in a typical school programme of studies, probably no specific aptitude tests will be necessary ; but for predicting vocational success they will be needed. Toops (154) reports:

Thorndike and his associates in an intensive follow-up study of children found out that, in general, school grades reached, scholarship marks, intelligence test scores, or any combination of these, predict later success in school fairly well, but they are faulty predictors of vocational success to be achieved by the age of 22.

Vocational aptitude tests will have three main forms:

(1) Verbal, (2) Pictorial, (3) Performance. The first two forms relate to the information about the vocation, while the third is directly connected with the skill needed. Therefore, the last is the most important and valid form.

### (c) *Essay examinations.*

In spite of the increasing use of objective tests, essay examination will have its rightful place in the process of evaluation. It will be needed almost in every subject to assess the ability to reason coherently, to organize and interpret the materials in a meaningful way and to apply the knowledges and skills to new situations. But examination will have to be improved in respect of its validity and reliability. Quite a considerable improvement can be effected, if the following steps are taken:

(1) Secure a greater agreement of content of examinations with recognized educational objectives.

(2) Minimize constant errors of the present system in assigning different classes or divisions arbitrarily in terms of fixed percentages of the total marks by means of a standard distribution of classes or divisions along the normal frequency curve.

(3) Reduce the magnitude of variable errors of measurement in examination scores by the adoption of rules which will bring about greater uniformity in preparing and administering examinations.

(4) Scale questions in difficulty in such a way that every candidate can find his own level in a given amount of time.

However, weighting of questions is unnecessary, as is shown by Stalnaker (145), who found almost perfect correlation between weighted and unweighted scores.

(5) Provide for a broader sampling of subject-matter by the use of a larger number of questions on various areas of information regarding the subject. All the questions must be compulsory, as has been brought out by the study of Meyer (97) who contends that choice in the selection of questions to answer is indefensible in essay examinations, as it tends to bring down both reliability and validity.

### 5. USES OF EXAMINATIONS.

The expense of time, money and energy over examinations can be justified inasmuch as they are made use of in raising the standards of instruction and in achieving the objectives of education.

#### (a) *Instructional uses.*

Examinations can be used for promoting learning process both at the elementary and secondary stage. Jersild (67) testifies the fact as follows:

We have seen that the mental activity enforced during a brief period of examination by means of specific questions is conducive to more effective learning in a subsequent period of study than is the mental activity involved in attending to narrative statements contained in a preliminary summary or a true-false test.

According to Lee (80) the following techniques seem to increase the instructional value of tests:

- (1) Giving of multiple choice and essay questions as pre-tests.
- (2) Using objective tests as assignments.
- (3) Informing pupils of their results on tests.
- (4) Making use of satisfying after-effects.
- (5) Having the pupils correct errors on their own papers.
- (6) Giving a number of short tests throughout the course.

#### (b) *Diagnostic uses.*

Achievement tests should be used for diagnosing the cause or causes of unsatisfactory achievement and adjustment.

For this purpose the teacher concerned will have to make a careful perusal of the test papers besides the inspection of test-scores. It may also be necessary to supplement the objective knowledge so gained by interviews with the pupil about the parts which offered him difficulty.

After the causes of weakness have been determined, it will be necessary to remove them wherever possible, and correct the situation. Usually this process of correction will take the form of remedial teaching. However, it may be noted here that there are often difficulties which cannot be corrected by improved instruction. Such difficulties may be due to home conditions, physical state or emotional disturbances.

(c) *Administrative uses.*

Examination results can be used for the following administrative purposes:

(1) To keep permanent and cumulative school records of pupil progress.

(2) To send progress-reports of pupils to their parents and to other schools and colleges, if demanded.

(3) To modify the individual and group-programme, if necessary.

(4) To classify pupils more homogeneously.

(5) To evaluate methods and materials of instruction.

(6) To carry on studies of growth in learning.

Homogeneous grouping or classification, which has been described above as one of the important administrative uses of examination, should be made not only in terms of the individual's achievement but also of his brightness as indicated by his intelligence quotient, of his age, social adjustment and health. Pupils whose results are so low as to indicate that the work of the ordinary classroom cannot be of any use to them, should be examined thoroughly as possible candidates for classes of mentally retarded pupils. However, these groupings should in no case be rigid. Each term, or perhaps, oftener, regrouping will be advisable, according to the progress made by individual pupils.

The supervisor or administrator should encourage teachers to answer their own questions by experimentation rather than having them answered by anybody else. The super-

visor or the administrator should, however, advise the teacher as to how the experiment can be conducted.

(d) *Predictive uses.*

The question of predicting success in certain fields on the basis of the results of aptitude tests and other data directly leads to the more important questions of guidance, selection and classification.

(i) *Tests for selection.*

According to the blue print of the Post-war Educational Development in India, (18) we shall have to devise techniques for guiding pupils to select various types of schooling at the three main levels:

- (1) At the conclusion of Junior Basic stage or about the age of eleven plus.
- (2) At the secondary stage for various types of courses in high schools—academic and technical.
- (3) At the conclusion of high school for admission to higher institutions of learning—academic and professional.

For this purpose, we shall need among other things various kinds of aptitude tests at all the stages.

(ii) *Need for selection.*

In view of the present condition of educational development in India, it is expected that after putting the universal free and compulsory elementary education in operation, the number of applicants for entrance to secondary schools will exceed the number which the schools will be able to accommodate, at least for some time to come. In that case it will be necessary to adopt some method of selecting prospective students who are more fitted for secondary education than others. But some guidance of pupils in selecting the type of schooling is desirable and necessary on more important grounds than the limitations imposed by the size of the building or the inability of the State to provide education for all. Pupils should undertake a course in which they have a reasonable chance of success, and for which they are fitted by natural ability, temperament and inclination.

Even today, when there is only a small proportion of children in our secondary schools, the number of failures is appalling. This fact points to the need for better techniques of guidance. The remedy does not lie in the curtailment of the advantages of continued education, but in the further modification of curricula and instructional methods to suit the needs and capacities of different types of pupils and in the careful selection of pupils for the various courses available—academic, commercial, agricultural, industrial and professional.

(iii) *Selection for high school.*

Should a selection of pupils for secondary school be necessary, the smallest number of errors in predicting subsequent scholastic success will be made by the use of a combined Mother-tongue-Arithmetic examination and intelligence test. This conclusion is in general supported by various studies including those conducted and reported by Collman (26), Jorgensen (68), Emmett (38) and Earle (35). Almost everyone of them agrees that the best single predictive measure is afforded by the result of a good intelligence test.

The reliability of selection can be considerably increased by substituting, for the single examination, a series of tests separated from each other by some interval, say, four months. This suggestion is made on the basis of experimental findings, as reported by the Board of Education in their Memorandum on Examinations (13).

Here an important warning must be given. The results of the selective examination should, in no case, be used for the purpose of comparing school with school and the unhappy competitive spirit between schools arising from the anxiety to obtain as great as possible number of successes should be eliminated.

(iv) *Criteria of selective examination for High School.*

The success of the selective examination should be judged by two criteria:

- (1) The subsequent school careers of the students selected.
- (2) Its effects upon the free development of the Junior Basic School.

(v) *Selection for higher institutions.*

The selection of candidates for admission to higher institutions is a problem more or less similar to the one of selecting candidates for high schools, in its nature and implications. The clues given by the Home University Conference held in London in September, 1947 (123) can be utilized for such a selection in India too. The conference concluded:

- (1) In the first place, it is the duty of the secondary schools to decide who should be sent up to a particular type of institution, on the basis of the individual's record. However, if it is found later on that some schools nominate students carelessly, their names must be struck off the approved list.
- (2) Intelligence tests should be used, because, owing to pressure of numbers, detailed examinations and personal interviews are impossible. Tests of scholastic aptitude and achievement should also be given, if possible. In doubtful cases, however, school records and interviews must be used.
- (3) A large number of freshmen may be provisionally admitted and a proper weeding carried out at the end of the first year. But Prof. Thomson opposed this suggestion on the basis of experience in Scotland where a similar procedure in teacher-training had to be given up because of an outraged public opinion.

(vi) *Emphasis on guidance.*

It is an admitted fact that screening cannot take place fully during the period of pre-professional training or even at the time of admission to the professional school. An actual try-out in the professional curriculum may be necessary to determine the wisdom of a students' educational choice. It should be the goal of a guidance programme to lead the student who has chosen unwisely to change over to an educational plan consistent with his individual characteristics as early in his course as possible. On the positive side, prediction data should be useful in aiding the student to choose an educational objective by matching his particular talents with the abilities necessary for success in a given field of professional training.

(vii) *Preparation of entrance examinations.*

In the construction of entrance examinations for various types of institutions the following points laid down by Tyler (6: 6) should be taken into account:

- (1) If we seek to admit all who can profit from instruction, we need to identify those with serious limitations; hence the test items should in the main require only definitely essential abilities. If we are admitting only a fraction of the applicants and want these to be the most promising students, the test items should require more complex abilities and be discriminating at a higher level of difficulty.
- (2) We shall also have to make decision as to whether, for the type of work carried on in the institution, status at entrance or rate of progress, or both are helpful in predicting successful work.
- (3) An analysis has to be made of the general intellectual, manual, and social abilities and skills required for success.
- (4) It should be assessed whether the interests needed for the work exist to provide adequate motivation.
- (5) It should be found out whether habits, attitudes or emotional predispositions which are likely to block success are present.
- (6) Any desirable characteristics demanded by the institution should be appraised, in spite of the fact that they may not be essential for success in the work concerned.

(viii) *Social aspect of guidance.*

Vocational guidance in the last analysis involves a grave social problem. Without an adequate consideration of socio-economic conditions of a country, vocational guidance can make but little headway towards a solution of the most perplexing problem of employment. There are, however, a few fields in which guidance can be conducted with some promise of success; these fields are recognized as professions which generally require somewhat lengthy preparation.

However, there cannot be two opinions about the fact that the individual student should be protected against disappointment, disillusionment, and waste resulting from failure after

being admitted to an institution for professional preparation. Besides the interests of the society should be safeguarded against inefficient practitioners by the maintenance of adequate standards. Institutions for professional preparation thus have a two-fold duty and in addition, they ought to consider the waste of their own resources through failure to discriminate adequately between those who show promise and those who do not.

Here a note of warning must be struck. There is a tendency to consider the whole programme of selection in terms of the number of practitioners whose services are likely to be needed by society. This is surely a reasonable consideration in a country with a developed economy, based on national planning. But in a backward country like India where the provision and distribution of professional services is wholly inadequate and where the ever-expanding social requirements need more and more professionally trained men and women, this tendency is, to say the least, most unfortunate.

To avoid a consideration of this question means, on the one hand, a limitation of the number of candidates either to existing institutional resources, or to the immediate requirements, and on the other hand, possibly laying the professions concerned open to the charge of a type of syndicalism which seeks to deny opportunities and advantages of these services to a large section of the people belonging to a low income group. The American Medical Association may serve as a good illustration of the type of syndicalism described above.

(ix) *Limitations of tests.*

The limitations of aptitude tests, and for the matter of that, of all kinds of tests, should always be kept in mind when they are applied to concrete situations and particular cases. Aptitude tests can at best only discover whether a candidate is likely to succeed in the professional preparation selected. They do not indicate promise of future success in the practice of that profession, for there are many imponderables involved in it. Kandel (73: ix) makes the following remarks in the conclusion of his study on the professional aptitude tests that are in use in America:



It is clear from the investigation here presented that nowhere is the claim made that aptitude tests can be used as the only criterion for the admission of candidates to professional study, nor that any standard of admission can be imposed on all professional institutions throughout the country. All that can be claimed is that here are measures which have proved their value for purposes of diagnosis and prognosis and which may be used as one criterion and an important criterion for purposes of admission.

This is a reasonable attitude towards the place of aptitude tests in a programme of evaluation. We should approach the work of constructing aptitude tests in the same spirit.

## 6. REVISION OF TESTS.

It should be noted in conclusion that the tests need to be revised frequently and made afresh, for they lose their significance and usefulness as the number and character of the students enrolled goes on changing with time. Also, various factors, such as the temporary dominance of some educational doctrines or the alteration of entrance requirements, may change very greatly the type of individual enrolled in particular subjects.

Davis (4: 62-63) makes a plea for a constant revision of tests on the basis of his experience. He observes:

The experience of test development in the armed forces suggests that constant revision in the light of the best available validation data should be carried on.

Therefore the tests, however carefully made they may be, must be constantly revised and changed in respect of their contents and forms, in accordance with the changing needs of the community.

## CHAPTER VII

### ADMINISTRATION OF THE SCHEME

In the previous chapter an attempt was made to outline what our examination system should be like. For the proposed reorganization, a certain type of administrative set-up will be needed. This chapter will therefore be devoted to a discussion of a plan which might help put the scheme into effect.

#### 1. ORGANIZATION FOR CONSTRUCTING EXAMINATIONS.

There has not been so far any organized effort in the field of test construction in India, as has been previously noted elsewhere. The only planned and regulated examinations are those given at the conclusion of the various stages of education; but for the preparation of the different kinds of examinations outlined in the preceding chapter the present agencies carrying on the work will not do. A different type of administrative and organizational machinery will be needed.

##### (a) *Technical personnel.*

The first and foremost condition that must be fulfilled, before the programme of test construction can be begun, is to provide the requisite number of test technicians who should be well-versed in the theory as well as practice of the subject. They should also have a good grounding in other aspects of education. That is, these specialists in measurement should be technicians as well as educators. Adequate training of such personnel should be regarded as the first priority in this scheme.

Even when a measurement specialist is both a technician and an educator, he will need the help of experienced and interested classroom teachers in the process of test construction. Suggestions regarding the objectives of most value, their evaluation, and the practicality of the ideas of test

experts for measuring achievement in the classroom must come from teachers. Thus the construction of tests will involve the joint effort of experts in both subject-matter and testing technique, the former supplying the definition of the values to be tested and the latter preparing tests to measure them.

(b) *Provincial and regional organizations.*

In India education is the responsibility of the provincial government, and the administration of education has a province-wide range. Curricula of elementary and secondary schools, too, are, in general outline, devised and enforced by the provincial authority. Under such circumstances it is only practical to establish an agency for test construction on a provincial basis. In some of the provinces there have already been established similar organizations; for instance, in the United Provinces a Bureau of Psychological Research has been recently inaugurated. This provincial organization may be entrusted with the work of test-construction.

This organization should take upon itself the responsibility of constructing and standardizing achievement and diagnostic tests in various subjects in the provincial language. Achievement tests should be so constructed that they can be administered to a series of grades in the schools, thus affording some evidence of growth. This organization should also make and standardize aptitude and intelligence tests and tests that may be used in selecting candidates for various kinds of institutions—academic and professional.

In provinces such as Madras and Bombay, which are inhabited by more than one nationality having different cultures and speaking different languages, organizations for test construction should naturally be established on the basis of regions comprising all the schools which have similar curricula and the same medium of instruction.

(c) *Central agency.*

Apart from the provincial organizations described above, there is a need for a central agency which can serve as a co-ordinating link among the various provincial organizations, and which can direct and organize research in the theory and techniques of measurement.

Even in a country like the U.S.A. where so much emphasis is laid on the decentralization of education, there is in evidence a tendency towards establishing ever larger organizations carrying on the work of test construction. In late December, 1947, as stated in a report (37), the activities of the three non-profit 'testing agencies, namely, the American Council on Education's units (Co-operative Test Service, National Teacher Examination, and Psychological Examination), the Graduate Record Office of the Carnegie Foundation for the Advancement of Teaching, and the College Entrance Board, were merged to form the Educational Testing Service. This larger organization has been created "to develop more effective examinations from the first grade to graduate schools, better intelligence and aptitude tests, and to conduct intensive research in new testing methods."

The need for the establishment in India of a Central Research Educational Institute has been felt for a long time. The All India Women's Conference was presumably the first organization to take a practical step in this regard. They raised a fund amounting to Rs. 400,000 for this purpose, as stated by Miss Barrie in the British Commonwealth Education Conference held in London in 1931 (110: 60). But for some reason or the other the proposed Institute could not be set up.

However, it is gratifying to note that now the Central Government of India have seriously taken this matter into their own hands. They have decided to establish a Central Bureau of Psychology as early as possible. Among its functions, this Bureau has those of test construction and psychometric research (as already mentioned in Chapter IV, Section 2 (b)).

The Central Bureau may as well take upon itself the responsibility of accomplishing those things which the provincial organizations are not competent or resourceful enough to do. For instance, aptitude tests for various types of academic and professional institutions, as well as better individual and group intelligence tests should be prepared by the Central Bureau in the lingua franca of India. These tests, then, can be translated into the various provincial languages, adapted and standardized for the particular provinces; and thus much time, energy and money that would

have been spent on efforts to produce these tests separately by provinces can be saved.

The Central Bureau can also be better equipped to carry on research in evolving new techniques of measurement not only in the easily measurable aspects of human behaviour, but in those aspects that do not lend themselves to direct measurement, such as interests and attitudes.

No doubt, all the significant work done in this field by Western countries, particularly America and England, can be helpful to us in evolving methods of measurement suitable to our conditions. But we have to be very cautious and judicious in adaptation, especially in the matter of tests of interests and attitudes. For the cultural patterns which in the main go to determine interests and attitudes are very different in India and Western countries.

## 2. ADMINISTRATION OF EXAMINATIONS.

The discussion of our examination system in a previous chapter led to the conclusion that it has done more harm than good to the fulfilment of educational objectives. The terminal examinations both at the end of the Middle School (which may be regarded equivalent to the elementary school in the U. S. A.) and at the end of the High School have only served to make the curricula rigid and indifferent to the needs both of the individual and the community. The external examining bodies—boards and universities have acted more or less like commercial concerns turning out “goods” on a large scale. They have dominated schools to such an extent that the whole purpose of education has become, so to speak, the passing of an examination at the end of school.

In the modern educational system of India the administration of examinations will have to be so modified as to enable it to do away with the defects of the old machinery and to take care of the new demands.

For this purpose, the administrative pattern of examination should be as follows:

### (a) *Continuity of testing programme.*

The purpose of evaluation being the guidance of pupils, it is obvious that a single terminal examination cannot be

regarded adequate. The testing programme should be continuous. Examinations should be given as a part of a co-ordinated plan of instruction and supervision, throughout the school career of pupils and the results used for their guidance.

(b) *Democratization of administration.*

Testing programme should be planned co-operatively by the entire school staff according to the needs of various grades. Teachers should have the responsibility of selecting and administering the tests to their pupils, and of analyzing the results. The results should be entered into the cumulative record cards and be made available to administrators, other teachers, parents and students. This means that care must be exercised in showing and explaining the results in order to minimize possible psychological disadvantages to students, which too often accompany knowledge of such things as extremely high and low ratings.

(c) *Abolition of final examinations.*

Examinations at the end of elementary and high school which are used mainly to determine eligibility for graduation from the respective school should be discontinued. A student should be admitted to a higher institution on the recommendation of the school he has attended. Of course, such recommendations must be made on the basis of the cumulative record of the student concerned. The institution to which he is seeking admission should also be provided with a copy of his cumulative record. The higher institution should, however, have the right to institute an entrance examination, if it is deemed necessary.

In the beginning, it is expected that there will be quite a number of cases in which recommendations have been made without much justification. Therefore, the higher institutions to which students apply for their admission should hold an entrance examination for the purpose.

(d) *Training of personnel.*

(i) This arrangement throws a great responsibility on teachers. At present we do not have such teachers either in our elementary or secondary schools as can use tests

intelligently. It is therefore necessary to train them in the methods of measurement, before this scheme is put into practice. Every teachers' training institution should organize a basic course in measurement which must be compulsory for all prospective teachers. The contents of this course should be such as can make the teachers under training familiar with the various techniques of measurement, their use and interpretation of results. For this purpose, a relevant knowledge of statistics will also be necessary.

(ii) We shall have to utilize our present teaching personnel too, for this purpose. Arrangements must, therefore, be made to give teachers in service a short-term course in measurement as soon as possible.

(iii) If the proposed scheme is not feasible all at once, to start with, a limited number of teachers, at least one for every school may be trained in the methods of measurement. This person may assume the responsibility of directing the testing programme of the school by enlisting the co-operation of the other faculty members in the following manner:

- (1) The director should demonstrate in the presence of the teachers how a test is administered besides explaining the details of procedure verbally. The attention of the teachers should be called to the essential points to be observed in administering a test.
- (2) Every teacher should administer at least one test under the personal supervision of the director.
- (3) It is necessary to provide each teacher with a sample copy of the test and its manual of direction a few days before the test is to be given, so that he may study the manual and practice taking the test himself according to the directions.
- (4) After the test has been administered by the teachers, the scoring procedure should be demonstrated to make sure that each teacher understands just how the scoring is to be done.
- (5) When scoring is completed, tabulation, analysis and interpretation of results may be explained to the teachers who have participated in the testing programme.

It must be remembered, however, that this arrangement cannot be a substitute for a course in measurement. This

is just enough for starting the work. The need for a regular course in measurement should be met as soon as possible.

(e) *Regional units for testing programmes.*

Though the responsibility for evaluation must ultimately rest with the individual school, testing programmes can be arranged on a regional basis with certain advantages. Such experiments are being performed in America both at the elementary and secondary school level with encouraging results. In the state of Iowa a testing programme for elementary schools is launched annually and a nation-wide high school testing programme was conducted by the Co-operative Test Service in 1946, involving 664 high schools in 43 states.

Lindquist (83) regarding the co-operative testing programme for Iowa elementary school says:

Advantages to be gained through such co-operative organizations in testing, in contrast with the independent administration in local school systems of commercially distributed standardized tests, are such that the latter type of testing seems destined to be largely supplanted by the co-operative testing movement.

He goes on to enumerate the advantages of such a programme as follows:

- (1) The provision of norms, which since they are established for schools that are known to one another and that are operating under comparable conditions and with similar curricular organizations, are far more meaningful to the schools involved than are the more generalized norms provided with the usual standardized tests.
- (2) The provision of norms which, because of the large number of schools and pupils involved and because of the fact that all tests are administered at the same time and under the same conditions, are highly reliable and representative.
- (3) The provision of norms of school (average) achievement as well as of pupil achievement enabling each school to discover how its level of achievement compares with that of other schools.
- (4) A high degree of comparability in test results from



test to test, due to the fact that all norms are established for the same group of pupils and schools.

- (5) The provision of tests which are specifically adapted to the curriculum practices of the schools in the limited geographic area involved.
- (6) The provision of entirely new tests each year, thus precluding coaching on specific test items and permitting continuous adaptation to changing curriculum practices and immediate application of the most recent development in testing techniques.
- (7) The provision of all materials and services to the schools at a cost which is relatively low in proportion to the services rendered, due not only to the nonprofit nature of the project, but also to the many economies possible through large scale planned production.
- (8) A more effective utilization of test results in research investigations of educational problems.

There is much in such a testing programme to recommend itself for adoption in India. On the one hand it is free from almost all the harmful effects of a universal examination system, and on the other hand it does contain the most significant advantages of such a system. In the peculiar conditions of India, particularly the advantages (5), (6) and (7) given by Lindquist have a special significance. The provincial organization for test construction that has been recommended in the previous section might well take upon itself the responsibility of conducting a regional testing programme on the lines suggested by the Iowa and the Co-operative Test Service programmes.

## CHAPTER VIII

### IMMEDIATE IMPROVEMENTS IN EXAMINATIONS

In the previous chapters some proposals and suggestions have been made regarding the changes that ought to be effected in the examination system in India. Even if these proposals were wholly justifiable and acceptable to the authorities in charge of education in our country, it is too much to expect—the more so in view of the prevailing conditions in India—that they would be put into effect all at once. Therefore, some practical suggestions should be made for the immediate improvement of the existing examinations, taking into account the relevant elements of the objective situation in India today.

The traditional examinations will continue to occupy a prominent place, until other techniques of evaluation are evolved and made available for use in our schools. Therefore, there is an urgent need to improve our essay examinations as much as we can in the meantime. In any case, essay examinations must improve. For, even if other means of evaluation were available, essay examinations could not be dropped altogether. On the other hand, they should be used as an important method of assessing certain abilities which cannot be measured otherwise so effectively, as has already been indicated in Chapter VI, Section 4 (b).

Several studies have been conducted in the domain of essay examination both in Europe and America. The Calcutta University Commission too, was interested in this question. On the basis of the findings and recommendations of these studies a few important suggestions for the improvement of essay examinations will be made below.

#### 1. CONTROL OF EXAMINATION.

If examinations are to play a progressive role in education, they have to be so planned and controlled that they encourage those tendencies in teaching which bring the boys and girls

to use their intellectual powers in situations and subject matter, related to real problems. This principle implies a degree of control of examinations from within the schools themselves. Let us see how this can operate in our situation.

Both in the elementary and the secondary school, the system of examination includes examinations given in every grade two or three times a year, known as home examinations, and universal terminal examinations given at the end of the school career, which may be called graduation examinations. The control of the two types of examinations will be discussed separately.

(a) *Home examinations.*

These examinations should be controlled entirely by individual schools and administered by the class teachers in as many subjects and as many times during the year, as is needed.

(b) *Graduation examinations.*

There is a long-felt need for the diversification of these examinations not only in western countries like England, but in India. The consensus of opinion points to the urgency of separating school leaving and matriculation examinations. Those students who do not propose to continue their studies further should not be compelled to appear at a final examination. They should be granted a School Leaving Certificate on the basis of their school record. However, if a School Leaving Examination is considered essential, it should be controlled entirely by individual schools. The Matriculation Examination should be jointly controlled by the schools responsible for the education of the students before the examination and the institutions which are expected to guide their training after they have passed it. It means that the teachers of the schools must be represented on the examining body along with the faculty of the higher institutions.

## 2. CONSTRUCTION OF EXAMINATIONS.

Examinations must be so constructed as to satisfy the objectives of the curriculum. There has been a marked emphasis on testing memory work in our examinations.

This emphasis should be shifted to measuring power of judgment which implies a proper grasp and understanding of the subject matter. For this purpose, the following suggestions might prove useful:

(a) *Choice of questions.*

The practice of giving alternative questions should be abolished. Meyer (97) in his experimental study concludes that students do not always omit the question on which they will make the lowest score and that the reason students are unable to make accurate choices is probably the fact that they cannot judge their own knowledge with reference to the knowledge of the group. Moreover, the arrangement of alternative questions lowers the reliability unnecessarily.

(b) *Weighting of questions.*

If the scores on the questions are highly interrelated, as they usually are in the better essay examinations in a particular subject area, weighting becomes an unimportant issue. The function of an examination, namely, that of differentiating among the students, or of spreading them out one from another is little affected by weighting different questions in an essay examination.

Stalnaker (145) reports that in the Mathematics (Elementary Algebra) Examination of the College Board (1937) the correlation between the weighted and the unweighted scores was .99. He concludes that there is closer relationship between the weighted and the unweighted scores than there is between two independent readings of the same paper. Examinations in other subjects, e.g., English, American History, and Chemistry point in the same direction. Whether the scores are weighted or not, the grade reported to the candidates will be essentially the same.

Therefore, the practice of weighting questions should be given up. It involves much trouble and botheration to the paper setters without making any substantial addition to the validity or reliability of the examination.

(c) *Examiners.*

(Paper-setting in the case of home examinations should be entirely entrusted to individual schools. Class teachers and

subject teachers are the persons best qualified and most entitled to evaluate the achievement of the pupils in terms of the degree to which the objectives of curriculum are being realized.

For graduation examinations, however, papers should be set by a board of examiners including representatives of the school teachers, the supervisors and the faculty of the institutions which the candidates are expected to enter after passing the examination.

### 3. ADMINISTRATION OF EXAMINATION.

Not only home examinations but graduation examinations must be administered entirely under the supervision of the individual schools. The current practice of conducting graduation examinations in central places under the supervision of authorities appointed by the external examining body must be stopped forthwith. For, this practice, in the first place creates an unnatural and unfamiliar setting for the examinees and thus tends to hamper the best possible performance by students at the examination. Secondly, it implies a lack of confidence in the ability of the school staff to conduct the examination fairly on their own responsibility. It indirectly throws doubt on the sense of duty and professional integrity of school teachers, and is, therefore, not conducive to raising the morals of the teaching profession in general.

The reading and scoring of examination scripts should, however, be the responsibility of the examining body which controls the graduation examinations.

### 4. IMPROVEMENT IN THE RELIABILITY OF EXAMINATION.

The problem of reliability and objectivity of an examination is bound up with the nature of the examination as well as the scoring of it. The more clearly defined are the objectives of an examination in terms of the specific knowledges or skills called for in answering it, the more definitely can the details of a desirable and acceptable answer to a particular question be determined. The readers of the examina-

tion can thus have a more objective method of scoring to follow.

(a) *Rules of scoring.*

Readers of examinations must agree on what is to be marked for in a particular question. A previous conference of the representative groups constituting the examining body may prove quite useful, if they can decide as to what a standard answer should be like and provide each examiner with a detailed analysis of the answer assigning a certain number of points to each significant part of it. It should also be specified how the marks are to be deducted for various types of possible errors.

Such detailed directions for evaluation give fairly reliable results as shown in a number of studies including those of Sharp (138), Stalnaker (146), and Fruchey (43). Fruchey reports that in grading essay examinations given to test the ability to apply chemical principles, the reliability coefficient ranged from .85 to .95, when the objectives on which the examination papers were to be marked had already been made clear to the readers.

(b) *Procedure for scoring.*

Scoring reliability can be substantially increased, if the following procedure is adopted as suggested by Weideman (166):

Read a small sample of say 25 to 30 papers drawn at random from the lot to obtain a general idea of the grades of answers that may be expected.

Score one question through the entire set of papers. It has two advantages:

- (1) The comparison of answers tends to make the marks more exact and just.
- (2) Having to keep only one list of points in mind saves time and promotes accuracy.

(c) *Arrangement for rescoring.*

Scoring of the same paper by more than one examiner will raise the reliability of the examination. Thorndike testified this fact in the International Examinations Inquiry Conference (66: 241 seqq.) as follows:

The traditional examinations can be improved by having

two, or three, or more persons examine the work of each candidate. The average of the independent opinions of two examiners will have only  $7/10$  as much error as the opinion of one alone. But this method is very expensive. Some economies can be introduced by examining only the marginal cases.)

Whenever two or more examiners rate a candidate's work, they should do so with no knowledge whatsoever of the rating given by others .

(But it must be borne in mind that) if two examiners give a candidate the same or nearly the same rating it is no proof that their average rating is nearly right. The common custom of having two examiners who have disagreed discuss their ratings and try to come to an agreement is indefensible. A rating reached in this way has little if any more value than the average of the two ratings without any discussion of them, and more than twice as much time is usually required than would be necessary to have a third examiner rate the work independently. His additional rating is worth enormously more than their agreement.—

In the case of scholarship or other examinations of this kind, if the highest 10 per cent are to be examined again, they should be mixed with some (the more the better) of the work of the second and third deciles of the total group examined. If a hundred scripts near the passing-mark are to be examined again, they should be mixed with a hundred more that are better in varying degrees. It will help to check up the results.

If the arrangement for rescoring as suggested by Thorndike is not practicable because of the expenses and time involved in it, something on the lines of the procedure adopted by the Regents Board of New York State may be attempted. The Board requires the scripts to be marked by the teachers or a committee of teachers in the schools where they are written according to the detailed suggestions and instructions issued by the Board. The passing papers or as they are called, "the papers claimed" are forwarded to the State Department of Education to be re-read by the staff examiners and teachers who must have had at least three years of experience in teaching the subject which they examine.

The following procedure is adopted for rescoring:

All the papers submitted are not re-examined. But for re-examining small samples are drawn at random out of the papers sent by each school. If scoring mistakes are found in a sample, all the papers belonging to the particular school out of which this sample has been drawn are rescored. This rescoring thus helps to correct the gross mistakes committed in the initial evaluation. If in this process of check it is found that some examiners are particularly unreliable and erratic, they are eliminated from the list of examiners.

## 5. EXAMINATION AND SCHOOL SUCCESS.

The results of a single examination alone, should never determine either promotion to a higher grade or graduation from a school. The success of a pupil should be based on the cumulative record of his achievement throughout his school career. It is suggested that the school record must count a certain proportion of marks for promotion not so much as a corrective of the final examination marks, but for its stimulating effect upon the pupils' work throughout the year. Ryburn (128) recommends that 50 per cent value be awarded to the work done in the school and 50 per cent value to the examination.

However, the relative importance of the school work and examination cannot be fixed once for all. It has to be determined by taking the specific factors of the situation into consideration, such as the purpose of the examination, the nature of the school work, the efficiency with which the school work is evaluated and recorded, etc.

The current practice of adding marks obtained by a pupil in different examination papers for assigning him a grade or division is indefensible. For the unit mark is not the same in all the papers. Therefore, the results of various papers should be considered separately.

The percentage of marks for pass, or third, second and first divisions have been fixed arbitrarily in our examination system. For instance a candidate who obtains at least 40 per cent of the total marks is declared to have passed the examination and one receiving less than 40 per cent is regarded a failure, irrespective of the difficulty of the exami-



nation, and the method of scoring. It creates a baffling situation in which results are grossly incomparable from paper to paper and from year to year in the same examination.

If discrimination in the form of different divisions is regarded as essential, they should be made in terms of standard deviation units or percentile scores. This will make the results more comparable. )

## 6. EXAMINATIONS FOR SELECTION.

For some time to come examinations will continue to be used for selection at different stages of education. After launching the scheme of universal free and compulsory elementary education, the number of candidates seeking admission to secondary schools will be very large indeed. If, in the meantime, owing to a lack of funds the number of our secondary schools does not increase sufficiently to take care of all these applicants, a selection will have to be made on the basis of their fitness to profit by secondary education. This makes it all the more necessary to make the examinations as valid and reliable as possible. Some of the methods of doing this have been suggested in the preceding section and in Chapter VI, Sec. 5 (d).

As our resources increase and we succeed in building secondary schools sufficient in number and equipment to accommodate all candidates, the selective function of examinations will be replaced by that of guidance and classification of pupils according to individual and social needs. From this point of view the cumulative records of pupils will assume greater and greater importance in the future. Therefore the need for investigating the best methods of keeping and using cumulative records is urgent.

In the long run, examinations should not be the determining factor in the question of providing further education for children and youth. On the other hand, a normal progress into institutions at various levels should be guaranteed for all pupils. Of course the kind of education one should have will be determined on the basis of the needs and capacities of the individual and the demands of society.

The educator of the future will certainly consider the

failure of pupils and repetition of grades as an extremely crude and wasteful educational method. The failure of pupils should be regarded as a failure on the part of the school to make a proper diagnosis, to supply a differentiated curriculum which can meet the needs of pupils, and to employ a flexible promotion system.

#### 7. IMPLEMENTATION OF THE PROPOSALS.

The proposals for the immediate improvement of examinations as outlined above can be implemented without much loss of time. The Central Advisory Board of Education and the Hindustani Talimi Sangh (All India Board of Basic National Education) are committed to relatively more radical reforms in examinations than the ones which have been proposed here. It would facilitate the matter much, if a conference of well-known educators, public men interested in education, representatives of school teachers and the two Boards mentioned above were called to discuss the question of immediate improvements in examinations. This is the most opportune time to reach a decision on this subject, as the whole system of education is being reorganized in almost all the provinces at the present time. It is expected that the above proposals could be accepted in essence by such a conference and put into effect by the authorities concerned.

## CHAPTER IX

### PRACTICAL DIFFICULTIES

In the foregoing chapters an analysis has been made of the weaknesses and drawbacks of the present examination system in India, in so far as they militate against achieving wider educational objectives, and some suggestions and recommendations have been made regarding the long range as well as immediate improvement of our examinations.

However, there are certain factors which will obstruct the implementation of the proposals for reform. They should, therefore, be taken into consideration. This chapter will seek to define those factors and suggest, if possible, how they can be removed.

#### 1. CONSERVATISM.

In India a very rigid and inflexible system of education has been in operation for more than a century now without any fundamental changes. This fact along with many other factors—political, economic and social, has helped to accentuate in teachers, as well as people in general, a sort of inertia against all change.

Moreover, Government in the past had not been very serious in reforming our educational system. Whenever they were forced to accept a progressive educational measure as a result of public pressure, they did not make necessary provision to put it into effect.

Now, when the set-up of the government in India has changed for the better, it is expected that the difficulty of the lack of provision for implementing beneficial measures will be more easily solved. If the authorities concerned accept the suggestions and recommendations made herein for improving our examinations, they must first of all make adequate arrangements for the training of teachers. For this, every teachers' training institution should organize a

basic course in measurement including not only the modern techniques of testing but also the methods of improving traditional examinations. This should be a required course for all prospective teachers.

But the training of fresh teachers in the new methods will not suffice by itself. Teachers under training may receive some degree of instruction in the problem of examination and in the new techniques, but they will pass out into a world of practical teaching where they will find hard-boiled administrators—headmasters, supervisors, and inspectors—who look with suspicion upon all new-fangled devices. Therefore, the training of fresh teachers to be of much avail must be coupled with the in-service-training of administrators in the new techniques.

## 2. OPPOSITION BY VESTED INTERESTS.

The proposed changes in the examination system in India will face opposition from another quarter. These changes will hit the financial position of the present examining bodies (*i.e.*, universities and boards), very hard as most of them are largely dependent upon examination fees. Moreover, examiners who are drawn from the ranks of the teachers in universities, colleges and high schools, will lose a portion of their precarious incomes.

Besides, there is another group of people who will be deprived of a part of their earnings. These are the writers and publishers of those books, “notes” and “made easies” which are especially meant for the consumption of candidates for examinations.

All these groups, in their personal interests, are apt to oppose the suggested changes in examinations. Therefore the authorities concerned should take this attitude into account when considering the reorganization of the examination system. As it involves a larger and more basic problem of a general improvement in the economic status of teachers, it cannot be tackled satisfactorily unless teachers’ salaries are increased sufficiently to give them a sense of security and satisfaction in their living conditions.

### 3. NON-AVAILABILITY OF TECHNICAL PERSONNEL.

We need a large number of test-technicians who are well-versed both in the theory and practice of test-construction. At the present time, there are very few persons in India who can adequately perform the job of test-construction to satisfy our needs. Without a sufficient provision of technical personnel the work cannot be started in an organized way.

This need should be met by establishing departments of educational measurements in our universities and teachers' colleges without delay, with the help of the available personnel in the country, and if need be, by enlisting the services of experts from foreign countries. As shown in a previous chapter both the central and the provincial governments need such personnel. Therefore they must co-operate with each other in this enterprise.

### 4. DIVERSITY OF LANGUAGES.

India has no single national language spoken throughout the country. This lack will offer some difficulty in the construction and standardization of tests on a large scale. But as the medium of instruction in various provinces is the local language, this difficulty is not so big as it seems. Tests for various provinces or regions must be constructed in the local language and standardized on the local population.

There will however be a real difficulty in the case of those tests which have to be translated from foreign languages into Indian languages. For instance, the Stanford-Binet Intelligence Test cannot be wholly translated word for word or phrase for phrase, because of the cultural differences between children speaking English and those speaking Indian languages.

### 5. DANGER OF COACHING FOR TESTS.

Under the present conditions in India, it is too much to expect that teachers will resist the temptation of coaching children on tests, if the contents of the test are known to them, for the results directly or indirectly do affect their professional and economic status. Therefore it will be

necessary to make suitable arrangements to prevent coaching in these tests.

One of the devices which may prove useful in this respect is that tests should be prepared in several equivalent forms ; but this is an expensive proposition.

There is another way to stave off this danger. New tests should be produced frequently. It will be advisable to do something on the lines of the Iowa-Every-Pupil-Testing-Programme in which fresh tests are produced every year very economically, as suggested in a previous chapter.

## CHAPTER X

### SUMMARY AND CONCLUSIONS

The reorganization of the examination system in India cannot be dealt with correctly without taking into consideration the aims and objectives that have guided our education in the past and that should guide it in the future.

Education in colonial India was mainly intended to serve the needs of the British rulers for the government of the country. They needed only a small group of educated Indians who could help them in clerical and secretarial works in the Government offices and thus serve as liaison between the rulers and the ruled. This is why the Government paid so much attention to secondary and higher education and ignored elementary education which is, in fact, the foundation of the whole educational structure in every advanced country.

With such limited objectives of education, the Government set up a system of examinations which has tended to make matters still worse. The school curriculum has been dominated by the requirements of examinations throughout all the stages, with the result that the passing of examinations has become the sole aim of education and a large number of students have failed to gain anything worth while from schooling.

The examinations given at the end of Middle School (which may be regarded equivalent to the American elementary school) and at the end of High School, are considered the most important ones in our educational system. These are conducted, administered, and scored externally by a central examining body on a province-wide scale.

In keeping with the educational policy of the Government, these examinations have been used mainly as a screening device to debar the so-called weaker pupils from proceeding onwards. Little use has been made of examinations for remedial and guidance purposes.

Apart from essay examinations, no other techniques of evaluation have been used on a sizeable scale in India so far.

Though some objective tests have been developed in certain private institutions, they have not become popular.

Various educational commissions and committees, in the past, have pointed out the defects of our examination system and suggested remedies. The recommendations of the Calcutta University Commission, the Zakir Husain Committee, and the Examination Committee of the Central Advisory Board of Education are noteworthy. These recommendations include the use of objective tests and other techniques of evaluation, *e.g.*, practical examination, teacher rating, etc.; separation of the school leaving and matriculation examination; making the high school examination independent of university control. But most of these recommendations have so far not been implemented.

Now, as India is free from foreign domination, she is in a better position to launch a scheme for the development of her educational system which will certainly include improvement and reform in examinations. This development should conform to the development of the whole national life. It is expected that India will progress along democratic lines. This will necessitate a transformation of the existing system of education for the classes into an education for the people. For this we shall need a common school for all—a school that is based on the principle of productive and creative work, and co-operative endeavour.

Our future school, instead of emphasizing passive memorization of the traditional subject matter should centre its work round productive and creative activities through which children can have experiences which are meaningful and useful to them individually as well as collectively. Knowledge and skills which are the essential tools of education will be achieved as need arises for them in the process of carrying on these activities.

As a result of India's progress along democratic lines, the gap existing between the elementary school for mass education and the secondary school for education of the élite should continue to contract, till at last elementary and secondary schools, instead of being self-contained and alternative phases of education, should merge into a single universal scheme of education for all.



Such is the long view of educational development in India. In keeping with this, techniques of evaluation should be evolved and used so as to serve the ends of education as outlined above.

It is clear that in such an educational system, examinations will play quite a different role from what they do at the present time. They will lay their emphasis on guidance rather than on selection and weeding out. Examinations will be used to identify the needs and capacities of pupils, so that they may be better helped in their day-to-day work progressively.

With this broad objective in view, a few proposals are made in the following section regarding the reorganization of our examination system. However, in making these proposals, due consideration has been given to the relevant recommendations of the various educational committees appointed during the last thirty years in India, as well as to the current practices and trends in examinations in some of the more developed Western countries, particularly the U. S. A. and Great Britain.

## PROPOSALS

### (A) *For Long-Range Reorganization.*

(1) First of all, the curriculum should be reorganized keeping the following factors in view:

- (a) It should be adapted to individual needs.
- (b) It should be related to community needs.
- (c) It should have its emphasis on co-operative endeavour.
- (d) It should be based on the principle of experience through activity rather than memorization by rote.
- (e) It should be the result of integration of subject matter into an organized whole.

(2) Adequate techniques should be evolved to evaluate the outcomes of such a curriculum.

- (a) We need techniques to appraise the outcomes of group projects, especially those which are related to improving the conditions of community life as suggested by the Zakir Husain Committee.

- (b) There should be methods by which one can judge the efficiency of the individual in a co-operative undertaking in terms of his contribution to the collective output. For this, there will be needed tests of sociability and adjustment to group in action.
  - (c) There should be tests to measure essential skills involved in practical work, such as craft, art, music, laboratory work in science.
  - (d) For assessing the outcomes of a subject-matter field, there should be both types of examinations, namely essay and objective type. Essay examinations will be needed for measuring those outcomes of instruction which are more closely connected with attitudes of understanding and appreciation, in so far as they can be tested at all. Essay examinations will also serve as a more adequate tool in measuring the ability to organize, analyze, interpret and evaluate the learnt materials. Objective tests, on the other hand, will prove more useful in measuring knowledge of materials which need memorization. But they will also be used to a certain extent in measuring the ability to apply ideas learned in a course to new situations and to organize, analyze, interpret and evaluate the learned materials.
  - (e) We need objective tests for measuring achievement in various fields of knowledge, intelligence and aptitude for different kinds of activities—academic and practical.
- (3) The tests should be constructed and standardized on local populations.
- (4) Examination results should be used for various purposes—instructional, diagnostic, administrative and guidance.
- (5) Methods of keeping and using cumulative records should be investigated to make guidance work more productive.

(B) *For Long-Range Administration.*

- (1) Organizations for evolving the techniques of evaluation and constructing tests mentioned above should be set up

on a provincial or regional basis, because education in India is a responsibility of provincial governments.

(2) Apart from the provincial organizations, there should be established a central agency to serve as a co-ordinating link among the various provincial organizations and to direct and organize research in the theory and techniques of measurement.

(3) Technical personnel to be engaged in test construction should be both specialists in measurement and educators.

(4) The administrative pattern of examinations should be as follows:

(a) The testing programme should be continuous.

(b) The testing programme should be planned co-operatively by the entire school staff according to the needs of various grades.

(c) Examinations at the end of elementary and high school which are used mainly to determine eligibility for graduation from the respective school should be discontinued. Students should be admitted to higher institutions on the basis of recommendations made by the schools they have attended. The higher institutions should, however, have a right to decide the question of admission finally on the basis of an entrance examination, if they will.

(d) All prospective teachers should be trained in the methods of measurement, and their use. All persons now engaged in teaching should be given a short-term course in measurement as soon as possible.

(e) For the sake of economy and certain educational advantages testing programme should be organized regionally somewhat on the lines of the Iowa-Cooperative Testing Programme.

(C) *For Immediate Improvement in Examinations.*

(1) Home examinations should be controlled entirely by individual schools and administered by class teachers in as many subjects and as many times during the year as is needed.

(2) Graduation from a school should be decided upon differently for those who wish to proceed to higher institutions and those who do not.

Those who intend to carry on their education further should be required to take a matriculation examination which should be controlled by a board of examiners consisting of the representatives of the schools responsible for the education of the students before the examination and the institutions which are expected to take care of their education after they have passed it.

Those who do not wish to continue their education further should be granted a School Leaving Certificate on the basis of their school record. They may also be required to take an examination at the end of school, if it is considered necessary. In that case, the examination should be controlled entirely by individual schools.

(3) Examinations should be so constructed as to satisfy the objectives of the curriculum and should be made more reliable.

(a) Questions should be based on a wide sampling of subject matter.

(b) The current practice of giving alternative questions and that of weighting questions should be discontinued.

(c) Paper-setting for home and school leaving examinations should be entirely entrusted to individual schools. For the matriculation examination, papers should be set by a board of examiners including representatives of school teachers, supervisors and the faculty of the higher institutions.

(d) Readers of examinations should agree in advance on what is to be marked for in a particular question.

(e) One question should be scored through the entire set of papers.

(f) A procedure for rescoring should be adopted somewhat on the lines of the one adopted by the Regents Board of New York State.

(4) All the examinations should be administered entirely by individual schools.

(5) The current practice of adding marks obtained by a pupil in different examination papers should be discontinued.

If discrimination in the form of different grades or divisions is necessary, they should be made in terms of standard deviation units or percentile scores rather than in terms of fixed percentages.

(6) Promotion and graduation should not be determined solely by the results of a single examination. On the other hand, due consideration should be given to a pupil's entire school record in determining his success.

### PRACTICAL DIFFICULTIES

In implementing the above proposals the following difficulties will have to be faced:

(1) The conservatism of the people will stand in the way of making the proposed changes.

(2) Examining bodies, examiners, and writers of those books which are especially meant for the consumption of candidates for examinations will offer resistance to those changes for the fear of losing a part of their income.

(3) Scarcity of adequate technical personnel will impede the scheme.

(4) Diversity of languages will demand that tests be constructed in various languages.

(5) If tests are published for use over a long period of time, there is a danger that children may be coached in them. But this danger may be avoided by producing new tests frequently or adopting a plan of testing similar to Iowa Cooperative Testing Programme in which fresh tests are produced every year very economically.

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