Report
of
The Committee on Examinations

Central Advisory Board of Education
Ministry of Education and Social Welfare, India

Nat ional Council of Educational Research and Training

July 1971
Ashadh 1893

Published at the Publication Unit, by Shri S.A. Abidin, Secretaary, National Council of Educational Research and Training, Sri Auurobindo Marg, New Delhi 16 and printed at Rajendra Ravindadra Printers (P) Ltd., Ram Nagar, New Delhi 55.

CONTENTS

1. INTRODUCTION

1.01. *Appointment of the Committee*

In our country, malpractices and eruption of violence during the progress of an examination or after an examination have increased considerably during the last few years. At the 35th meeting of the Central Advisory Board of Education, held at New Delhi on the 2nd and 3rd of May 1970, most members expressed considerable concern about the malpractices, eruption of violence, etc., during the progress of our public examinations held in the different parts of the country. The Board, therefore, passed the following resolution which appears as resolution 12 in the minutes of the 35th meeting of the Board:

> "The Board requests the Chairman to set up a Committee on Examinations which will examine the present situation and make recommendations to counteract malpractices and to give protection to invigilators and others concerned with examinations."

Pursuant to the above resolution, the Chairman of the Central Advisory Board of Education appointed a Committee as shown below for the purpose:

CHAIRMAN

Union Education Minister

VICE-CHAIRMAN

Education Minister, Andhra Pradesh

MEMBERS

Education Minister, Bihar

Education Minister, Assam

Chief Executive Councillor, Delhi
Mr. A. E. T. Barrow

MEMBER-SECRETARY

Prof. S V. C. Aiya, Director, N.C.E.R.T.

1.02. *Meetings of the Committee*

The Committee held six meetings in all as follows:

(a) First meeting—Delhi—6th August, 1970.

(b) Second meeting—Srinagar—27th August, 1970.

(c) Third meeting—Pondicherry—26th October, 1970.

(d) Fourth meeting—Delhi—14th November, 1970.

(e) Fifth meeting—Delhi—11th and 12th January. 1971.

(f) Sixth meeting—Hyderabad—31st May and 1st June 1971.

In addition, there were several occasions on which the various problems were discussed by individual members of the Committee (or their representatives) and the Member-Secretary.

During his visit to the United Kingdom in September-October, 1970, at the invitation of the Centre for Educational Development Overseas, the Member-Secretary, under instructions from the Committee, devoted considerable time to the study of the problem of examinations and had discussions with British experts in the field. A special mention should be made of the valuable and long discussions with Mr Robert Morris, Director, Curriculum and Examinations, CEDO, and Dr D. M. McIntosh, Principal, Moray House College of Education, Edinburgh. As the Committee was of the view that the system of examinations in other countries would prove useful in its deliberations, the Member-Secretary collected relevant material during his visit.

1.03. *Committee's Discussions*

At the first meeting of the Committee, the Chairman

highlighted the main issues. An abstract of the Chairman's speech is given in Appendix 6. Thereafter, the Committee discussed the basic document prepared by the Member-Secretary and drew up detailed plans for its work. The Member-Secretary was asked to prepare a questionnaire to be sent to representative groups and individuals. The draft questionnaire was approved, with appropriate modifications, at the second meeting of the Committee at Srinagar. At this meeting, the Committee also conferred with officers of the Department of Education in the State of Jammu and Kashmir on examination problems. A summary of the discussions is given in Appendix 6. At its third meeting held at Pondicherry, the Committee visited the Aurobindo Ashram and discussed the Free Progress System of the International Centre of Education at the Ashram. A description of this system is furnished in Appendix 4. In addition, the Committee had valuable discussions with the Lt. Governor, the Chief Minister and other Ministers, and officers of the Education Department of Pondicherry.

At its fourth meeting held at Delhi, the Committee formulated the important issues on which it had to take decisions, outlined its main recommendations and drew up plans for the drafting of the report. At the fifth and sixth meetings of the Committee, the draft report was discussed in detail and modifications suggested.

1.04. *The Questionnaire*

The questionnaire as finalised at the second meeting of the Committee is reproduced in Appendix 1. At the outset, it was realised that the questionnaire could not possibly be sent to too large a number of individuals and organisations in the different parts of the country. Therefore, a decision was taken on the list of individuals and organisations to whom the questionnaire should be sent. In addition, the Vice-Chairman of the Committee was requested to give wide publicity, through the press, to the

questionnaire. Individual members of the Committee volun teered to circulate the questionnaire among interested persons known to them. The questionnaire with a covering demi-official letter from the Vice-Chairman was sent to all the Ministers of Education in the States and Union Territories. The Member-Secretary sent the questionnaire to Education Secretaries and Directors of Education in the States and Union Territories, Vice-Chancellors of Universities, Chairmen of State Boards of Education and other educationists. In this way, the Committee attempted to elicit opinion from as many persons as possible connected with education. Although, as anticipated, the number of replies to the questionnaire was limited, it must be said to the credit of those who replied that they took considerable care in formulating their answers to the questionnaire. To illustrate this, a typical reply to the questionnaire is reproduced in Appendix 10.

A study of the replies received was undertaken by Messrs R. G. Misra, K. N. Hiriyanniah and R. K. Mathur of the National Council of Educational Research and Training. On the basis of this study, an analysis of the replies to the questionnaire was prepared and used for posing problems and formulating solutions. The analysis of the replies to the questionnaire is given in Appendix 9.

1.05. *Appendixes*

Taking into account the large volume of material which the Committee had to present in its report, a decision was taken that the bulk of the material collected should be furnished through appendixes and that each appendix should become a self-contained document. They fall into three categories. In the first category come the questionnaire, a typical reply to the questionnaire and the analysis of the replies received to the questionnaire. These are furnished in Appendixes 1, 10 and 9, respectively. Typical systems of examination have been described in the second category of appendixes. Appendix 2 gives the

Swedish System which is considered one of the best in the world. Appendix 3 gives the manner in which large-scale examining is undertaken in the United States of America. Appendix 4 gives the Free Progress System adopted by the International Centre of Education at the Aurobindo Ashram, Pondicherry. Appendix 5 gives the practice in Soviet schools. This was specially written by UNESCO experts from the U.S.S.R. who were working at the National Council of Educational Research and Training. Appendix 11 gives the Principles of Scaling and the Use of Grades used in examinations of the Council for the Indian School Certificate Examinations. In the third category are those setting out the views and opinions including those on public examinations abroad and the work done by the National Council of Educational Research and Training on examination reform. (Appendixes 6, 7 and 8.)

1.06. *The Report*

The report has deliberately been made brief. It analyses the present situation and attempts to suggest short-term and long-range remedies. The points discussed and conclusions reached are based on the relevant material collected by the Member-Secretary, memoranda submitted by individuals, views expressed by educationists, systems prevailing in other countries, financial and other difficulties that we have to face in our country. The Committee realises that it has to deal with a problem which falls essentially within the powers of State Governments. Any change, however desirable, can be brought about only through the willingness and active cooperation of the State Governments. The Committee also realises that, unless all the States agree to a uniform pattern, the results cannot be uniformly beneficial. The Committee was keenly aware of the limitations under which our teachers and examiners have to work and the general attitude of the public towards

examinations. All these factors have had necessarily to be kept in view while formulating remedial measures.

1.07. *Acknowledgements*

Thanks are due to Messrs Robert Morris, D. M. McIntosh R. G. Misra, K. M. Hiriyanniah, H. S. Singha, Kireet Joshi, R. A. Abulkhanov, M. G. Kalpakov, V. M. Galushin, V. V. Nathan, N. D. J. Rao and D. S. Misra for their individual contributions directly or indirectly to this report and to the Delhi Administration, the Governments of Jammu and Kashmir, Pondicherry and Andhra Pradesh for facilities and hospitality for the meetings of the Committee.

2. REVIEW

2.01. *Examinations*

In a welfare State, children have to be educated according to their age, aptitudes and abilities. For this purpose, evaluation becomes a necessary tool in the educational process. In this way, it has a positive function. Whilst our present system of examinations attempts to assess scholastic attainments, it should nevertheless have also a predictive function to help pupils choose courses of study suited to their talent and potential, so that they may develop into useful citizens. Unfortunately, in our country, the negative function of an examination is emphasised more than its positive role, and the objective generally is to find out what a pupil is really unfit for, thus creating a fear and a failure complex. This over-emphasis on the negative aspect does incalculable harm to the whole educational process and leads to highly undesirable consequences. The historical reasons for this in our country are reviewed later. It may be mentioned here that world education opinion is against the practice of declaring a student as having 'failed' in a subject or in an examination.

2.02. *A World Problem*

The systems of examinations prevailing in other advanced countries have one thing in common, viz., the positive function of evaluation. Some of the current systems and their basic features are described in the appendixes.

Wherever examinations are held, malpractices in one form or another are resorted to, but the incidence and magnitude of such malpractices may not often be very significant. Similarly, there is also the possibility of teachers being influenced in any form of internal assessment.

This can be seen from a comment in the *Daily Telegraph*, London, reproduced on page 10 of Appendix 7.

Till about the year 1930, the entire process of an examination and the declaration of results were accepted without question as unchallengeable and final. Further, the results of an examination were relied upon for a large number of purposes, including purposes for which they could never really be a correct index. There is now a change in the situation. Firstly, there is a growing tendency to think in terms of the specific purpose or purposes for which the results of an examination are intended. Secondly, there is a more critical appraisal of the examination system based on an accurate knowledge of the complexities of the educational process and of the human mind. It is this knowledge that has led to the conclusion that the confidence hitherto reposed in the results of an examination is not at all justified. Research has shown that there are limitations to any method of assessment of any form of human behaviour. The application of statistics has provided a useful tool for assesisng the reliability of the results of an examination. Research has also shown that results of an examination whilst reliable, may have, in certain cases, no validity.

In addition, the sheer magnitude of the task of organising as examination has itself become a major problem.

The world situation may rightly be summarised in the words of Sir David Anderson:

> "The problem of examinations is giving rise these days to much speculational concern and even alarm amongst students, parents, employers, and the public generally, and not least amongst those responsible for setting and running the examinations."

The situation described in the foregoing paragraphs clearly shows that our country is not alone in facing complex problems associated with examinations. However, it is pertinent to mention that the results of research on

examinations have not made any significant impact on the systems prevailing in our country.

2.03. *Terminology*

In order to make the discussions in the report clear, an attempt is being made here to explain some of the technical terms used frequently. The achievement of a student in any one area can be assessed through a test. Such a test need not necessarily take the written form. In some cases, we are required to assess skills and here some forms of observation, etc., may be adequate. Generally, the word 'examination' is used for the written form of a test, although practical examinations are conducted and the performance of students evaluated through that process in science subjects. The written examination is, by and large, confined to test the scholastic characteristics of the student only. The personality of the student, his capacity for organisation, his capacity for adjustment with those with whom he works, his general health, etc., do not figure in an assessment through an examination. However, for the work of a person in various capacities in life, the characteristics of an individual as mentioned are fairly important.

In our schools, we have different classes. Thus, at the primary stage we may have four or five classes. At the upper primary or middle school stage, we may have two or three classes. At the secondary/higher secondary stage, we may have three classes. The duration of instruction in each class is one year. Promotion from one class to the next is made mainly on the results of written examinations which are held at least once in a year in the school. Such examinations are called class examinations.

In some States in our country, there is a common examination conducted for all the students of a region at the end of the higher primary or middle school stage. Almost invariably, there is an examination conducted by a board at the end of the secondary or high school stage

and higher secondary stage for the pupils of all the schools in the region. Similarly, universities conduct examinations for students of all the colleges affiliated to them at the end of each or after a certain specified period of time. All such examinations are ordinarily called Public Examinations.

The State and Union Public Service Commissions and professional institutions like the Institution of Engineers also conduct examinations for large groups of students. Such examinations could also come under the category of public examinations. However, it is to be stressed that, ordinarily, State and Union Public Service Commissions conduct competitive examinations and are more concerned with ranking in a certain order rather than with a pass or fail. To this extent, their examinations are really different.

In this report, the term 'Public Examination' will be used mainly to describe University and School Board Examinations. In such examinations, the results are declared in terms of pass and fail. To pass a Public Examination, it is often necessary to obtain a minimum pass mark in all the subjects prescribed for the examination or a certain number of specified subjects. Failure in one or two subjects may lead to the student being required to appear in those subjects at a supplementary examination. Marginal failures in one or more subjects are often condoned, on the basis of certain rules or through discussions in committees, by the award of grace marks.

In addition to the declaration of results in terms of pass and fail, the common practice in our country is to classify candidates into three divisions: first, second and third. Successful candidates are issued mark-sheets setting out the marks secured in different subjects. Ordinarily, the 'raw' marks as assigned by the examiner are furnished to the candidates, although these marks are subject to considerable error. In a few cases, the 'raw' marks are converted into 'grades' and the result of a candidate in a subject or in the examination as a whole is given in terms of grades.

2.04. *Ancient Practices*

The origin of examination is shrouded in obscurity but as the acquisition and utilisation of knowledge is fundamental to human progress, there must have been some rudimentary testing procedures and examinations from time immemorial. In ancient India, only the Vedic texts were often the subjects of study. Rote-learning was the method used. Panini refers to this in his Sutras. Examinations in the recitation of such texts seem to have been contemplated. The examinee who made a single mistake in the recitation of the text was classified as a pupil of one error. Similarly, a pupil who committed two lapses was one of two errors. In this way, pupils were graded even up to 12, 13, or 14 lapses. A pre-determined standard of perfection was the norm and the process of evaluation was restricted to assessing the shortfall from the perfection. The teaching-learning process was not strictly limited in time; the concept of what we now call a minimum standard of attainment and the consequent ideas of pass and fail do not appear to have existed.

Examined from the educational standpoint, it is clear that the stress in the ancient teaching-learning process and evaluation was on memory. The importance attached to memorising was perhaps enormous and probably inevitable, as knowledge had to pass from man to man very largely through oral instruction. This technique is even now continued in certain institutions called 'Pathshalas'. This pathshala technique has influenced our schools and colleges too and is largely responsible for the stress we lay on the 'remembered matter' in our examinations today. It should, however, be pointed out that this stress on memory does exist in other countries too, but perhaps to a lesser extent.

2.05. *Impact of British Rule*

With the advent of British rule in India, there was a

specific shift in our educational system. Our rulers thought in terms of their basic needs. This is clear from the purposes for which the universities were established in 1857: "to ascertain by means of examinations the proficiency acquired by candidates" and "to provide a test of eligibility for Government service". The British planned for the education of Indians through the medium of English with the sole purpose of training suitable Indians for employment in the British Government or British Companies' services. Employment then was mainly in the clerical cadres. Since recruitment to service was related to an examination result, the concept of a minimum standard of proficiency and hence the concept of *pass* and *fail* automatically crept in. In all these examinations, the stress was on memory and this was accentuated by the general background of our own teachers, traceable to the old pathshala technique.

During the British rule, courses of study and the number of subjects to be studied for a public examination were revised from time to time. During the period when we were moving towards Independence, there was a desire among our teachers to bring the courses of study up to date. In this attempt, several new topics were included but correspondingly no attempt was made to eliminate topics which were of no consequence. Therefore, the syllabi prescribed for the different subjects, as also the number of subjects, became so large as to be beyond the capacity of the average student. With the rapid expansion of education, the quality of teachers available also deteriorated. Simultaneously, hundreds of sub-average students who should normally not have been admitted to courses of higher education began to crowd colleges and universities. This process has continued even after Independence. The net result has been an indirect encouragement to the growth of malpractices.

Restricted admissions at the higher stages of education and a careful check of the courses of study prescrib-

ed for an examination can help to reduce the factors which encourage malpractices.

2.06. *Importance of Examinations*

During the last 50 years, we have witnessed the growth of a semi-mechanical recruitment to jobs. In the past, there were long-duration interviews supplementing written examinations for the recruitment of candidates for employment. The selection committees, even for clerical posts, attached considerable importance to the personality of the applicant, his general knowledge and his performance in extra-curricular activities. This practice of an over-all assessment of a candidate has, for all practical purposes, gradually disappeared. This is partly due to the fact that there is a feeling that the interview is a cloak for favouritism and nepotism. Another reason for mechanical methods of recruitment is the fact that the number of applications received in response to a single advertisement is unmanageably large. This forces those concerned with selection, to avoid giving weightage to extra-curricular and other activities and to adopt a clerical approach to the selection of candidates. In this technique, the percentage of marks secured by the candidate at the public examination becomes the sole criterion for selection. The marks secured by a candidate are subject to considerable error. Appendix 7, page 3, shows how unreliable the results of public examinations can be. In the circumstances, to consider a candidate who has secured 58.5% superior to one who has secured only 58% is meaningless. Yet, this is not only what the public believe, but also educationists, with few exceptions.

Even in considering the admission of students to higher classes in schools and to the universities, the percentage of marks secured by a candidate appears to have become the sole criterion.

As a natural consequence of what has been described above, students, parents and employers today think only in

terms of the marks secured by a candidate in a public examination. As a result, students at school and college have started neglecting their regular work. They are more interested in finding means and methods of securing more marks in examinations. This has resulted in the mushroom growth of coaching classes and a proliferation of 'guides' and cribs. It is not uncommon to find students studying these 'guides' only for about a fortnight before the examination or even to find 'guides' which provide a final check as the student enters the examination hall. Surprisingly, some of the questions from these 'guides' do appear in the examination papers. Various forms of links, real and imaginary, are established by the students between the paper-setters and 'guide' writers. For the sake of their further advancement, many students strongly feel that to get more marks, by any means, fair or foul, is far more important than anything else. They believe—and sincerely too—that one way of getting on is to sin once in the examination and thereafter forget about it. Several students have now begun to think that indulging in malpractices is just a way of life; some, by their behaviour, give the impression that they think it is a fundamental right! The most deplorable aspect of the matter is that parents and teachers are also concerned only with examination marks and not with the means by which the marks are obtained. The real processes of education are fast disappearing and its higher objectives are losing significance. This accounts for irregular attendance, indifference to the value of scholarship and complete loss of love for learning.

2.07. *Class Examinations in Schools*

In most of our schools the work of the pupils is assessed mainly through a few written examinations conducted during the year. Either because of the large numbers involved or because of the heavy work, teachers make no effort to use processes other than the written examinations.

These annual and bi-annual examinations are internal examinations conducted by the teachers themselves. Even these examinations tend to accentuate the fear complex in pupils. Part of the blame for the development of this fear complex must be shared by the teachers, some of whom frighten their pupils of the consequences of failure, leading, *inter alia*, to the loss of one complete year. This often forces pupils to indulge in malpractices even in these internal examinations. Malpractices are sometimes encouraged. Where a teacher is giving students private tuition, the teacher concerned takes a 'special interest' in them. Sometimes individual members of the boards of managements exert pressure to ensure that certain pupils are passed. This starts off a train of malpractices. There can be deliberate leakage of question papers, surreptitious assistance may be provided and copying connived at. Thus, bad institutions can initiate pupils into malpractices during the early stages of their education. If this happens, pupils are nurtured in an atmosphere of malpractice and come to rely on various forms of malpractice to ensure their promotion from class to class. The contagion is carried from one institution to another and is enough to infect pupils when they appear for a public examination. The virus spreads—and spreads fast—infecting almost every educational institution and almost every pupil.

2.08. *Public Examinations*

Most of the public examinations conducted in our country are concerned with very large numbers of candidates. The conduct of these examinations follows more or less a traditional pattern. This is described in the sections which follow.

2.09. *Question Papers*

A paper-setter or a board of paper-setters is appointed to set a question paper/papers in a subject. After the papers are so set, they may be passed on to a moderator

board of moderators. Thereafter, the paper is ready for administrative processing.

There are several defects in this procedure. In order to maintain secrecy, many authorities appoint paper-setters and moderators just before the examination. The time given to them to set the paper or moderate it, is extremely short. Most of them have to attend to this work in addition to their normal duties. Therefore, the papers are set without the necessary thought and planning. Consequently, a paper may not be strictly in accordance with the syllabus; the questions may not have been distributed evenly over the syllabus; the questions may ask for too lengthy answers with the result that even the best prepared examinee cannot answer the questions properly within the set time; the problems set may be either out of the syllabus or may be such that they cannot be solved; the language of the questions may be ambiguous. The existence of such defects in the examination papers upsets candidates and leads to protests and disorder even when the candidates have absolutely no desire to indulge in malpractices. In several examinations, there is more than one medium of examination. The paper set is translated into different languages. The translation, in spite of precautions, can leave room for ambiguity. All the above defects are easily remediable. If paper-setters and moderators are appointed sufficiently well in advance, most of the defects mentioned can be removed. This will improve the fairness of the examination and prevent unpremeditated demonstrations, confusion and disorder at the time of the examination.

2.10. *Printing of Question Papers*

In one system which appears to be the more common, the paper set is printed confidentially at some press. Copies of the paper so printed are packed in lots of 100 or so, and sealed. Such sealed packages are then transmitted to the superintendents of examinations at examination centres.

The sealed packet is expected to be opened in the examination hall by the superintendent on the day of the examination, just before the commencement of the examination.

In another system, cyclostyled copies of the question paper set are sent to all the centres. At each centre, arrangements are made to print the paper locally for the examination.

In the first system, imperfect packing can lead to question papers being removed from the bundles. Sometimes the sealed cover is ingeniously cut. It is also not uncommon for the paper to leak out through the press itself. Thus in the first system there are many sources of leakage. In the second system, the leakage may take place both at the stage of cyclostyling and local printing.

In both systems, papers can of course leak out through the examiners and moderators, sometimes deliberately and sometimes through lack of precaution.

Prior to the commencement of an examination, the malpractices indulged in by students, parents or teachers consist in making attempts to get a copy of the paper or at least some questions in the paper through one or more of the possible sources indicated above.

In some parts of the country, it has been alleged that the leakage of question papers is more or less a routine matter. Consequently, students assume that the question paper *must* and will inevitably leak out. They imagine there is some link between the paper-setters or the press and those responsible for writing 'guides' or running coaching classes. This forces them to place undue emphasis on expected questions in 'guides'. Often, they cannot understand the answers to the questions and do not have the capacity even to cram the answers. In such cases, they smuggle notes into the examination hall by one device or the other. Some unscrupulous persons carry on a lucrative trade selling question papers claimed to have leaked out. These question papers, in reality, are the result of mere guess work and a large number of gullible examinees

fall for them, only to find ultimately that the question paper actually given to them at the examination is totally different. In many places, such deception, it is reported, has become commonplace.

2.11. *Malpractices during Examinations*

Some students prepare (or get prepared) answers to expected questions, or mark out pages of a book or a 'guide' where the answers are available and smuggle the material into the examination hall. Answers or the points required for an answer have been known to be written on muslin handkerchiefs, on stockings, on pieces of paper pushed into shoes. Not to lag behind boys in this respect, girls have also been reported to have devised several ingenious ways of making use of their blouses and undergarments for concealing answers to expected questions. Students have been known to write out the question paper quickly, go out and leave it in the closet or elsewhere. Thereafter, their tutor picks it up, writes the answers and leaves the answer-book in the same spot. This is retrieved by the students before the examination is over and handed to the invigilator. Sometimes, when the questions are known, it has been reported that the answers are dictated question-wise through loudspeakers!

It is disturbing that the existing laws are inadequate to deal with these malpractices effectively. Governments and legislators must recognise and discharge their responsibility in this respect.

Mass copying or large-scale malpractice cannot ordinarily be *indulged in*, in an examination hall without the connivance of the invigilators, some of whom, according to reports, directly assist the candidates. Some of the invigilators do not hesitate even to write answers on the blackboards. All this is only a continuation of the numerous malpractices prevalent in the entire educational process and in which the teacher is known to be playing a pivotal but disastrously unworthy role. This underscores the need for selecting men and women of integrity and character as

invigilators. As a general observation, this may appear platitudinous, but at some point a beginning has to be made to secure men and women of moral fibre to carry out their responsibilities with courage and impartiality. Shrewd and unscrupulous examinees are today adopting unfair means which ordinary invigilators are not able to detect. The work requires a high measure of competence and extraordinary alertness. It would seem, therefore, that in addition to integrity, the efficiency of the invigilator is an equally vital factor in dealing effectively with malpractices within the examination hall. Where malpractices originate because of outsiders in the vicinity of the examination hall, the presence of such outsiders, within a given distance of the hall, will have to be banned.

The show of naked weapons of offence by examinees in the examination hall is a new and alarming feature. Invigilators are threatened and are afraid to act even when unfair means are being used blatantly. The remedy is to restrict entry into the examination halls through one entrance, check identity cards, search the candidates for weapons before admitting them into the hall; this may also require suitable legislation.

2.12. *Disorder and Violence*

There is disorder in the examination hall when some grievance, real or otherwise, is discovered. The question paper may have been badly printed; it may contain questions which are outside the prescribed syllabus, or ambiguous or not well distributed over the syllabus. In all such cases, students are perturbed and there is commotion and confusion. Such disorders can be avoided by announcing in the examination hall that suitable measures will be taken to moderate the results. The best measures, of course, are to take the required precautions in the setting and printing of question papers.

In many cases, however, the disorder is created as a prelude to large-scale malpractices. The resultant tension

makes detection of malpractices more difficult and risky. The conscientious invigilator becomes nervous when he finds that by doing his duty he will be inviting more trouble. One interesting aspect of this situation is that when a large number of candidates are indulging in malpractices and one of them is caught, he feels that an 'injustice' is done to him. He may even lose his temper and resort to violence.

The most disquieting feature is that in the context of mass indulgence in malpractices, the honest examinee and the conscientious invigilator, both become victims. They have to suffer in many ways, including violence and a perverted ostracism. Naturally, they too ultimately tend to 'toe the line' more often than not.

2.13. *Malpractices after the Examination*

After the examination is over, some students attempt to get back their answer books so that they may insert additional material or make corrections in their answers. Some students approach the examiners to enhance the marks secured by them. In some cases, influential people approach the examiners. In all such cases, the first attempt that is made is to find out the name of the examiner and his address. Thereafter, attempts are made to trace the manner in which answer books are transmitted to the examiner. It is not uncommon for some very desperate students to threaten examiners of dire consequences, should they refuse to oblige. Cases have been known where such refusal to oblige has resulted in the examiner being assaulted, injured and even killed. Money is also said to play a more significant role at this stage than threats of violence. Those desperate examinees who cannot afford the monetary inducement required to influence the examiner, resort to intimidation and violence, to secure the same ends.

If a students fails to bribe or coerce the examiner, the next step is to try the methods of monetary inducement

or intimidation on the officers, clerks and peons in the examination office.

Typical and well-known methods of malpractices have been described above, but human ingenuity is unlimited, and new methods and techniques come into vogue, as necessity arises.

In some States, all answer books are brought to a few centres and the examiners are posted to the centres for conducting spot evaluation. No examiner will then know in advance the number of answers books which he will be assigned. He will be required to complete the assessment of the answer books, on the day they are given. By this method, the possibility of malpractices mentioned in the preceding paragraphs is reduced considerably. It would, therefore, be worth while for other States also to adopt the method of spot evaluation.

While, as pointed out above, spot valuation has certainly minimised some of the obvious malpractices, the experience of the States adopting this scheme indicates that it requires improvement in several respects. Spot evaluation is considered by some teachers as too strenuous, forced and mechanical. It is alleged that the quality of such valuation can never be on a par with the one done at leisure and at will. Here too, some persons are alleged to have 'managed' to secure undeserved marks to their 'clients'. This is said to have become a lucrative practice for them. These defects are, to a large extent, remediable inasmuch as the level of efficiency and reliability of spot valuation can always be improved by affording better facilities, reasonable reduction in workload wherever warranted, counter-checking to ensure better quality and objectivity in valuation. In order to eliminate malpractices by examiners, answer scripts should be allotted to them on the basis of random selection. This is already being done in some States and meets the situation adequately. However, if in addition to spot valuation, code numbering of answer scripts is also adopted, the scheme will become almost foolproof.

Malpractices at the examination office can be eradicated and eliminated by resorting to machine tabulation, or by the careful selection of personnel and proper supervision and organisation of tabulation work. Several organisations have succeeded in eliminating malpractices by taking these precautions.

2.14. *Reliability of Examination Results*

By and large, in the majority of our examinations, essay type of papers are set. A typical report on the reliability of the essay type of examinations is reproduced on page 1 of Appendix 7. This points to an improvement in our present examination system which, by and large, is an attempt to test the memory. In this connection, an analysis of an examination paper carried out elsewhere and reported on page 2 of Appendix 7 should prove interesting.

Where tens of thousands of students appear at an examination the reliability of the results of the examination is open to question. One examiner cannot obviously examine the answer scripts of all the candidates. Therefore, a large number of examiners are appointed. Groups of such examiners have a moderator. All these moderators together may have a Chief Moderator. Initially, outline answers are given and the examiners instructed on the pattern of the marking they are required to follow. A small percentage of the answer scripts marked by one examiner is seen by a moderator who suggests changes in the marking where necessary. In this elaborate process, there can be serious errors in the marking. The variations in marking can easily be as wide as 5% either way. Consequently, a significant percentage of students who deserve to fail, pass, and an equally significant percentage who deserve to pass, fail. Further, if one were to rank the students on the basis of their grand totals, the ranking can be in serious error. Therefore, the sanctity that we attach to 'raw' marks at present is by no means unquestionable.

For an analysis of the value to be attached to 'raw' marks see Appendix 11.

2.15. *Crisis of Character*

Some of the malpractices indulged in at our examinations have been described above in some detail. The list is by no means exhaustive. However, the Committee hastens to add that in our country today, recourse to malpractices at examinations is *not* to be taken as *universal.* Any impression to this effect would do great injustice to millions of honest and hardworking students and thousands of conscientious teachers, examiners, invigilators and administrators, not to speak of innumerable parents. The present incidence of malpractice, which naturally varies widely from State to State and even within the same State, is still not irredeemably high. What is disturbing, however, is the undeniable fact that the incidence is on the increase and, therefore, immediate effective remedial measures are urgent. In a way, it is only a corollary and a reflection of the crisis of character facing the entire world today. But this generalisation, comforting though it may sound, should not be taken as an alibi for those in charge of conducting the evaluatory processes in our educational system. The stakes here are too high and the consequences too far-reaching to admit of any complacency or compromise. Malpractices at examinations really amount to the initiation of a child into a dishonest way of life at a very early age. Educational qualifications acquired through malpractices can lead to total inefficiency of the nation, sapping its vitality and leaving a diseased body politic. It is, therefore, imperative that the educational process must be kept clean and inspiring. The young must be saved from early cynicism and unrepentant criminal propensities. This then is the real task.

3. EXAMINATIONS

3.01. *General*

In any consideration of malpractices at examinations, the form of the examination and the method of conducting it are important. When examinations are scientifically designed and organised, malpractices decrease in a significant measure. Therefore, the general problem of examinations and their distinguishing features are discussed in this chapter.

Examinations can be broadly classified as (a) written examinations, and (b) practical/oral examinations. Written examinations are restricted in scope to test the scholastic characteristics of an individual. Practical/oral examinations attempt, largely through observational techniques, to test special skills, ability to speak or capacity to make the combined use of the mind and the hand. For several subjects, practical examinations are extremely important. Thus, skills in handling apparatus and equipment, skills in diagnosing a patient, ability to speak fluently in a language, ability to sing or play a musical instrument, etc., can only be tested properly through a practical examination. The current view is that a short-duration test is not adequate to test such skills. Further, when large numbers are involved, it is impossible to streamline the operation of such short-duration tests. Consequently, the scope for malpractices becomes large. In many countries of the world, the teachers concerned are asked to make a continuous assessment of the students by watching their work and conducting such tests as they deem fit. On the basis of such continued observation and testing, the teachers concerned are asked to assess their students. The results of such assessment are utilised for the over-all evaluation.

Where necessary, the internal assessment of the teachers is subjected to external moderation. Even this process is not regarded as foolproof. Currently, particularly in science subjects, project work is encouraged and this is considered to be a good substitute for practical examinations.

Written examinations can be classified as internal and external. In the internal system, the teachers concerned assess their students. In the external system, an examining body like a board or a university arranges for the conduct of the examination. There is, besides, a third system. In this system, internal assessments following standardised procedures are subjected to external moderation. It is believed that this system has all the advantages of both the external and the internal systems of examination.

In what follows, the objectives of written examinations and other problems related to them are first discussed. An attempt is made to discuss problems facing our country. Thereafter, some novel ideas are mentioned.

3.02. *Achievement Test*

A written examination can be restricted in scope to constitute an achievement test. In such a case, an attempt is made to find out whether what has been taught has been assimilated by the student for the purpose for which it was meant. Thus, consider a radio service man. He is taught about a radio receiver, its faults, how to locate such faults and then how to proceed to rectify the same. If he has learnt all these properly and if he can apply his knowledge to service a receiver, he has achieved the objectives of the instruction imparted to him. An achievement test of this type can be designed and conducted without difficulty.

If the framers of a curriculum set out clearly its objectives, a proper examination can be conducted to find out whether the objectives have been realised. This implies that the framers of the curriculum should define the manner in which an examination should be conducted. Often this is not done. In the field of school education, current

thinking has gone a little further. The development of a curriculum is expected to be accompanied by a proper description of the procedures for instruction including the use of aids and the procedures for the conduct of an examination. Curriculum is expected to be developed in relation to the future of the student. This lays considerable stress on the application of knowledge and the capacity to think. When this educational problem is taken into account, the design of the question papers gets altered. Further, in order to make an examination unambiguous, questions are carefully prepared paying special attention to the wording of each question and the language.

If achievement tests are conducted on the lines indicated, there is very little scope for cramming and the relevance of the curriculum will have created zest in the students. Consequently, the attempts to indulge in malpractices get reduced.

3.03. *Prediction Test*

In several cases, written examinations are conducted to predict whether a student is suitable for a particular course of study, a vocation or a specific type of service. In such cases, the examination becomes a prediction test. Suppose it is necessary to find out whether a student is suitable for a course of study in a particular branch of science and that particular branch has already been studied by the student; then it becomes possible to formulate a test to predict the suitability of the student for the particular course. The problem becomes more difficult in other cases. Thus, suppose a student has studied science and he has to be considered for a course in engineering or medicine, using his attainment in science alone is not adequate for predicting his suitability for engineering or medicine. Hence, several auxiliary tests will have to be devised to supplement tests in science only.

The above description makes it clear that a prediction test can be conducted only for a specific purpose. There-

fore, different prediction tests are required to be conducted for different purposes.

3.04. *Endurance Test*

For certain types of vocations, the suitability of a student can only be determined by testing his capacity to stand intellectual stresses and strains for extended periods of time. In such a case, the test becomes an endurance test. Ordinarily, endurance tests are carried out by making candidates choose a variety of subjects and answer a large number of question papers at one sitting. Thus, candidates may be required to answer one or two question papers each day for several days. The number of papers and the period over which such papers have to be answered are regulated by the type of endurance that has to be tested.

3.05. *Ranking*

Sometimes, candidates who have gone through different courses of study for the same subject or group of subjects, have to be ranked in order of merit for certain purposes. The ranking has to be done on the basis of their ability in the subject. Ability here implies competence to study in depth and apply the knowledge acquired in the subject or group of subjects.

One procedure for this type of testing or examination in which ranking is justifiable is as follows: Paper-setters, after taking into account the different courses of study provided for different groups of students in the same subject, design and set a number of question papers. At least three question papers of this type would be necessary. The objective of each paper would be to test the capacity of the candidate to understand the subject and to apply the knowledge he has. The answer scripts for each of the papers are examined by at least two examiners. The 'raw' marks assigned by such examiners to all the papers are statistically processed and each examinee is assigned a

standardised mark. The rank ordering is done on the basis of candidates' standardised marks. As regards the use of such a test for ranking, the procedure described is reasonably adequate. But, it is not 100% infallible. In this connection, it is also necessary to mention that the potential of a candidate may itself change.

3.06. *Numbers*

In the past, numbers were comparatively small for even Public Examinations. Hence, it was possible to design and administer tests reasonably satisfactorily for specific purposes. Difficulties increase in proportion to the increase in numbers. In fact, a major problem facing the world is the one for conducting examinations for large numbers and declaring the results within a very short time thereafter.

There is no escape from this increase of numbers, in the context of free and compulsory education in the elementary stage and the rapid expansion of educational opportunities at all higher stages. Any system of examination in today's context should, therefore, be geared to cope with the ever-increasing numbers of examinees and the consequential stresses and strains.

In this age of technology, students trained during the next few decades will be living their useful span of life in the twenty-first century when the impact of technology on life will undoubtedly be much more than today. In that situation, employment opportunities can exist only for those who have been trained in the more and more sophisticated fields of technology. Consequently, the field of employment for the uneducated and the semi-educated will go on shrinking. This also indicates that one has to think in terms of an ever-increasing input into the educational system at all levels.

3.07. *Question Papers*

The type of questions asked and answered at an

examination has a profound impact on the results, both qualitatively and quantitatively. Setting a question paper is now almost a science. There are several types of questions, such as the objective type, the essay type, the problem type, each of which has its own merits and demerits. In the case of the objective type, it is possible to have a large number of questions in a question paper to be answered within a set time. Such a large number of short items ensure a wide coverage of the syllabus. In fact, candidates can be examined on a sampling of the whole syllabus. Hence, objective type questions are expected to produce a more comprehensive measure of assessment. Further, because each objective type of question has a correct answer, the grading can be uniform. Against these advantages, it is contended that such questions may err by putting too much emphasis on verbal facility and comprehension, and that they promote superficiality of reasoning. They are not considered adequate for testing the capacity for sustained analysis and creative thought. It is also argued that in answering objective-type questions, candidates can obtain substantial scores by guessing without making any attempt to reason out the right answers. The scope of objective type of questions is not confined to memory for facts, well constructed intelligent questions can bring in the understanding and application of principles. The defects complained of are thus, by and large, remediable. Further, where large numbers are involved, apart from uniformity of grading, this type of question makes for more rapid marking and can even be done without skilled examiners. The setting of such question papers, however, requires the services of technically competent experts and subject specialists and requires much more time than for a traditional-type paper. The cost, too, is much greater. But, in the interests of greater objectivity and reliability, this additional cost has to be borne.

Next, there are the conventional essay-type questions. This has been the common type prevailing in our country. Such questions are believed to bring out adequately the

capacity for analysis and synthesis, and facility of expression and, when properly framed, give broad indications even of creativity. But in this type, the marking is more subjective, and, therefore, less uniform, and the margins of variation in valuation can be very great. These disadvantages have, of late, weighed against the essay type of questions in Public Examinations involving large numbers. Incidentally, examined on a world basis, we still do not have a proper type of questions for identifying creativity, although problem-oriented questions are being used in attempts to test the creative behaviour of the mind. Such problem-oriented questions can be either of the objective type or the essay type.

Short-answer questions are now being introduced increasingly, as, in this pattern, a large number of such questions can be set, and the answers being more specific, facilitate uniformity in marking.

It has been contended that a close-book examination is bound to lay some stress on memory. In the present-day world, however, memory is no longer a very important factor. Information is easily available and can be easily obtained from reference books. Therefore, an open-book examination system is often recommended. Questions set in an open-book examination must be so framed as to require the marshalling of data and culling out of information from different sources and above all the application of knowledge. This will undoubtedly test a wider spectrum of the intellectual ability of a candidate. It is, however, necessary to mention that setting questions for an open-book examination is a very difficult task and requires considerable expertise, coupled with imagination. It is indeed a test of the paper-setter himself!

The type of questions to be set in a question paper or the variety of questions to be set in a number of question papers for an examination depends, obviously, on the purpose for which such an examination is conducted. If an examination is a multipurpose one and the large variety of objectives which it is meant to serve are indeterminate,

compromise choice of types of questions will have to be made. There could be a blending of objective and essay-type questions. In such a case, the essay-type questions should be characterised not by factual accuracy but by the stress on imagination, ideas, fluency, and a deep understanding of the subject. In addition, it may be desirable to have at least one question paper of the open-book type in view of its distinct advantage. To work out a complete scheme of examination with multipurpose objectives is a complicated task. The number of question papers, the distribution of questions in each of the question papers into different types, the duration of the question papers and the number of such papers that should be answered in continuous sequence become important problems for scientific study leading to the required decisions.

3.08. *External Assessment*

When examinations are organised and conducted by an agency, other than the institution training students, for all the students of a group of institutions coming under the purview of the agency, the assessment carried out is regarded as an external assessment. To this extent, the Public Examinations in our country as conducted by the different universities for all their affiliated or constituent colleges and the examinations conducted by the appropriate school boards are Public Examinations. In all such Public Examinations, the teachers concerned do not get directly involved in the examinations. Ordinarily, such Public Examinations are not conducted with a specific objective in view. Thus, a Public Examination may be conducted and the results of such an examination utilised for a large number of purposes. Actual testing is restricted to a candidate answering a question paper or a series of question papers, each within a set time-limit.

3.09. *Internal Assessment*

The teacher concerned has always been regarded as

the best judge of a student. Utilising this principle, internal assessment of students by teachers of the institution concerned has been adopted in some institutions in our country and elsewhere. But, it is necessary to stress here that internal assessments create many problems. If all of them are adequately examined and solutions found, internal assessments could be regarded as satisfactory. In an internal assessment, it is necessary that a variety of tests are administered, proper statistical weights given to each and then an over-all grading arrived at as a true index of the capabilities of a student. Further, there can be room for prejudice. There can be occasions when the student is not in the best of spirits. Taking all such factors into account, it may be necessary to resort to an over-all average of a student's performance over a period of time like two or three years. Thus, a higher secondary grading in Hindi may be based on the over-all grading of the performance of the student during his last three years at school. There are also other questions relevant to internal assessments. If a class has four divisions and each division is taught by a different teacher, what is the procedure adopted to realise uniformity in the results of all students in the class? Similarly, from the standpoint of measurement of intellectual capacity, etc., what is the procedure adopted to realise uniformity in the assessment between one subject and another? Such and many other problems exist. Even an internal assessment requires continued research to improve its reliability and validity.

If internal assessments are made for general purposes, it becomes necessary to make the results of one institution comparable with those of others. A way out for realising some uniformity is now being attempted in some countries. In this attempt which is limited to the examination of internal assessments of scholastic characteristics only, techniques are being developed for external moderation. It is felt that internal assessments subjected to external moderation can give results which are as satisfactory or even more satisfactory than those of Public Examinations. However,

other views have also been expressed. It is felt that the results of internal assessment and the results of Public Examinations with question papers having questions of different types should both be utilised for furnishing the results of students. In another type of thinking, it is felt that the results of internal assessment and of Public Examination should both be furnished to the candidates separately in the certificates issued to them. The latter view receives support from the fact that an internal assessment should desirably be not limited to test the scholastic characteristics only. In such a case, the teacher's over-all estimate of a student can definitely be different from the estimate obtained through a Public Examination.

3.10. *Our Examinations*

In most cases, there are Public Examinations conducted by the universities and State Boards of Examination. In a limited number of cases, a few institutions are conducting what is called internal assessments. Broadly speaking, therefore, Public Examinations are the examinations of vital importance to the country as a whole. In such examinations, as mentioned earlier, the tendency is to set a large number of essay type of questions. The objectives of the examination are rarely defined. The results of such an examination are used as a criterion for far too many purposes. In view of this, both the reliability and the validity of the results of our examinations may get considerably reduced.

Research on examinations has had its impact on the conduct of examinations elsewhere. Unfortunately, in our country, this impact has been very insignificant. There are two reasons for this. Firstly, any change would also imply additional expenditure. Since no separate funds have been set apart for improving examinations, it becomes difficult to allocate additional funds. Secondly, there is a gross defect in our outlook. Even though an examination as conducted is defective, the defects are forgotten. When an innovation is suggested, it is severely criticised. It is

rarely realised that there is nothing perfect and an innovation aiming at bringing about some improvement should be tried. By criticising everything new, attempts for innovations get thwarted, and the old and defective system is allowed to continue. What is really necessary is a change of outlook enabling us to take an enlightened view of any change that is suggested. This change of outlook is far more important than the mere allocation of additional funds.

The Public Examinations as they developed during the British rule were tests of the versatility of a student and of his capacity to stand intellectual stresses and strains. This type of examination was planned because the results of it were used by our rulers for the same purpose for which they used the results of an open competitive examination for the civil service.

The practice is still continuing in many of our universities and State Boards of Education. Candidates are asked to sit for a large number of papers on successive days, answering sometimes two papers a day. This has, however, now degenerated into a simple stipulation that a candidate should pass in a certain minimum number of subjects at one such examination. Nowadays, in many cases, the time-tables of Public Examinations are often so arranged that a candidate is not required to appear for more than one paper on one day. Some authorities have gone out of their way to provide intervals of one or two days between one paper and another. Consequently, the concept of an endurance test as originally visualised has practically disappeared.

Candidates who pass in all subjects in one sitting are eligible for a class. A candidate who fails in a certain number of subjects is required to sit for the whole examination on another occasion. In some cases where a candidate has failed in one or two subjects, he is permitted to appear in those subjects only at a subsequent examination. This is known as the compartmental system of pass-

ing. Sometimes, marginal failures are condoned by the award of grace marks.

Summarising, the original concept of an endurance test has disappeared. Examined from the educational point of view, it has no relevance. Therefore, it would be more appropriate to introduce what is called subject examinations and award the public examination certificate on a candidate's showing that he has passed in the requisite number of subjects. Requiring a candidate to take all subjects at one sitting should now no longer be compulsory.

3.11. *Marks and Grades*

The current practice in most of our Public Examinations is to measure the candidate's performance by assigning a mark to an answer script. Suppose there is a paper of three hours carrying 100 marks. The examiners are asked to award numerical scores while assessing the answer scripts. The marks can range from 0 to 100. This is called the hundred and one point scale because, including 0, there are in all 101 units of measurement. The implicit meaning of having such 101 steps in marking is that a candidate who scores 46 is superior to one who scores 45, and so on. Such an inference may be correct when the mark is a 'true mark'.

Unfortunately, the mark given by an examiner is a 'raw' mark. Such a mark is subject to two types of uncertainties.

The first type of uncertainty is about the thing to be measured which is called the candidate's performance. This is invariably ill-defined. The mark may be a measure of the candidate's ability or knowledge or memory or intelligence or power of expression or a combination of one or more of these characteristics. As discussed elsewhere, in our country, the purpose for which an examination is conducted is ill-defined. Not much attention has so far been paid to the designing of a question paper in such a way that it attempts to test the objectives for which a syllabus has been framed. As mentioned earlier, a Public

Examination appears to be treated as both an achievement and a prediction test. Under the circumstances, there is a large measure of vagueness about what is being measured. Hence, until a precise tool for the measurement of specific attainments is prepared, the element of uncertainty on what is measured will continue to exist. The consequences of this uncertainty on the mark awarded by an examiner to an answer script are fairly serious.

The second type of uncertainty arises from the fact that it is assumed that there is a 'true mark' for each script. Such a 'true mark' can only be assigned by an ideal examiner, who does not exist. The actual examiner, at best, makes only an estimate of this 'true mark'. This estimate is, therefore, a 'raw' mark and is subject to considerable error. Statistical analysis has shown that when an examiner assigns a mark to a script, *there is 50% chance that his error is greater than 5%*. This means that when a candidate is awarded a 'raw' mark of 41, the 'true mark' may be either above 46 or below 36 in 50% of the cases. Under the circumstances, the hundred and one point scale where candidates are distinguished in steps of one mark loses significance. It is this fact which has made research workers do some rethinking. Further, there appears to be no sanctity for drawing rigid lines in the marking scale, viz., considering a candidate securing less than 40% as having failed or considering a candidate who has secured 60% as having passed in the first class. It is obvious, therefore, that the 'raw' mark assigned by an examiner, to an answer script, when furnished to the candidate, can and does mislead the public into assuming that the mark so furnished by the universities and boards of education is a 'true mark'. The consequences of such an assumption are serious in as much as the mark, as furnished, forms the basis—an erroneous basis, as we have seen—on which the candidate is considered for employment and for admission to higher courses of study. In view of this importance attached to the mark assigned, several candidates indulge in malpractices to secure higher scores.

The public have not been kept informed of the inaccuracies that creep into our current marking schemes. It will take a long time to educate our public to realise the limitations of any marking scheme and the errors to which it is subject. Under the circumstances, the only way for preventing the public from using the mark awarded to a candidate for purposes of employment and for admission to courses of higher study is to avoid furnishing 'raw' marks to candidates appearing at Public Examinations. Once this is done, the employers and those concerned with admissions will be forced to conduct suitable tests for recruitment and for admission. Such tests could be prediction tests more relevant to meet the requirements of the situation.

When the practice of assigning a mark is discontinued, the question that poses itself is one of choosing a suitable alternative.

The manner in which the result of an examination should be furnished has engaged the attention of experts in all countries. It appears that, in a majority of examinations in the advanced countries of the world, the trend is towards adopting what is called a five point scale. In this technique, all the candidates who appear for the examination are graded into five groups; grade 1 signifying the best and grade 5 the weakest of candidates. Candidates in grade 5 may be regarded as failures in our current mode of thinking. It should, however, be pointed out that educationally it is an unsound practice to dub a candidate as having failed.

The five point scale furnishes the results in the form of five grades. It is significant to note that the concept of achievement in the grade system is quite different from that in the hundred and one point scale mark system. Ideally, in a grade system, an answer script is assigned one of the five grades. Where extremely necessary, it is not impossible to assign grades to each of the questions that a candidate has attempted and then to assign an over-all grade to the answer script as a whole. The system of de-

claring the results in terms of grades and the manneer in which it has been practised elsewhere will be clear ffrom a study of Appendixes 2 and 5.

Ideally, the result of an examination should be declared by assigning appropriate grades in each subject to a candidate. Should, however, there be a desire to retain the current tradition of classifying students on the over-all performance in the examination into first, second and third or pass class, it is always possible to assign a similar over-all grade on the basis of the grades awarded in individual subjects. Whether this should be done is a matter for administrative decision but the over-all grade has the same significance as the first, second and third or pass class, awarded on the basis of the accumulative total marks of the candidate. It has, however, the advantage that the over-all grade is more rational than an arbitrary classification on the basis of arbitrarily defined rigid boundaries like 40%, 60%, etc.

It may be difficult to train all our examiners to value answer script on the grade system overnight. In such a case, as an interim measure, it may be possible to permit them to assign a 'raw' mark to an answer script and then convert the same into grades following the procedure described in Appendix 11. Such a step should, however, be regarded as an interim measure.

With the introduction of the grade system, employers and those concerned with admissions to institutions can only use the grade awarded at a Public Examination for making a preliminary selection of suitable candidates. Actual selections will perforce have to be done through separate tests, designed for individual purposes. Needless to say that in the changed system, malpractices of the kind prevalent at present get considerably reduced.

3.12. *Novelty in Conducting an Examination*

Some interesting experiments have already been carried out elsewhere and they deserve to be adopted in our own country. At present, if there are 10 candidates who

are to be examined in one subject, one question paper is set for all of them and their answer scripts are evaluated; they are assigned numerical scores which again may be graded on a five point scale as suggested earlier. Instead of the above, suppose 10 different carefully designed question papers are set and given one to each of the 10 candidates, each thus being tested through a different question paper. When the answer scripts of these 10 candidates are examined, and grades assigned to them, it will be found, interestingly enough, that each candidate gets the same grade as he obtained on the common question paper. This technique of examining can be utilised to eliminate copying. In this scheme, even if question papers leak out, it is of no significance, since no candidate can know which question paper he is likely to get. If he prepares for all the 10 question papers, he has effectively prepared himself for the entire examination and, therefore, merits passing. Thus, copying and the harmful effects of leakage of question papers are eliminated. As matters stand today, however, the public will not be prepared to accept the validity of this method. Many members of the public would protest saying that examining candidates with different question papers is unfair and that the examination result is invalid. The possibility of this method being challenged in a court of law on grounds of discrimination cannot also be ruled out. Therefore, before introducing such a scheme, it will be necessary to educate the public to accept such a scheme as valid and reliable. In order to do so, it is necessary to conduct pilot experiments in schools and colleges and publish the results of such experiments. In this way only can the parents, students, employers and the public be persuaded to accept this method of examining as normal.

3.13. *Novel Way of Dealing with Numbers*

When a lakh or more students appear at a Public Examination and when the examination has to be conducted

at different centres, several complications arise. Thuus if the paper has leaked out at one centre, the examinaation has to be cancelled for all centres. One way of overccoming such difficulties in mass examinations is to adoptt decentralisation. Thus, for each group of about 10,000 students, a separate examination should be conducted with different question papers, examiners and time table. Iff all the question papers in a subject are set by the same grroup of examiners and properly designed, the results statistically processed in each subject and furnished in the formn of grades will be reliable and valid. This follows from the discussion in the previous paragraph where an exampple with 10 students being given different question papers was given. Examined on a scientific basis, decentralisatiom is not incompatible with uniformity, and is, therefore, strcngly recommended.

3.14. *Novel Way of Paper-setting*

In our Public Examinations, Boards of Paper-settters are appointed to set questions, moderate them and furnish outline answers. A very large number of teachers who are involved in the teaching-learning process at schools and colleges are not given an opportunity to participate in the process of paper-setting. Further, the process assumes that the few paper-setters chosen are the best and possess all the expertise.

This defect in paper-setting can be overcome. Every teacher teaching a subject in an institution is intimately connected with the problem. He can be asked to set questions and prepare outlines of the answers and send both to the examining authority through the head of his institution. In this way, a very large number of questions together with outline answers prepared by practising persons, become available. The examining authority can appoint a small board to scrutinise all such questions, and the paper-setters can draw upon them. In this way, the authority can prepare question papers with well thought out questions.

For the questions selected, the teachers concerned could be paid an honorarium.

The above technique is expected to improve question papers. It will bring a sense of participation to all the teachers concerned. In view of these considerations, the experiment is worth trying. There should be no objection to groups of teachers teaching a subject preparing such questions and answers.

3.15. *Project Work*

The difficulties of assessing students for creativity and initiative, and, the testing for special skills in the laboratory, etc., have been realised on an international basis. One of the solutions suggested is the alteration of the technique of evaluation. Particularly in science subjects, it is now a common practice to make students devote a measurable proportion of their time in the final year to what is called project work. In this scheme, students in consultation with their teachers take up a project, read about it, execute it and write a report about the same. The entire work so done is subjected to assessment. Project work is now emphasised even at the school level in many countries. The manner in which the project work is given and assessed at the school stage is indicated by certain write-ups pertaining to them on pages 3 and 7 of Appendix 7. There is no doubt that what has been reproduced is capable of modification and improvement. The object of reproducing them is merely to show that our universities and boards should also think quickly in terms of introducing project work at the school level and develop procedures for evaluating the same. So far as the first degree of the universities are concerned, the injection of project work is overdue. At the postgraduate level, in certain faculties in some universities, project work has already been introduced.

4. SHORT-TERM MEASURES

4.01. *Present Position*

The conditions pertaining to examinations as they exist today have been reviewed and the causes of malpractices traced. The purpose of examinations and the manner of making them scientific have been discussed. Thus, the previous two chapters furnish the real basis for looking for remedies. In fact, some remedies have got suggested automatically.

In this chapter, concrete recommendations are being made. They are such that they can be implemented within the framework of our present systems of examinations. Some of these recommendations have to be implemented by the Universities and School Boards of Education. In the case of some others, the State and the Central Governments will have to step in and introduce legislation in order to enable the examining authorities to implement the recommendations.

4.02. *Results*

The first item of importance is the declaration of results of Public Examinations and the furnishing of statements of marks. These statements of marks are used for a variety of purposes. But, as already explained, the marking method and the ranking based thereon, are both defective and unreliable. They cannot be made the basis either of employment or of admission to higher studies. The only way of delinking employment and admissions from Public Examination results, is to adopt the grade system and eliminate the present practice of furnishing the 'raw' marks secured by candidates. The grade resuts should be furnished subject-wise. If necessary, an over-

all grade in an examination as a whole may also be furnished, but this is not recommended.

In order to give a complete picture of each candidate's attainments the performance in class-work should also be furnished in the certificate in terms of grades. The teacher's over-all assessment of the candidate's aptitudes and potential should also be shown. This would mean comprehensive internal assessment.

The stigma of having failed in an examination is undesirable in modern society especially when a student has succeeded, if only partially, in his educational effort. This Committee, therefore, endorses the recommendation of the Education Commission that:

> "the certificate issued by the Board on the basis of the results of the external examination at the end of the lower or higher secondary stage, should give the candidates' performance only in those subjects in which he has passed, but there should be no remark that he has failed in the examination as a whole... and that the candidate should be permitted to appear again, if he so desires, for the entire examination or for separate subjects in order to improve his performance."

The boards/universities should review their statutes, ordinances, regulations, and amend these to do away with the requirement that candidates must pass in a certain number of subjects at one and the same examination.

The Committee is of the view that such insistence is not desirable.

The Committee, therefore, recommends that:

(a) *the grade system be adopted;*

(b) *subject-wise grades be awarded;*

(c) *over-all grade may also be furnished, where necessary;*

(d) *comprehensive internal assessment be recorded in the certificate in a form suitably evolved; and*

(e) *the condition of passing in all subjects at one examination be done away with.*

4.03. *Conduct of Examinations*

The Committee recommends that the following mneasures, some of which may have already been adopted by some authorities, be hereafter adopted uniformly:

(a) Universities/Boards should be advised to see that all the papers are set by a board of pappersetters and are carefully scrutinised and modderated. The work of finalising the papers incllduding the moderation should be done at a meeeting of the board of paper-setters/moderatorss.

(b) The paper-setters may be appointed at least six months before the scheduled dates of examiination, to set and moderate the question papeers, to hold meetings and correspond.

(c) The board of paper-setters should be requirred to prepare an outline of answers and detailled marking schemes for all the questions set in all the papers at all the examinations up to tthe first degree level.

(d) Subject teachers should be invited to formulate possible questions or question-papers coveriing the syllabus and send them to the examiniing bodies with outline answers and markiing schemes. These should be collated and made available to the paper-setters for their use.

(e) Where the number of candidates appearing at a Public Examination is large, viz., say about a lakh in the case of schools and about ten thousand in the case of universities, decentralisation should be attempted. Thus, separate arrangements should be made for the conduct of examinations including the setting of papers for each group of about 10,000 school or 1,000 college students.

(f) When such decentralisation is attempted, it is preferable to get all the required question papers for a subject set by one single board of paper-

setters. In such a case, the paper for a sub-centre may be selected at random.

(g) It is highly desirable to adopt the system of spot valuation. Many local variations are possible in the system of spot valuation. The main pattern, however, is that answer scripts are collected at a few valuation centres, each centre preferably getting the scripts pertaining to a distant region. Examiners are appointed to these centres and scripts are assigned to them at random for marking. In addition, the system of giving code numbers to answer scripts could also be adopted.

(h) After the initial marking is completed, the examining authority should carry out moderation by adopting well-known statistical procedures.

(i) After finalising the 'raw' marks, the results in each subject should be converted into grades.

(j) In the case of all Public Examinations, copies of question papers set should be made available to the teachers in schools and colleges on the day the paper is taken, but after the examination is over, and the teachers concerned should be requested to carefully check the question papers, point out errors, insoluble questions, etc., and generally comment on the paper. Such comments should be forwarded through the head of the institution to the examining authority. The examining authority should set up a small group of moderators who should scrutinise such complaints and make appropriate recommendations for moderation. This procedure, if adopted, should be made public both to the students and the teachers. The comments received in this connection should also be forwarded to the paper-setters at the next examination, along with the material mentioned in clause (d) above.

(k) Examining authorities should award prizes and scholarships to the candidate who stands first in a subject or in the examination. For this purpose, a separate test should be conducted and admission to the same should be limited to those who secured the highest grade in the Public Examination.

(l) Ideally, examinations should be conducted in the institution in which the candidates have studied and a majority of invigilators and superintendents should be drawn from the institution itself. This is, however, not always practicable, as for instance, in the case of remote schools where the number of candidates appearing at the Public Examination may be too small to start a separate centre. Invariably, a fair number of outsiders should also be appointed to do the work of invigilation.

(m) Admission to the centre of a Public Examination should be through one main entrance. Only *bona fide* candidates and the examination staff with identity cards should be admitted after being checked. Other persons should be prohibited from coming within a certain distance from the place of the examination. Legislation for this purpose should be undertaken, if necessary.

4.04. *Legislation*

Wherever appropriate, the need for legislation has been stressed both in this chapter and in the previous chapters. However, there is need to take an over-all view of this task. Thus, it is possible for universities and boards to enquire and punish the staff and members of their authorities for examination malpractices. But, it would be more appropriate to provide in the Acts of Incorporation of the Universities/Boards a suitable section empowering the Chan-

cellor/Governor to constitute such committees and make recommendations which should be obligatory on the part of the universities/boards to implement. Such an extra-ordinary provision is necessary as there can be occasions when some of these bodies may be halting in taking an appropriate action.

Prohibiting the entry of unauthorised persons into or near an examination hall and exercising the right to carry out a physical check of all persons entering an examination hall may require legislation. Certain offences will have to be classified as cognisable offences through legislation. Further, there is need to provide financial assistance to invigilators and examiners who are assaulted during the course of their work. This requires provision of a risk insurance scheme.

Taking an over-all view of the present situation, the need for legislation appears to arise in the following cases:

(a) There is need to amend the Acts of Incorporation of the Universities/Boards so as to provide for a procedure to institute enquiries and punish the staff and members of the authorities for examination malpractices. In such cases, the appointment of committees and the acceptance of recommendations of such committees should vest in the Chancellor/Governor.

(b) There is need to introduce legislation empowering the appropriate authority to prohibit the entry of persons other than the candidates, the examiners and the concerned invigilators within a certain distance from the examination centre. (In proceeding to issue orders under this legislation, great care will have to be exercised as the centres of examination may be located in congested urban areas. One way of getting over this difficulty would be to choose as centres of examination places which can be isolated.)

(c) There is need to introduce legislation empoowering a physical check of all persons entering examination halls and to restrict admission to only those who have proper identity and admisssion cards.

(d) To prevent criminal offences leading to injuries to examiners, invigilators and otherss, a clause of the following type may have to bee inserted into the Acts of Incorporation of the IUniversities/Boards:

> "Intimidation or assault or use of crimminal force on an examiner, invigilator or any other person employed in connection with the examinations conducted by the Boaard/ University within a period of two moonths prior to the commencement of the examiination, during the course of the examinaation and within two months immediately folllowing such an examination, shall be deemeed to be an obstruction caused to a public serwant in the discharge of his public functions and shall be a cognisable offence."

(e) The risk from assault to invigilators, examiners and others connected with Public Examinatiions should be covered by insurance. If it is neccessary to introduce legislation providing for a proper risk insurance schemes for them, such legislation should be introduced urgently. With the nationalisation of insurance there should be no difficulty in introducing risk insurance schemes.

4.05. *Recruitment to the Services*

The discussions in Chapter 2 have shown that one of the main causes for malpractices in our Public Examinations is the importance attached to 'raw' marks for purposes of employment and for admission to institutions of higher learning. With the introduction of the grade system, there should be a considerable improvement. However, the Committee suggests that all the State Governments and the Government of India should agree that all recruitment to the

services will be made in future on the basis of the results of competitive examinations held purpose-wise by the appropriate authorities. The passing of a Public Examination or the securing of appropriate grades in that examination may be utilised as a criterion for permitting candidates to appear at such competitive examinations and no more. If such competitive examinations are held, it is desirable to supplement the written tests by an oral examination or an interview. In this way due credit will be given to the attainments of the candidate in extra-curricular activities, etc.

A similar procedure should be followed by quasi-government and other organisations. Where the organisations are small, a group of them could get together for the purpose.

The Committee, therefore, recommends that all recruitment to the services should be on the basis of separate competitive examinations conducted purpose-wise by the appropriate agency.

As the upper age limit for purposes of recruitment to government services for different cadres of appointments, whether Class I, Class II or Class III appointments, is generally the same, students proceed to higher courses of study in the hope of improving their chances of recruitment. Thus, a large number of graduates and postgraduates apply for Class III appointments.

If the age limit for the different grades of appointment are different, so that the lower cadres might be filled with persons who pass the high school or higher secondary examinations, the number of candidates proceeding to degree courses will be reduced. It is, therefore, recommended that the maximum age limit for recruitment to lower clerical and other similar cadres should be reduced to 19 years.

4.06. *Admission to Institutions*

The results of Public Examinations should, in future, be only used for purposes of making a preliminary selec-

tion of candidates as suitable for admission. Actuual admission should be made on the basis of separate enntrance tests specifically designed and conducted for each of the different courses. The entrance test should be designned to evaluate the aptitude and potential of the candidaate for the course concerned. Further, such an entrance test should be supplemented, where possible, by an interview. There is no reason why one such common entrance test forr several states or on an all-India basis could not be orgganised for admission to, say, all engineering or medical ccolleges within the country.

In the case of our universities, it should be pcossible to conduct one common entrance test for science ccourses and a similar one for arts courses for all the colleges affiliated to the university.

It should be pointed out that the number of candidates appearing for any such entrance test will be invariably much smaller than those appearing for a higher secondary examination. The tests enable the selection of candlidates with the requisite aptitude and potential for the course concerned. If the gap between the declaration of the higher secondary examination results and the date of reopeniing of institutions of higher learning is sufficiently large, there is adequate time to conduct such tests. Further, such tests will eliminate hardships caused by differences in standards of examinations conducted by different boards/universities.

4.07. *Continuous Reappraisal*

Every university/board should have the question papers of the different examinations carefully scrutinised by appropriate advisory committees or board of studies. On the basis of these reports, necessary action should be taken against erring examiners. In addition, it is desirable that the boards should be requested to set one or two model question papers and make them available to the examiners, when a subject is being introduced for the

first time. Such model question papers should be made available to teachers and institutions also.

The university/board should set up committees to analyse the results of examinations in different subjects, compare them with those of previous years and make recommendations for improvement.

The university/board should also set up committees to compare the grades obtained by students as a result of internal assessment with those assigned to them at the Public Examination. Wide disparities should be promptly investigated and suitable remedial action taken. These will be in the nature of vigilance and correction committees and their work will be continuous and perpetual.

The universities/boards should scrutinise the marking in practical and oral examinations and review their efficacy and impartiality at short intervals. This is extremely important, in view of the fact that in recent years, the confidence of the people in practical and *viva voce* examinations has been rudely shaken. It is imperative that effective steps are taken immediately to retrieve the position.

4.08. *Facing Realities*

The recommendations made as appropriate and suitable short-term measures cannot comfort any idealist. In this connection, it has to be realised that the limitations imposed by whatever is existing in the country are such that it is almost impossible to carry out drastic changes in the organisation and conduct of examinations.

There is a set pattern of courses of study and examinations of boards and universities. Within the framework of such a pattern, drastic changes may give rise to legal complications. Although valuable results of research on examinations are available, implementation of the same is beset with difficulties. During the last two decades, no significant attempt appears to have been made either to undertake research on examinations or to profit from the results of such researches elsewhere. This may be partly

due to the reluctance of all concerned to change. It ma also be partly due to the fact that any change unleless car ried out on an all-India basis leads the board/unniversity into difficulties with regard to employment and admmission to institutions of higher learning. This limitation higghlights the need for effecting changes on an all-India basiis witl the willing cooperation of the Centre and State GGovernments and of the autonomous organisations concernedd.

Against the background described in the last paraagraph the taking over of the results of research into our ccurrent scheme of examination becomes an abrupt change as no significant changes have taken place during the lasst two decades. In this connection, it is pertinent to poimt out, that, although facilities for school, college, polytechniic and other types of education have increased, the basic ppattern of education and examination is the one which obtained before Independence. That pattern, whatever its good points, lacks the resilience to adopt and assimilatte far-reaching innovations and improvements.

There is yet another consideration which has weighed with the Committee. No separate funds are being made available for either research or the incorporation of research results into the schemes of examination prevailing in the country. Any change is bound to make an examination more expensive. Candidates resist increase of examination fees. Therefore, unless separate funds are specifically provided, significant changes become difficult.

The manner in which the problem has to be examined from the long-range point of view and action initiated immediately is discussed in the next chapter.

5. LONG-TERM MEASURES

5.01. *The World Problem*

Many countries of the world have bestowed considerable thought to evolve suitable schemes for education. Yet, the facilities provided for education at different levels do not meet adequately the requirements of the situation. Almost everywhere, there is dissatisfaction with the existing systems of education. Student unrest and the problems it has created for the governments of different countries are well known. The missionary spirit with which teachers approached their problems appears to be fast disappearing. The teaching profession is rapidly becoming similar to other professions.

In the past and, to a large extent even today, the foundations for the thinking on education are laid on past experience. Changes introduced get limited to measures necessary for correcting mistakes discovered. Such an approach was adequate for a slow-moving society. The rapidly changing social order consequent to the impact of technology makes a change of outlook a pressing need. Educationists have to think of the world of tomorrow and not the world of yesterday. Education has to fit a person to a new social order to come. This requires an intelligent anticipation of the needs of society two or three decades later. Such a projection into the future can never be precise. Yet, education planned on such a projection into the future is likely to be more effective and useful than the one planned on past experience. Further, schemes of education should always be made flexible so that changes dictated by necessity can easily be injected into them. Dynamic norms which are more in keeping with a dynamic society are the needs of all future schemes of education.

5.02. *A Social Service*

Examined on a world basis, relevance of whatetever is being done in the schools and in the universities haas now assumed a new significance. This is because eduucation is increasingly being linked with gainful employment. Thus, education becomes a social service. Therefore, thee purpose for which instruction is given, the manner in which such instruction is assessed, the objectives of such aassessment and their relationship to the anticipated neecds of society must be so spelt out that parents, teaachers, students and the public can easily understand whaatever is being done.

As discussed in the previous chapters, larger and l larger numbers will have to be dealt with in all schemnes of future education. Therefore, the evolution of standdardised procedures for assessment becomes necessary.

5.03. *Objectives of Education*

Elementary education is concerned with educating the child. Such education is expected to be free and compulsory. Whatever the ability of an individual and whatever his handicaps, he must be made to successfully complete this stage of education. Therefore, a child may be taught several subjects in an integrated way and may be permitted to proceed from one stage to the next without formal examinations. The teacher may indirectly evaluate the child and keep the results of such assessment as a document available for use by the school authorities. To declare a child pass or fail and to detain him in any class at the elementary level is undesirable and unnecessary. There can, however, be an examination or a test at the end of the elementary stage to evaluate the satisfactory completion of the courses of study envisaged. Such an evaluation is necessary for making selections for education at the next stage, and, more appropriately, as an index of the success of a social service scheme.

Secondary education need not be compulsory. The

objective of education at this level is to develop competence for scholastic study and trainability in work involving the use of the hand or the combined use of the hand and the mind. At this level, opportunity should be provided to a student to study a number of subjects and grade him in each one of them. The choice of subjects should be governed by the aptitude of the student but the subjects provided should all have relevance to the needs of society. Satisfactory completion of work in a certain prescribed minimum number of subjects should entitle the student for a certificate.

Admissions to institutions of higher learning should be on an extremely selective basis by means of appropriate prediction tests. Facilities should be limited to what the finances can permit. Those who cannot get admission to institutions of higher learning should, however, be provided with opportunities for further education through evening courses, correspondence-*cum*-intensive training courses, etc.

The duration of a stage of education, viz., secondary education, may be laid down broadly as a certain number of years. The minimum number of subjects to be studied should also be laid down. But brighter students should be provided with opportunities of completing this work in a shorter period and with opportunities for studying many more subjects than the minimum laid down. The injection of such flexibility for catering to the needs of students of varied competence is a pressing necessity.

What has been described above are wider issues which have to be examined by the State authorities but they have a close bearing on the problem of Public Examinations.

5.04. *Public Examinations*

In any country, a preliminary general assessment of students who have satisfactorily completed a certain stage of education, is necessary on a country-wide basis. Such

assessment forms the basis for a preliminary selection for higher courses of study and for employment. Examined from this point of view, a Public Examination in a suitable form is always necessary. Such an examination may be conducted by a board or a university. Alternatively there could be internal assessment of the students by the teachers of the institution concerned on the basis of norms laid down by such a board or university. The results of such internal assessments can be subjected to external moderation by a board/university and then utilised as results of a Public Examination.

The frequency of such Public Examinations should be drastically reduced. There should be one Public Examination at the end of the elementary/middle school stage, another at the end of the secondary stage and yet another at the end of the first degree course. Barring this, no Public Examinations need be held at any other stage below the first degree. Only internal assessments should be made.

Even when a Public Examination is conducted by a board/university, a considerable measure of innovation is possible. Thus, where a higher secondary course is of three years' duration with a certain minimum number of subjects, there is no reason why the study of a certain number of subjects should not be completed in the first, some in the next and the remaining in the third year. In such a case, students should be permitted to take the Public Examination in the subjects they have completed at the end of the first, second or third year, respectively.

Opportunities should also be provided for really good students to complete such a three-year course in two years and utilise the third year to study other subjects or study some selected subjects in greater depth. The average and below-average students may take all the three years to complete the subjects repeating in the second year what they could not complete in the first, and so on. Subject-wise passing may also be adopted with advantage. Thus, each student will be able to attain his full intellectual stature at his own rate. This concept can also be ex-

tended satisfactorily to university education. But its adoption will require changes in the organisation of teaching and the conduct of examinations.

5.05. *Autonomous Institutions*

Where large numbers are involved, decentralisation of a Public Examination has been suggested. An ideal level for decentralisation is an institution itself. In such cases, the question of having internal examinations with external moderation to get uniformity of results for all institutions has also been indicated.

A very desirable way of decentralisation is through granting autonomous status to some well-established institutions. Such institutions will then be in a position to arrange for and conduct examinations and declare results. The granting of such an autonomous status has already been recommended by the Education Commission (1964-66).

The Committee suggests that early steps be taken to implement this recommendation of the Education Commission. Where necessary, the Acts of Incorporation of the Universities should be suitably amended.

In the beginning, autonomy could be suitably restricted. Thus, a college affiliated to a university may be permitted to arrange for its own examinations, set question papers, get the answer scripts evaluated and declare the results on behalf of the university. In all this work, if necessary, the university might associate one or more persons per subject after carefully selecting them from a panel of experts. Such persons would scrutinise and moderate question papers, sample answer scripts and make recommendations for moderation, etc. Later, it may become possible to eliminate this practice and leave everything to the college itself. This is the ultimate objective as it is now envisaged that each institution should conduct its examinations and the results of all such institutions should be externally moderated to realise uniformity.

In exactly the same way, it should be possible to examine the grant of autonomous status to well-established schools.

The Committee, therefore, recommends the grant of autonomous status to well-established schools and colleges at an early date and the introduction of amending legislation wherever necessary for the purpose.

5.06. *Budgeting for Education*

Since Independence, both the Centre and the States are spending larger and larger amounts of money on education. Increasing attention is being paid to improve the service conditions of teachers. Educational facilities are being made available increasingly to all educable age-groups at State expense. However, the approach to the problem of budgeting has, by and large, become a semi-mechanical one. We budget for education as a whole. Most of the money so allocated is spent for the teaching-learning process. In fact, it is reported that in some cases, the bulk of the recurring expenditure goes entirely to teachers' salaries and the non-recurring expenditure to buildings. It is also reported that several boards of secondary education have an excess of income over expenditure. As far as universities are concerned, they are spending very little from their own funds (beyond the income from examination fees) on research and improvement of the processes of examination.

The development of education is clearly lop-sided. A fresh look at the problem is imperative. It is no longer adequate for universities and boards of secondary education to prescribe syllabi and proceed to conduct examinations on the age-old pattern. The relevance of the curriculum content and its objectives must be carefully examined.

Both at school and college, students will have to be told of the available spheres of employment and of the scope for self-employment. In accordance with their own aptitude for future employment, they will have to be advised

to choose the appropriate subject or subjects. This is highly specialised work. The importance of guidance was realised immediately after Independence, but attempts commensurate with the task have not been made so far to provide facilities for guidance both at school and college level. The time is now ripe for making guidance compulsory in schools and colleges set up for teacher education. Similarly, there should be special facilities afforded for training in guidance to those employed in the colleges affiliated to universities.

Guidance is so important that some facilities for in-service training in guidance for both primary and secondary teachers already employed should be properly planned and provided. Such facilities should, preferably, cover all primary and secondary teachers.

Assessment or examination is one of the most important features of good education. Considerable thought has to go into any scheme of assessment. In most countries large amounts of money are spent on measurement and evaluation with special reference to examinations. Unfortunately, this is a very neglected field in our country. Although measurement and evaluation are included in the courses of study in the colleges of teacher education, no intensive study or research is done. A scientific study of the setting of questions and the design of question papers are problems of considerable importance for both the boards of secondary education and the universities. Similarly, statistical analysis of the results of examination deserves priority, since it enables the authorities to draw conclusions relevant to the educational process as a whole.

A mere recommendation stressing the importance of guidance and assessment will really serve no purpose. What is required is a firm decision to divide the allocation for education into sub-heads. Thus, of every Rs. 100 allocated for education, not more than Rs. 60 should be for the teaching-learning process; at least Rs. 20 should be spent on guidance and the remaining Rs. 20

on studies, research and innovations in the process of examination.

The above scheme indicates specific norms for buddgeting in the field of education. Unless the State and Central Governments adopt such norms and enforce them, the guidance movement so necessary in the modern world will make no impact, and examinations will continue in the current out-moded forms for years to come.

5.07. *Research*

Almost everywhere in the world everyone stresses the importance of equality of opportunity for education. But the details are never spelt out. Thus, if a student gets admission to a school, this may not represent equality of opportunity. The evaluation procedures adopted may be defective and the student, although competent, may be condemned. Similarly, almost everyone is concerned with the discovery of talent. If the tools utilised for discovering talent, viz., techniques of evaluation, are defective, the real talent may be kept out and what is not talent may get the benefits! The over-all curriculum, the number of subjects and the techniques of evaluation may vary from one examining authority to another. In such a case, a student of less competence may get preference in employment over a student of better competence. This is common knowledge in our country. Some examining authorities declare many in the first class and such first class students can be of much lower calibre than those who have been placed in the second class by some other examining authorities. But, as matters stand, the really more competent second class students can be ruled out even from consideration for employment. This causes more frustration than even the glaring malpractices discovered in our examinations. Therefore, getting to some form of uniformity in assessment and improving the tools of assessment become extremely important.

There is in the country some talk of examination reform. It is not examination reform which is important.

What is really necessary is a drastic re-thinking on the evaluation process in relation to the purposes for which it is meant. Similarly, there is a reasonable measure of talk on different types of questions. The need of the hour, however, is the problem of deciding on the appropriate percentages of different types of questions, the appropriate number of question papers, etc. Similarly, internal assessments should consist of a variety of tests both written and oral. Here, the problem is one of deciding on such a variety and assigning appropriate statistical weights for each type of test for getting an over-all assessment.

Examination research is a continued activity even in the countries which have embarked on this work decades back. In our country, we have yet to make a proper and well-organised beginning. This has obviously to be very extensive if it has to make an impact quickly. Thus, there is need for an examination unit in all examining bodies like the universities and boards of education. There is need for a proper full-fledged wing on measurement and evaluation in selected university departments of education. If such a wing is to function properly and effectively, it must have a reasonable number of well-trained statisticians who enjoy equal status with others. There is also need for an examination research wing in organisations like the National Council of Educational Research and Training, the State Councils of Educational Research and Training and in the University Grants Commission. Such centralised wings should be innovators of ideas. The clearing-house work should only be incidental.

Perhaps, the allocation of separate funds for examination research by the Centre may assist research work and accelerate the realisation of useful results.

CONCLUSION

The prevailing systems of examination in the country and the manner in which they give rise to malpractices have been reviewed. Scientific methods of conducting examinations with specific reference to the purpose for which they are meant have been discussed to show that improvements in the schemes of examination can themselves reduce malpractices. Utilising the information thus furnished, long-term and short-term measures have been suggested. In describing long-term measures, no specific reference to malpractices has been made because if the measures suggested are adopted, malpractices might go down automatically. While making suggestions, the limitations imposed by the funds available have been constantly kept in view.

The guiding light for the work of the Committee has been the truth of the maxim: "in education and examination, as elsewhere, experiment and innovate or perish".

To this report the members append their signatures in unanimous approval.

1. Union Education Minister, *Chairman.*
2. Education Minister, Andhra Pradesh, *Vice-Chairman.*
3. Education Minister, Bihar, *Member.*
4. Education Minister, Assam, *Member.*
5. Chief Executive Councillor, Delhi, *Member.*
6. A. E. T. Barrow, *Member.*
7. S. V. C. Aiya, *Member-Secretary.*

SUMMARY OF RECOMMENDATIONS

(NOTE—The numbers in brackets at the end of each recommendation refer to the paragraph/paragraphs in the main body of the report.)

A. *Legislation*

The State and Central Governments should immediately take suitable measures to get amending legislation passed in the relevant laws pertaining to the following matters:

(a) Empowering the Board/University to grant autonomous status to well-established institutions. (5.05).

(b) Empowering the examining authorities to check students and prohibit those with weapons from entering the examination halls. (4.04)

(c) Making the assembly of persons within a certain distance from an examination hall a cognisable offence. (4.04)

(d) Making the indulgence in malpractices by employees and authorities of the universities/ boards a cognisable offence. (4.04)

(e) Empowering the examining authorities to take out risk insurance for the invigilators and examiners. (4.04).

(f) Making the assault on an examiner or an invigilator or other person connected with examination, a cognisable offence. (4.04)

B. *Conduct of Examinations*

(a) Paper-setters should be appointed at least six months prior to the commencement of a Public Examination and they should be given at least eight weeks to draft questions. The papers should be finalised at a meeting of the paper-setters. (4.03)

(b) Where the number of candidates in Public Examination is very large, there should be decen-

tralisation with separate examinations for each group of 10,000 school students or 1,000 college students. (3.13, 4.03).

(c) A Public Examination should be conducted in the institution in which the students study. The majority of the invigilators and superintendents should be drawn from the institution concerned. (4.03)

(d) Admission to the centre of a Public Examination should be through one main entrance. Only *bona fide* candidates with identity cards should be admitted in the examination centre after thorough checking. (4.03)

(e) Model answers should always be prepared and supplied by the paper-setters. (4.03)

(f) Copies of the question-papers set should be made available to the teachers in the schools and colleges on the day of the examination but after it is over, so that the teachers could comment on the paper to the authorities quickly. (4.03)

(g) The method of spot valuation at a central place to which all the examiners are called, should be adopted. (2.13, 4.03)

(h) The result should be declared subject-wise and furnished in the form of grades. The 'raw' marks given by the examiners should never be made available. (3.11, 4.02)

(i) Subject-wise passing should be introduced and the Public Examination certificate should be given on the candidates passing in the minimum number of subjects. (3.10, 4.02)

(j) The certificate issued by an examining authority should have two columns, viz., one giving the result of Public Examination and the other giving the result of the internal assessment by the teachers. (4.02)

(k) For the awarding of prizes and scholarships to a candidate who stands first in an examinaton or in a subject, a separate test should be conducted and admission to the same limited to those who secure the highest grade in the Public Examination.

(l) There should not be too many Public Examina-

tions. There should be one at the end of the upper primary/middle school stage, another at the end of the secondary stage and the third at the first degree stage. All others should be internal assessments only. (5.04)

C. *Use of Examination Results*

(a) Recruitment to the services should be made on the basis of tests/examinations conducted by the Public Service Commissions and the maximum age for appointment for clerical posts be reduced to 19 years. (4.05)

(b) Admission to colleges including professional colleges should be on the basis of an entrance test conducted specifically for assessing the aptitude of a student for a particular course. Eligibility to appear at these tests should alone be determined by the results of the Public Examination. (4.06)

D. *Budgeting for Education*

In future, both the Central and State Governments should earmark funds separately for guidance and studies and research on examinations. (5.06)

E. *Research*

There should be continued study and research on examinations, both at the State and Central levels and in the boards/universities in a coordinated manner. Necessary funds for the same should be provided on a priority basis. (5.07)

F. *Novel Ideas*

Novel ideas for the organisation and conduct of Public Examinations should be encouraged. (3.12, 3.13, 3.14, and 3.15)

APPENDIXES

Committee On Examinations

Central Advisory Board of Education
Ministry of Education and Youth Services
India

Questionnaire

Replies may please be sent to :

PROF. S. V. C. AIYA
(Member-Secretary, Committee on Examinations)
Director, NCERT
Sri Aurobindo Marg
New Delhi 16

Introduction

At its 35th meeting held on 2nd and 3rd May, 1970, the Central Advisory Board of Education expressed concern about the conduct of public examinations in the country and passed the following resolution:

> The Board requests the Chairman to set up a Committee on Examinations which will examine the present situation and make recommendations to counteract malpractices and to give protection to invigilators and others concerned with examinations.

The Committee on Examinations appointed consists of the following:

1. Union Education Minister—*Chairman.*
2. Education Minister, Andhra Pradesh—*Vice-Chairman.*
3. Education Minister, Bihar—*Member.*
4. Education Minister, Assam—*Member.*
5. Chief Executive Councillor, Delhi—*Member.*
6. Mr. A. E. T. Barrow, M.P.—*Member.*
7. Prof. S. V. C. Aiya, Director, NCERT—*Member-Secretary.*

This Committee at its first meeting on 6th August, 1970, at Delhi considered various issues and felt that the opinions of those concerned with such examinations should be obtained by issuing a questionnaire and sending the same to select representative groups of persons. The Questionnaire was finalised by the Committee at its meeting held on 27th August, 1970, and is being sent to individuals in accordance with the decisions of the Committee.

The Questionnaire is enclosed. It contains a very large

number of questions. **It is not expected that every individual, to whom the Questionnaire is sent, will be in a position to furnish answers to all the questions.** Therefore, it is the earnest desire of the Committee that the selection of questions to be answered should be left to the individuals concerned.

The replies to the Questionnaire may be typed or handwritten on plain paper. Before putting down a reply, the number of the question may please be prominently written at the very beginning. It will assist the work of the Committee if the reply to each question is written on a separate sheet or half-sheet. However, this is not obligatory and the individuals sending the replies are at liberty to send replies serially written up. The opinions expressed in the replies will be treated as confidential and their circulation will be restricted to the members of the Committee only. **The replies to the Questionnaire should be sent by post so as to reach the Member-Secretary on or before 30th October, 1970.** The cover containing the replies may please be addressed to the Member-Secretary **by name.** The name, official designation and the address of the person sending the reply should invariably be furnished along with the replies to the Questionnaire.

NIE Campus
Sri Aurobindo Marg
NEW DELHI 16
1st September, 1970.

S. V. C. AIYA
(Director, NCERT)
Member-Secretary

Questionnaire

1. Are public examinations, conducted in the manner in which they are conducted at present by our State Boards/Universities, necessary in the larger interests of education?
2. If your answer to Question 1 is in the affirmative, would you recommend public examinations being conducted at different stages of school education instead of conducting one examination at the end?
3. It has been contended that tests of different forms, including oral questioning, observing the students' work, etc., are a much better form of evaluation than a written examination. Do you agree?
4. What are the types of malpractices practised by students, teachers and/or parents prior to the date of commencement of a public examination? Can you suggest ways of minimising the same?
5. What are the types of malpractices that are known to you to have been practised during the conduct of public examinations?
6. Do you think that very rich examinees have been very largely responsible for corrupting the administration for the conduct of public examinations?
7. Do you think that special legislation is necessary for prohibiting the entry of persons other than **bona fide** candidates to an area within a certain distance from the place where public examinations are held?

8. Do you think that there are malpractices after the public examinations? If so, of what types are they and what remedies would you suggest for minimising them?

9. Do you think that the increase of malpractices in public examinations in recent years is largely due to the importance attached to marks for admission to professional institutions and for employment?

10. Do you agree with the statement that the responsibility for the malpractices in public examinations rests not only with the students, teachers and parents but also on the slackness of the administration responsible for the conduct of the examination?

11. Do you agree with the contention that the malpractices in practical examinations in science and professional subjects are much more than in the written examinations? If so, could you suggest methods for reducing the same?

12. Is it true that the internal examinations or internal assessment, when utilised for declaring the results of students in public examinations, get reduced to a farce? If so, what remedies would you suggest?

13. Do you think that the law and order problems arising during the conduct of public examinations are not entirely traceable to malpractices in such examinations? If so, could you give specific examples of law and order problems as distinct from malpractices leading to law and order problems?

14. The Kothari Commission (1964-66) had recommended the setting up of autonomuos colleges by the universities. Do the Acts of incorporation of the different universities in your State have provision for this purpose?

15. If there is such a provision, is it restricted to allowing the colleges greater autonomy to arrange the pro-

grammes of examinations and to conduct the examinations including the declaration of the results?

16. Do you agree that it is better to restrict the autonomy of colleges, in the first instance, to the conduct of examinations only, and to take up the question of giving permission to vary courses of study, etc., at a later stage?

17. If there is no provision in the Acts of incorporation of your universities to grant an autonomous status to colleges, what difficulties do you envisage in getting such legislation through?

18. It is contended that unless detailed rules are made for the grant of autonomy to colleges, colleges not granted autonomy can protest. Under the circumstances, what measures would you suggest?

19. On the same lines as envisaged for autonomous colleges, would you agree to give autonomy to well-established schools for the conduct of their examinations and the declaration of results at the Matriculation/Higher Secondary stage?

20. If your answer to Question 19 is in the affirmative, do you think it would be possible to introduce legislation empowering the State Boards to grant such autonomy to selected schools?

21. It is contended that the results of Universities/State Boards should not constitute the sole criterion for recruitment to the services. In the light of such a contention, it has been suggested that the State Public Service Commissions should conduct tests/examinations for recruitment to the services at all levels in each State. Do you agree to such a suggestion?

22. If your answer to Question 21 is in the affirmative, do you envisage any difficulties in your Government asking your Public Service Commission to do the needful?

23. If the Universities/Boards are made to declare their

results in grades and stop furnishing marks to candidates, do you anticipate any difficulty in asking your professional institutions for engineering, medicine etc., and, even arts and science colleges, to conduct their own tests/examinations for the admission of students?

24. If it becomes absolutely necessary, legislation may have to be introduced calling upon the Universities/Boards to declare their results in grades only. In such a case, do you anticipate any difficulties for legislating on the subject?

25. Do you agree that there should be separate all-India examinations to pick out extremely bright pupils and award them scholarships for higher studies like the National Science Talent Search Examination?

26. Is it true that the breakdown of law and order in the conduct of public examinations of the Universities/State Secondary Boards occurs mainly in examinations concerned with large numbers, viz., exceeding about 10,000 for the examination as a whole?

27. Could you kindly give some details of the breakdown of law and order known to you during the period March 1968 to June 1970?

28. Do you know of any case where such breakdown of law and order was due to the defective question papers or improper arrangements for the conduct of the examinations?

29. Have there been frequent reports of leakage of question papers in University/Board examinations in your State and, if so, have you reason to believe in the authenticity of such reports?

30. Are the Universities in your State hard-pressed for funds and are, therefore, compelled to effect undesirable economies in the expenditure on the conduct of examinations?

31. Is it true that the State Boards of Secondary Education have excess of income over expenditure?

32. If your answer to Question 31 is in the affirmative, could you state the order of excess of income during the last three financial years?

33. Has your Government an adequate and effective representation on the Syndicates/Executive Councils of the Universities/Boards?

34. If your answer to Question 33 is in the affirmative, could you give reasons for your representatives not being effective in the control and conduct of different examinations?

35. As a measure of decentralisation, suppose an examination like that of Higher Secondary or Matriculation is held separately for each district with separate papers, etc., say, for groups of about 10,000 students, do you think there could be reduction in the leakage of question papers and in the breakdown of law and order?

36. Is there any practice in your State for collecting the answer scripts of students in examinations like the Matriculation/Higher Secondary at one centre in each district or division and getting the papers examined by the examiners on the spot at such centres?

37. If your answer to Question 36 is in the affirmative, what is your opinion about the success of the scheme from the standpoint of reduction of malpractices and miscarriage of papers resulting in delay in the declaration of results?

38. Do you agree that the attention paid to the extra-curricular activities of students has gone down in the last two decades?

39. If your answer to Question 38 is in the affirmative, what remedies would you like to suggest for correcting the deficiency?

40. Do you think that some credit for good performance in

extra-curricular activities must be given in public examinations, or that the excellence of a student in extra-curricular activities should come up for mention in the certificate issued by the Board/University to the student?

41. Do you agree that there should be a clear interval of at least 6-8 weeks between the declaration of results of an examination and the last date for receipt of applications for admission to a higher class?

42. If your answer to Question 41 is in the affirmative, would you be in favour of a general all-India policy for conducting the annual examinations in February/March and declaring the results before the first of May?

43. If your answer to Question 42 is in the affirmative, could you please indicate the consequential measures that will have to be taken?

44. Having regard to the accuracy which can be maintained in the marking of answerscripts in public examinations with an extremely large number of students, viz., exceeding 25,000, would you recommend decentralisation of an examination and the holding of separate examinations with separate question papers for each group of 10,000 students or a similar number?

45. If your answer to Question 44 is in the affirmative, could you suggest some form or method through which the results for different groups could be normalised for purposes of uniformity?

46. Is it at all necessary to attempt any such normalisation as indicated in Question 45?

47. Having regard to the errors in marking, do you agree that, even when marks are assigned to each question, the results of a candidate for a paper should be rounded off in the form of grades?

48. If your answer to Question 47 is in the affirmative, how fine or how coarse should be the grading?

49. Should the grades in different subjects be utilised through a suitable formula to give the candidate an over-all grade in the examination as a whole?

50. Do you think that an over-all grade is not really necessary?

51. Do you agree to the suggestion that it is wrong to declare the result of a student on the basis of one single examination?

52. If your answer to Question 51 is in the affirmative, are you in favour of holding two public examinations in a year in place of one?

53. Do you agree that the internal assessment of the teachers for essays, home work, class tests, laboratory records, oral examination, etc., is absolutely necessary?

54. If your answer to Question 53 is in the affirmative, do you agree that the performance of the student in the internal assessment should also be shown in the certificate issued by the Board/University?

55. Do you agree that the marks secured by the candidate in internal assessments should form the basis for condoning deficiencies in public examinations?

56. If your answer to Question 55 is not in the affirmative, do you still feel that there should be uniform rules of condonation which give the facility to the examining authority to condone deficiencies in certain subjects on the basis of good performance in certain others?

57. If your answer to Question 56 is in the affirmative, what suggestions have you to make for such condonation so that the final result combines both reliability and validity?

58. Speaking generally, do you subscribe to the view that it is wrong to make a student waste an entire year in repeating a class because of a small deficiency of marks in a couple of subjects, even when his performance in other subjects is extremely good?

59. What, in your opinion, should be the maximum number of papers/practicals in one public examination? (It is contended that this should be restricted to a number between 5 and 8 and that currently, in several cases, the number is extremely large.)

60. As an endurance test, do you agree that it is better to set two papers per day than one paper per day or papers at long intervals?

61. Do you agree that any one public examination should be completed within a week or a period of that order? (It has been reported that some Universities spread their examinations over several weeks, sometimes as many as six weeks.)

62. If autonomous colleges or schools are established, permitting them to conduct public examinations on behalf of the University/Board, are you in favour of associating one nominee of the University for each subject in scrutinising the question papers and the markings for purposes of maintaining uniformity in the final stages?

63. While examinations are held in autonomous colleges/schools, are you in favour of deputing a representative of the University to keep an over-all watch over the conduct of the examinations?

64. In all large public examinations, are you in favour of having a very large number of objective type of questions for reducing the margin of error in marking?

65. It has been contended that, in each paper, about 50% of the marks should be for the objective type of questions, about 25% of the marks for the essay type of questions and about 25% of the marks for problem-oriented questions. What are your views on this problem?

66. If your answer to Question 65 is in the affirmative, do you feel there is an adequate number of trained persons to set such questions?

67. What, in your opinion, is the minimum time that should be given to paper-setters to set a fair paper with questions well distributed over the syllabus and so set that a well-prepared candidate can answer a complete paper within a given time?

68. Do you agree to the suggestion that all question papers at all examinations must be set by a Board of Paper-Setters and finalised at a meeting of such a Board?

69. Do you agree to the suggestion that model answers should be furnished for each of the questions in a question paper by the Board of paper-setters at all examinations up to the first degree level?

70. Do you agree to the suggestions that question papers should be made available in the colleges/schools on the day the paper is set so that the concerned teachers could send their reports to the University/Board about the question paper and its deficiencies?

71. If your answer to Question 70 is in the affirmative, do you think a Board of Moderators must examine such reports from teachers and issue instructions for moderation in the marking of scripts?

72. Do you agree to the suggestion that the design of a paper for an examination should be standardised in the same manner as the syllabus for the paper and that this should be made available to the teachers and students alike?

73. Do you agree that, in future thinking, curriculum instruction and evaluation should be viewed together in an integrated way and that the design of a paper for an examination should be thought out clearly and explicitly at the very stage at which considerations are given to curriculum and its development?

74. Do you agree that, particularly at the school stage, the teachers' training should incorporate such an integrated view as mentioned in Question 73?

75. Do you agree to the suggestion that at least some of the papers in the higher examinations should be of the 'open book' type where the books which have to be taken by the candidate to the examination hall, are explicitly stated?

76. If your answer to Question 75 is in the affirmative, do you think there is an adequate number of persons who can set questions to suit an 'open book' examination?

77. Do you agree to the suggestion that all question papers set at any public examination, should be carefully scrutinised every year by the relevant Board of Studies and action taken on the basis of their reports?

78. Do you agree to the suggestion that public examinations should be conducted in places where the students themselves studied so that they are supervised and controlled by the teachers who know them?

79. Do you agree to the suggestion that ex-students and correspondence-course students for an examination should be examined separately in a separate examination, with separate question papers, etc.?

80. Do you think the importance attached to the results of public examinations by parents, teachers and the public has considerably undermined the desire for learning and scholarship on the part of the majority of students?

81. Do you think the interest of the teachers could be enhanced if they are directly made responsible for examining the students and declaring their results?

82. Do you think that the objectives of Question 81 can be partially realised by providing for internal assessment and furnishing the internal assessment results in University/Board marks cards?

83. Do you think that the malpractices in public examinations have increased in the last 10 years? If so, could you give reasons for the same?

84. Do you think that the publishing of 'guides' and running of coaching classes, etc., have increased in the last 10 years? If so, could you give reasons for the same?

85. Do you think that, by and large, the syllabuses for the public examinations are overloaded and that this is partially responsible for cramming by students?

86. Do you think there is interference in the normal work of a teacher from others interested? If so, could you give details and indicate the effect of the same on the studies of students?

87. Do you think the change of textbooks or syllabuses for public examinations is made far too frequently in recent years?

88. Are you in favour of regular examinations, tests and home assignments throughout the year, and the results of the same being taken into account in declaring the results of public examinations?

89. Is it true that the teachers today are taking less keen interest in their students than before?

90. Is it true that the majority of the teachers of today are not able to enthuse the students in their work?

91. Is it true that many courses at school and college are outmoded and have no objective-orientation?

92. Is it true that the relevance of a course from the standpoint of the future of a student is completely, or almost completely, ignored by the framers of courses?

93. Is it true that the confidence of the public in Board/University examinations is rapidly going down?

94. Do you think that by conducting public examinations exclusively in the mother tongue of the examinee, many hardships and the fear of public examinations would be reduced?

PRINTED AT RAJENDRA PRINTERS (P) LIMITED,
RAM NAGAR, NEW DELHI-55.

Committee On Examinations

Central Advisory Board of Education
Ministry of Education and Youth Services
India

The Swedish System

SVEN ERIC HENRICSON
Head of Section, National Board of Education, Stockholm

(Reprinted with permission for private circulation only from the Report of the Conference on Examinations, 1968 of the Scottish Certificate of Education Examination Board, Edinburgh)

(1) The Comprehensive School

Form 9	g Upper sec. school [3]	h Humanity	pr General pract.	t Technical	tp Technical pract.	m Mercantile	ha Commercial	s Social economics	ht Domestic science
	28+7 wps		13+22 wps	28+7 wps		13+22wps	13+22 wps	28+7 wps	28+7 wps

Form 8	[2] 24+4 wps compulsory subjects	Mat. 4	Optional 7 wps		9 optional groups
„ 7	[1] 22+4 wps compulsory subjects	Mat. 4	Eng. 4	Optional 5 wps	5 „ „
„ 6	35 wps compulsory subjects incl. Eng. 4 wps				
„ 5	35 „ „ „ „ „ 5 wps				
„ 4	35 „ „ „ „ „ 2 wps				
„ 3	30 „ „ „				
„ 2	24 „ „ „				
„ 1	20 „ „ „				
	Nursery school				

(1) In grade 7 there are 4 compulsory wps in mathematics, either a general or special course, and 4 compulsory wps in English, either a general or special course.
(2) In grade 8 there are 4 compulsory wps in mathematics, either general or special course.
(3) In grade 9 the number of wps for common subjects is given first, and then the number of wps for the optional subjects belonging to the stream.

(2) Upper Secondary School (Gymnasium)

	Technical			
Form 4	Engineering	House-building	Elect. power	Chem.
	35 wps, whereof 5 in common			

Transition to University

Form 3	Humanistics	Social Sciences	Economics				Natural Sciences	Technical			
			Mod. lang.	Publ. finance	Distri-bution	Adm.		Engineer.	House-build.	Elec. power	Chem.
	30 wps, whereof 9, 5 in common										
Form 2	Humanistics	Social Sciences	Economics				Natural Sciences	Technical			
			Languages		General economics						
	32 wps, whereof 14 in common										
Form 1	Humanistics and Social Sciences		Economics				Natural Sciences	Technical			
	34 wps, whereof 23 in common										

Transition from Comprehensive School to Gymnasium is possible from the following streams in form 9 : Stream g, h, t, m and s.

(3) Continuation School

	Social			Economical				Technical					
Form 2	35 wps, of which 25 are in common and 5 optional among 10 subjects			35 wps, of which 22 are in common and 7 optional among 12 subjects				35 wps, of which 10 are in common					
	Mod. Lang. 8 wps	Nat. Science 8 wps Math. Phys. Chem.	Social Science 8 wps Social subject	Econ. Lang. 6 wps	Accounting 6 wps	Distribution 6 wps	Administration 6 wps	Engineering	House-building	Construction	Electric power technique	Telecommunication	Chemical
Form 1	35 wps, of which 25 are in common and 5 optional among 9 subjects			35 wps, of which 29 are in common and 6 optional among 8 subjects				35 wps, of which 20 are in common					
	Modern Languages 7 wps	Natural Sciences 7 wps Math., Phys. and Chem.						Engineering 2 wps, Chem. 13 wps, Tech. Subj.	Construction 2wps, Chem. 13 wps, Tech. Subj.	Elect. power 8 wps, Chem. 7 wps Tech. Subj.		Chemical 2 2 wps, Chem. 13 wps, Tech. Subj.	

Transition to the Continuation School is possible for the following groups :

1. Compr. School, stream 9 h, t, m and s without supplementary studies.
2. ,, stream of pr, ha, ht, and tp after some supplementary studies.
3. Applicants with 3 years of practical work or 2 years of vocational school (25 % of the admission to the Cont. School is reserved for this third group of applicants) .

II. EVALUATION SYSTEM IN SWEDISH SCHOOLS

1. According to the Education Act of 1962 for the Comprehensive School and of 1964 for the Secondary Level (Gymnasium and Continuation School) marks shall be given on a 5-point scale. The marks for all pupils in the same form, taking the same subject or course within a subject, should be distributed according to an approximate normal distribution as seen below:

Mark	1	2	3	4	5
%	7	24	38	24	7

The mark 3 is defined as the mean accomplishment for the total group of pupils taking the same subject or course within a subject.

2. No marks are given in form 1; in form 2 marking only at the end of the second year and only in seven subjects. From form 3 all marks should be given for all subjects in the curricula and twice a school year—at the end of the autumn term and also at the end of the spring term.

3. The individual teacher is solely responsible for the marking procedure. No educational or legal authority can correct a mark or force a teacher to change a given mark.

4. In the Comprehensive School there are no compulsory written tests or final examinations. In the Gymnasium we have a fixed number of compulsory written tests from form 1 to 3 (4), three to four in the main subjects in each form. Neither the Gymnasium nor the Continuation School have final examinations.

5. According to the curricula teachers are recommended to gather continuous information about the pupils and their performances during each term. In doing so the teacher should pay attention both to the general goal of the education and to the specific aims of each subject. The evaluation should be based on different types of data such as written tests and oral examinations, observations of laboratory work and so on.

6. The entrance to the Gymnasium and to the Continuation School is based solely on the marks from the Comprehensive School according to the mean of the marks of all subjects, including theore-

tical subjects as well as Music, Drawing, Handicraft and Physical Training. All subjects are equivalent.

7. The entrance to university and other schools or courses after the upper secondary level is based on the marks from the secondary level according to the same general principles as the admittance to Gymnasium and Continuation School.

So far very little is altered from the old to the new system of evaluation in Sweden. What is new is the abolishment of final examinations at the secondary level, the compulsory school has never had such examination.

III. STANDARDIZATION OF EVALUATION

Already in the late thirties the problem of standardization of school marks was brought up. The discussion started in the compulsory school in connection with the admittance to lower secondary education ("realskolan"). During the forties the first standardized achievement tests were tried out and put into use in the compulsory school. In 1949 entrance examinations for lower secondary level were abolished and from that time on, standardized achievement tests have been used as a regular part of the evaluation in compulsory schools. In connection with the Education Act of 1950, which started the tryout of the nine year comprehensive school the importance of standardized achievement tests were pointed out.

During the fifties they have been taken into the educational regulations for the compulsory school and since 1964 also for the secondary level. It should be noticed that it has always been and still is optional for a teacher to use standardized achievement tests or not. The use of the tests has increased and now 90-95% of all pupils in the comprehensive school are taking tests. In the Gymnasium where the tests were put into use from this school-year, all pupils take part in the testing.

The National Board of Education always has been responsible for the tests. In the beginning the construction was done by the authorities outside the Board (the University and later the School of Education of Stockholm). Since 1965 a special section within the National Board has taken over all work with the tests.

IV. TODAY'S SYSTEM OF STANDARDIZED ACHIEVEMENT TESTS

1. *Comprehensive School*:

Form 3 : Swedish and Mathematics.

Form 6 : Swedish, English and Mathematics.

„ 8 : Swedish.
English for two different courses, one theoretical and one practical.
German, only for the theoretical course.
French, only for the theoretical course.
Mathematics for two different courses (of English).

The tests are given during periods, which are settled by the National Board, but it is up to the individual school to choose the day for the tests. Detailed instructions for the testing and the correcting of the tests are distributed to the schools together with the tests. The same tests are used for a period of about three years.

2. *Upper Secondary School (Gymnasium)*:

Form 2 : Swedish for all pupils.
English for all pupils.
Mathematics (3 different courses).
Physics, only for the Science and Technical branches.
Physics, only for the Science and Technical branches.
Economics, only for the branch of Economics.

Form 3 : Swedish for all pupils.
German or French according to the choice of the pupils.
Mathematics (3 different courses).
Physics, only for the Science and Technical branches.
Accounting, only for the branch of Economics.

As mentioned above there are compulsory written tests in the Gymnasium. One of these tests is a "central" test, that is a standardized achievement test. The tests are given according to a common plan for all schools, settled by the National Board. The test sessions are spread out from December to May. The tests are new constructions for each year.

V. CONSTRUCTION OF ACHIEVEMENT TESTS

The section in the National Board, which is responsible for the tests, has only technical personnel (psychologists and clerks), but for every subject and type of test there is a group of 5-10 experts on the subject matter. This group and two of the psychologists of the section are responsible for the analysis of the objectives of the instruction in the subject and for the principal form of test. Another group of experts is writing the test items according to the decisions of the

section and the first expert group. Tryout forms of the test are instructed in the section and then tested on a sample of pupils. The data from the tryout are analysed by means of a computer for data like item analysis reliability. The norms for the tests are based upon a representative sample of results, sent in by the teachers after their pupils have taken the tests.

It may be mentioned that we are experimenting with procedures for optical reading of answer sheets from the tests in order to help the teachers with the correcting of the tests and at the same time have all the data about the results.

VI. OBJECTIVES OF TESTS

Here a difference has to be made between the marks of an individual pupil and the standardization of the marking procedure. As far as individual marking is concerned the test is only *one part* of the observations underlying a mark. In test manual the teachers are forbidden to use the test result of an individual pupil as the only base for his mark.

Talking about the standardization of the marking procedure for the whole country, one must point to the fact, that we have a common curricula for all schools in Sweden and that the teachers' training is regulated by the common curricula. These facts form the first bases for a common evaluation. In spite of this, Swedish teachers certainly have the same problem as most teachers in using a uniform marking scale. Here we use the tests as one of the remedies for standardizing the marks.

The tests are used according to the following general instruction:

1. After the teacher has got the norms for the test he is calculating the distribution and the mean for his class or group of pupils. These data are kept till the final marking at the end of term.
2. Shortly before the final marking the teacher is given preliminary marks. These marks should, as mentioned above, be based on a continuous evaluation during term. For these preliminary marks the distribution and mean are calculated and compared to the data of the test.
3. From this the teacher could see how his own class is standing related to all other pupils in the same form. If there are differences between the two distributions and means the teacher is recommended to adjust his preliminary marks as close as possible to the distribution of the tests.

When adjusting the preliminary marks the teacher should rank his pupils according to their total accomplishments. In case the test has given for instance four pupils with the mark 5, the teacher should give the final mark 5 to four pupils. These pupils should be the four at the top of the total ranking list, independent of their results on the test.

These general instructions are valid unless special circumstances occur. For instance, some disturbance during the test session, absence of the best—or the weakest—pupils or something similar. Such things could be reasons for not adjusting the preliminary marks into full conformity with the distribution of the test results.

The tests or—to be more correct—the adjusted distributions of marks for those subjects which have tests are used as general aids for adjusting the distribution of marks in other subjects. This recommendation is based on the well-known fact that the means and distributions for a class or a group are fairly highly correlated irrespective-ly of subject.

VII. SOME OBSERVATIONS ABOUT THE SYSTEM

When considering an evaluation system one must remember that no system could be perfect in the meaning of absolute individual justice or effectiveness in selection for further studies. The average correlations between marks from a 'delivering" school system and those of a receiving school system are according to a lot of experiments, certainly positive but in the range of .40 to .70. This is true for groups, but for the individual this means that there is not too much of concordance as far as individual prognosis is concerned. It is also shown by a lot of investigations that different methods of standardizing the marking system is *one way* of raising the reliability and the validity of school marks as a base for selection for further studies. We think that one has always to accept a certain degree of "bad selection," unimportant whether we use school marks or ability tests or any combination of these data. The best way of taking care of those who "by chance" are excluded is to give them a new possibility by increased educational opportunities in a system of adult education. That is what we try to do in Sweden by enlarging our adult education in evening-schools as well as by means of radio and television. This certainly means an extra burden for those who "fail," but this system seems to be a better way of raising the effectiveness of an educational system than to spend a lot of money and personnel in raising the validity coefficient from say .60 to .65, which really means

very little for those who are just below the limit of admittance.

The impact of the regulations for admittance to further studies and the data on which the selection is based, are of much more importance than the evaluation system of the delivering schools. It is often said that the evaluation system has a bad back wash effect on the teaching and this is certainly true, particularly when written final examinations dominate the evaluation. But in Sweden we have found that the regulations of admittance to the secondary level and to the university level have a bad influence not only on the teaching but also on the system of evaluation.

CONTINUOUS EVALUATION

I must say I am very proud to be here on behalf of the Swedish school system, but I have to make a few apologies, at least for two things. My English is not so very good but you must not blame the compulsory school for that because that system is younger than I. The other thing is that I will not speak to the summary already distributed to you because I think you can read what is in the summary but I will comment on one or two details, especially how our assessment system is actually put into practice by our teachers.

But first a few words on the educational situation in Sweden, concerning which we have held quite a lot of enquiries, and on which there have been many developments during the last thirty years. In fact this year the last Acts for shall we say the next ten-fifteen years were passed by Parliament: these are about vocational education and adult education. We got the new Act on teachers' education and teachers' training, last year; in 1964 we had the new Act for the upper secondary education, and in 1962 for the general comprehensive. I think I will not go into details about the comprehensive school in Sweden because it is not so easy to explain or to define what is really meant by comprehensive schools. I should say that the Swedish system is a system where we have very little streaming. I think that's the best way to define it. All pupils are formed into classes from the first form to the sixth and, after that, they are transferred over to the seventh grade. In the first two years of this three-year period, the 7th, 8th and 9th grades, the pupils belong mostly to the same classes as they did before but in certain subjects, Modern Languages and Mathematics, they are divided up into two groups because we have one course more theoretical and one less theoretical but in most subjects and for most periods in the week they are together. In the last form, the ninth, they are divided up into quite a lot of

tracks. Some of them are pre-vocational and the other ones are more general. The most general line in form nine is supposed to lead to upper secondary education in what we in former days called the "gymnasium." There is one theoretical group and one practical group connected to each other but the strange thing is, although this was decided in Parliament in 1962 for purely political reasons (because as in most countries there has been should we say not a quarrel but quite a discussion about the comprehensive system and in 1962 we didn't manage to go further than to have a streamed last form in the upper department) yet after three years we have found that this wasn't possible for different reasons. The first thing was that the pupils' and the parents' wishes for the most general kind of education resulted in nearly all pupils choosing combinations of subjects which were not general and theoretical and very few chose the prevocational tracks in the ninth grade. In 1965 the National Board of Education set up a Committee which last autumn put forward its suggestions to the Ministry of Education and we hope that this year we will have a decision on that and the suggestion is briefly that we should have a comprehensive ninth year as well as the seventh and the eighth for the reason that so very few pupils want to use the non-theoretical and the prevocational tracks. I think that will be all I will say about the system. There certainly are other questions and I will try to answer them afterwards but there are some other features of the Swedish educational system that might be mentioned.

If one should put Sweden on the educational map of Europe I should say we are something in-between the United Kingdom and France. We are not so centralised as in France, in fact you can't say that on a given day at a given hour they have the Geography of a special part of the world in schools on the same grade. It would be a nice thing to have because in that case we would have no problem in organising radio and television instruction because the schedule would be the same all over the country! But we have in fact common curricula for every subject and the curricula are set by the National Board of Education. That holds true for all types of schools. for compulsory as well as secondary level and it is true for the universities too. We have common syllabuses at the university level set by the office of Chancellor for all the Universities, and in fact so far as university subjects are concerned which have any connection with teaching in our school system the National Board of Education must be asked about the syllabuses for the universities. Most universities Professors don't like it but this is the system anyhow.

We have also a peculiar system regarding teaching methods, text-books and so on. There is a special State Board, not the National Board, to deal with this. The members are appointed by Parliament directly and on some occasions there are quarrels between the National Board and the Board for Text-books in Sweden. They have to decide upon which text-books are allowed for use in teaching and then we have got a great variety—15 to 20 different books on every subject at every stage and the schools have to decide which one they will use but it must be on the list of the Board for Text-books. Many Committees are working in this field of education. You know Sweden is known, at least in Scandinavia, for the number of its Committees and all the papers the Committees put forward to Parliament, to the National Board and other agencies. We have a Committee working on the problem of how to produce text-books and all the new material one ought to have in a new school. I should say the use of text-books will fade away very soon I think. We will use other materials in at least the compulsory school and most of secondary level and we must take care how to produce these things because when it is not easy to write a good text-book it is quite another job and equally difficult to prepare systematised programmed teaching material of any kind using television, radio and other aids. The National Board of Education this Spring have bought over a whole firm for producing film and television material, and thus we have our own set-up that we can work with on an experimental basis. We think this is the most important thing for our growing adult education, which is another part of our system when during the last years the development has been very rapid, for instance to give you some numbers:—in 1955 we had 15% of the age group in the upper secondary schools, now we have 30%: we have doubled during a period of 15 years and that means that quite a lot of people who are now in the age groups of 25 and above are now inferior in education to their juniors because they had not the opportunity to take upper secondary education. We must therefore build up a system of adult education to give them an opportunity to catch up; that's one reason. The other one is that the developments within industry and on the labour market had already made it necessary to take care of quite a lot of people who must be re-trained and not only in specific vocational areas but in general areas too. Take for instance the problem of supervisors in industry. We have quite a lot of skilled workers but what they don't have is sufficient general education to make them suitable for supervisory work at different levels.

I think I should take up something about research and the role of research in the educational system in Sweden. Research is a very

important thing, not only during a period of enquiry and try-o-out ar development, but as a main part of the educational system. Ther fore we, after 1964, got a special department within the NNation: Board concerned mainly with research. We don't do the rresearc actually within the Board but we have managed to get all the (depar ments of psychology and educational psychology at the univiversitie and the teachers' colleges involved in a very wide programme e of re search. In fact we have got so much money, that we have trouuble ir getting hold of enough research workers. For the budget ffor the next financial year which starts on 1st July this year, we have 99½ million Swedish crowns in the National Board of Education for (educational development. The problem is really to get sufficient quualified research workers in psychology and educational psychology ffor research on that scale. The most important thing is that we have managed to get all the universities and teachers' colleges intto the work because we think it is very important to disseminate the ressearch findings as quickly as possible directly into the teachers' trainning because otherwise we would have to have in-service training andd this would run on for years and years and that would be quite a problem. So much for background facts.

The question of assessment certainly has been a problem for many years in Sweden as in most countries. I should say it's the most interesting topic at international conferences and this conference too. One is astonished over how much is common between different countries when we go down to details. Too often I think we stress the differences. We should look for the common things and we have very much in common. There is the reliability of assessment; there is the question of validity; there is the question of admittance—what kind of data should we use for admittance to the next stage within the system, and so on, and we have all these problems in Sweden. I should try to give some reason for assessment which we think important in Sweden. First one shouldn't get rid of examinations or at least all types of assessment. I mean we could use different words for it but we must have some kind of assessment and as soon as we say so all the questions are there—reliability, validity and how to use in practice the different data. I should perhaps add another reason which during the past years has come up in Sweden: many people don't like it but anyhow I'll try to explain what I mean. One should look upon education and the school system like a quite ordinary business firm. No business firm could be run without some kind of assessment according to personnel, according to products, according to the working procedures and that holds true as far as I can see for

[redacted] school system. Certainly the material dealt within an education [redacted]tem is different from that in an aircraft shop or any other manu[redacted]cturing process but we must find tools for that type of assessment which I think must be of much the same type as we have in indus[redacted]. That's one good reason for having assessment. Another one which has been dealt with both by Dr. McIntosh and Mr. Hanford, is that if we care to make any progress in our schools, and at the uni[redacted]ersity level too, I think we must have much more precise definitions [redacted]f curricula and syllabuses. One way to do that is to make tests on [redacted]he syllabuses because you must have something more than these very common phrases which are given in at least the Swedish curricula. For example they say "one should get deeper into that" but the question is how much, and how far, and is every topic in that area of equal importance and so on. Now it is up to the schools and to the teachers, and I should say to the text-book writers too, to do some sort of curricula construction because the text-books, at least in Sweden, have more influence on the teaching than the curricula and that's because there are so many general phrases in the curricula. I should say that my Section has taken this up as far as test construction is concerned and we have already started to join with other groups within and without the National Board to form a body which will have the responsibility to do the analysis of the objectives and use them for quite different purposes. We must have detailed analyses in the construction of systematised teaching material for the television instruction, for the radio instruction, for the text-books and for the daily work in the school and we must have them for the tests.

The question of pass/fail has been of very little meaning for more than 20-30 years in the Swedish school system. You know up to this Spring, this is the last year, we have had the student examined by the final examination in the upper secondary schools. But the number of fails has always been so few that it had no practical meaning at all as far as admittance to university is concerned. Those who have passed couldn't all take the university courses and those who failed were too few to have any effect on the admittance situation. So we have for many years in fact got rid of the problem of pass/fail and we have had all students ranged according to scale and they have all had their certificates so to speak. Certainly I am fully aware that a low mark has the same practical meaning as a fail but we have instead another borderline. You must somewhere in the rank or in the distribution of marks put in a borderline for those who should be admitted. I mean the problem is the same: even if there is a

question of pass/fail you will have the same question again at the other end of the system in connection with admittance.

In this connection I might mention a few words about promotion. In the new comprehensive school all pupils are promoted: we have practically no repeaters. We think that in a compulsory system there is very little to be gained by having repeaters. I remember when I was very young and silly and ambitious I taught in a little country school. In fact there were four different forms in the same classroom and there were no special classes at all. I had a girl in the third grade who had repeated the first, the second and the third. She was in the fourth; she had spent seven years at school and was in the first year of the fourth grade. I was, as I said, silly and young and I thought the girl had not caught up to the standards. Lucky for the girl and for me I had a visit from a school inspector and I asked him what to do. He looked at me and said "I think you should promote her because otherwise she will never know that there are countries outside Sweden." I think this is a very fine point on the question of promoting in a compulsory system because you have very little guarantee that in repeating you could instil any more knowledge but equally you have very good reasons to think that you will hinder them from catching hold of something new and that is why we have practically no repeaters at all. The repeating problem in the comprehensive school is quite another sort. In the last grade forms many pupils and parents ask for repeating because otherwise they think they wouldn't get into gymnasium. This problem is so great that the National Board have had to tell our headmasters to be restrained in that area otherwise you will have two-year classes in grade nine instead of one and that just could not be managed for economic reasons so the problem of repeating is a very small problem now in the comprehensive schools. At the secondary level it is for the class conference to decide whether a boy or a girl could be promoted or not. The promotion could take place in two ways. In the first and natural one there is no trouble at all: the boy or the girl is promoted. The other one is that the class conference could decide that the boy or girl should leave one or two (not more than two) subjects out during the rest of the secondary education and then they have the opportunity during a period of four years after the last form to take in these one or two subjects so they get the full secondary education. There certainly is a third way: the class conference could say you must repeat but you could repeat only once in the new gymnasium. This scholastic year the second form is running for the first time and that means we have no experience about the system but the main thing is that it is the class conference which decides. It was not so in the

old system: now no special one particular subject will disqualify for promoting, and it is the general performance of the pupil that the class conference has to decide upon.

The school marks have for many years been the basis for transmission from the primary school to lower secondary, from lower secondary to upper secondary and from upper secondary to university and post secondary training. All research done in that area, at least in Sweden, shows that the best data you could use according to validity is teachers' marks. Not individual marks but the sum or mean of all marks because in that case the small differences between different subjects and teachers will even themselves out and you will have quite a good picture of the child. You could certainly increase the validity co-efficient a little by adding objective tests but, and this is a personal opinion, why spend so much work and so much money to raise the correlation co-efficient from say .60 to .65. I can't see why because for the individual child just above or just below the borderline this situation is almost the same.

So we think that the best way to raise the value of the teachers' assessment and the marks is to have a system where they could be "equivalated" as much as possible throughout the whole country because that is really the problem. As far as secondary education is concerned one could in Sweden say that this is not a nation-wide problem. You could have the "equivalation" within the special region from all these comprehensive schools who send boys and girls to the secondary schools of which there is only one in that region but as far as post-secondary education is concerned it is a nation-wide problem because boys and girls from all parts of the country could apply for, say, a veterinarian institute of which we have only one and in Stockholm, so they certainly have to be "equivalated."

I shall try to describe in detail, in some detail at least, how our system works. At the end of the thirties a very fine teacher at the teachers' college in southern Sweden started the work with standardised achievement tests. They were used on a try-out basis until 1949. From that year on we abolished the entrance examinations to lower secondary education and boys and girls are taken from the fourth or sixth form of the compulsory school system according to their marks into lower secondary and from lower secondary into higher according to marks and from gymnasium into university according to marks. At that time we set the system of standardised achievement tests into use. From the very beginning and until now it is an optional system, the teachers may or may not use the standardised achievement tests. During the first years there were some

problems but now we have 90-95% of the teachers using the standardised achievement tests in the different grades. It is up to the head master and the teacher to decide on what day the test ought to be given. The same day in the same school but we give them a period of say three weeks during which they can give the tests. If we take the different subjects, Swedish is given about March/April, English or German April, and Mathematics in May. In the upper secondary school the National Board decides upon the date for the test. The same day over the whole country. The tests are sent out and together with the test there are, both in the comprehensive and secondary schools, instructions on how to give the test, on how to correct it and so on. When the teachers have corrected the test they send back data for a sample and we use this sampling system, if it is a big grade subject, taking care of the whole age group in the schools. We ask the teachers to send in the results for all children born on the 15th in any month during the year. In that way we have a thirtieth sample of the year class and we form the norm on that basis and then the norms are sent back to the teachers, and the teachers' markings according to the test because the test itself must not be used as the sole basis for mark. The teachers have to do the same thing as they always have done; to make observation, to have their own written examinations, to put questions, have oral examinations and so on during the whole school year and on basis of this data they are asked to rank all pupils in their class and to put up preliminary marks according to that ranking list. So when the test is given the following is supposed to happen.

The teacher makes out a list of all his pupils on the basis of his own tests and observations in rank order. He then gives them preliminary marks on the five point scale. Once he has found the results in the national tests and has received the norms, he has to adjust. How does he adjust? He looks at the results of the test and from the norms he finds how many of his class got 5 or 4 or 3 and so on: he finds seven got 5 and seven got 4 and so on. He then calculates the mean which comes out at say 3.4. In his preliminary marks his mean was 2.6 and he had only three pupils marked 5 and five marked 4. The instructions tell him that he must adjust as near as possible to the mean and the distribution of the standardised test.

As you remember seven pupils got 5 on the standardised achievement test and that means that the teacher should have about seven pupils in his class with mark 5. Which seven? Yes—not those who had 5 on the standardised achievement test but the first seven in his own rank order. So the teacher goes down and counts to seven and

he finds there is no borderline between seven and eight so he gives eight pupils a 5 instead of seven. One should not be so bound up to numbers--you should use common sense. It is a very important thing in assessments in schools to use common sense! He then goes the whole way through and at the end has adjusted to give say eight 5s, seven 4s, four 3s, and three 1s. He ends with a distribution mean of 3.5 so that he has now almost the same level as for the national norm.

Then you say what about those subjects which have not any standardised achievement test? We have, as you can see in the summary, tests only in Swedish, Mathematics, Foreign Languages in compulsory school and in the secondary we have it also in Physics, Chemistry, Economics and Accounting. As these tests are not used mainly for the individual marking of a child one could use the results to some extent as an "equivalator" for all subjects because everyone knows that the correlation between distribution as far as means and standard deviations are concerned is much higher for groups than for individuals irrespective of subjects. When I am talking to Swedish teachers about this thing I use such a scheme. Well, when you take the mean for a class with 25-30 pupils there is very little difference between the means and if two are subjects with standardised achievement tests and two are not you can use the general level of the class in these two subjects as an equivalator for even those subjects which have no achievement test.

This is shortly the system we use in Sweden and if I might say a few words at the end about developments; I think that the next step we have already started will be to have the same type of test for our vocational students. We have started this this year but there I think we shouldn't have this type of pupil-related markings as we have in the comprehensive and secondary school but we should have what is nowadays called criteria-related system. You could do that quite easily in many of the subjects within vocational training. We have two or three developmental projects running. One is for Mathematics at the three upper stages in the comprehensive and one is for English and there is another for German and these projects are developing and in fact as far as Mathematics is concerned we this year have started a large scale try-out with the material with over 5,000 pupils involved and we can see that when we come to a more general use of this type of material the whole marking procedure and equivalating procedure will be much easier and built in to the daily routine in the school and not as now where the teachers have to do that marking for themselves and then we put in these tests which certainly have drawbacks. You can't be quite sure how they are used by the teachers. We know that there

are teachers who base their whole marking on the tests. And we we also know that some teachers find reasons for not using the results at it all if they don't think they are suitable for what they think of the standard of their class. It is so, it must be so when you have quite a l lot of people involved unless you just get down and sit behind them i when they use the system. But if the testing is built into a system wherere you have suitable material, suitable text-books, suitable methods and so on which the teacher can use when he sees that the boy or girl is o doing not so well in a special area; then he can have him or her transferred into another direction of study within that subject. I think we c could make the procedure gain from such a thing.

At the end I should say when one is talking about marking a assessment as we have done for almost two days and I have done it for at least one hour, I personally get a very peculiar feeling because one very easily comes to the conclusion that the marking and the assessment is the only aim of the school system. I should say it isn't so, it must not be so because any pattern of educational system, comprehensive or not, has so many other objectives to fulfil than just putting a mark in a five, seven, 200 point scale on a scrap of paper as a child's record after 12-13 years of schooling.

PRINTED AT RAJENDRA PRINTERS (P) LIMITED,
RAM NAGAR, NEW DELHI-55.

Committee On Examinations

Central Advisory Board of Education
Ministry of Education and Youth Services
India

Large Scale Examining—The Development of Objective Testing

G. H. HANFORD
Executive Vice-President, College Entrance Examination Board
New York

(Reprinted with permission for private circulation only from the Report of the Conference on Examinations, 1968 of the Scottish Certificate of Education Examination Board, Edinburg)

LARGE SCALE EXAMINING – THE DEVELOPMENT OF OBJECTIVE TESTING

My assignment this afternoon is to discuss with you the question of large scale examining for university entrance: to describe for you the methods of assessment that have been developed in the United States in the upper reaches of the secondary school and to share with you some thoughts about the aim and purposes and achievements and problems in the work and although this is my first visit to Scotland, I have been lucky enough to travel just a bit for the College Entrance Examination Board in other parts of the world and I have come to realise that as regards the U.S. system of university entrance or college admissions, as we tend to call it, neither our system nor the tests we have developed for use in it are precisely exportable and that our experience can be at best only tangentially applicable in another setting. I discovered in Japan for instance that some of my colleagues had apparently suggested that a national system of objective tests would eliminate the traditional 'shek en dee go coo' or 'hell of examinations' that there characterises the college admission scene. Among other things, however, they failed to foresee the strike threats on the part of students who perceived the new tests as part of an imperialist right-wing American inspired plot. Or, in Latin America, where the Professors told me that the U.S. type objective tests are regarded as a left-wing Communist threat to the perpetuation of the social and intellectual aristocracy. You realise that these two interpretations represent the extremes of a rather long continuum and that they provide you with a pretty wide range over which to let your imagination roam when it comes to guessing the political implications which might be attached to objective testing in Scotland. I know they provide me with ample warning not to try to advise you how to use such instruments and suggest rather that I attempt simply to describe to you how we have been and are using these tests in our own circumstances and leave you to the task of interpreting our experience to your situation. Now, although the multiple choice tests were introduced in our system in the twenties, it was not until the last decade that students were permitted to know their scores, the results of the tests. Into the fifties the rule of secrecy applied and the mystery of

the scores provided a very convenient refuge behind which h harriec Admission Officers of highly selective institutions could hide fronom any student or parent who questioned the College's decision to) rejec him, something simply could be muttered about inadequate c college board score and no one would be any the wiser and those wererere the days and circumstances when some Admission Officers were sa said to use the tests much as a drunk uses a lamp post, more for susupport than for illumination. Ten years ago the veil of secrecy had f finally been lifted by the forces of enlightenment and we at the CCollege Board have been engaged ever since in the always complex and d sometimes very frustrating task of attempting to explain to each succeeding class of secondary students, not to mention parents, teaachers, counsellors, headmasters and other wellwishers, to explain to) them the meaning of their test scores, for you realise that our test s scores have no meaning except in relation to the other criteria whichch are used in the admissions process: the criteria by which students d decide to apply to which college and by which colleges decide to accept w which students. And just as test scores have no meaning except in context, so the tests themselves can be comprehended really only withiin the total setting, that is in the light of all the relevant circumstances in the conditions in which the tests have been developed and in which they operate. So in order for me meaningfully to describe this total set of conditions as it pertains to the United States and from which remember I have invited you to draw your inferences with respect to the conditions here in Scotland, it is necessary for me to indulge in a series of mini-analyses relating to organisation, history, sociology, economics, education and psychometrics, an analysis which of necessity must be a little bit more involved than my earlier attempt at political science.

Well, first a quick overview of this College Entrance Examination Board for which I work. From an original exclusive interest in examinations for university entrance, which maintained really through World War II, the Board's arena of activity has in the last two decades grown to include testing for pre-college guidance, for college work done in secondary school, for credit by examination at the college level, for testing proficiency in English for use in evaluation of foreign students and testing in Spanish for use in Puerto Rico and Latin America. It includes also the central processing of family financial data to assist colleges in the award of scholarships and other financial aids, the training of admission officers and financial aid officers, the formal publication of more than 15,000,000 pieces of literature annually under some 100 or so titles, the management of a budget that

runs to something over £10,000,000 a year and the conduct of a seemingly endless round of meetings and conferences.

Now I am not sure what inferences you will draw from this recital of the activities of the College Board—perhaps that it's only another manifestation of our penchant over there for big business—but I hope that from some of the things that I shall say later you realise that some part of the nature and extent of all these activities really only reflects the complexities of university entrance in the United States. Nevertheless, the heart of our programme remains today our admissions tests and our admissions testing programme. Although I return later to a more comprehensive description and psychometric analysis, you ought to know a little bit about the size and dimensions of the programme right at the beginning. The number of examinations approached 2,700,000 last year; these involved about 1,700,000 registrants or individual candidates, from nearly 15,000 secondary schools tested on five Saturdays spaced throughout the year in nearly 5,000 testing centres throughout the world.

Substantively, the Admissions Testing Programme exists in two kinds: the three-hour Scholastic Aptitude Test, or S.A.T., and a series of one-hour subject matter Achievement Tests in English, Mathematics, the Physical Sciences, History and Social Studies and in Foreign Languages. Most of the member colleges of the College Board require the candidate to take the S.A.T., the Aptitude Test and many require them to take both the S.A.T. and several, usually three, Achievement Tests.

Now, despite the implications of its name, the Scholastic Aptitude Test is not an intelligence test. Rather it is a multiple-choice, generalised achievement test yielding two scores: verbal reasoning (V) and mathematical reasoning ability (M). The Achievement Test except for the English composition test which may include a short essay also consists of multiple-choice questions and students are guided by the requirements of the colleges to which they intend to apply for admissions in deciding which tests to take and on which of these five regular Saturday dates to take them. Standardised scores are reported, on a scale from 200 to 800, to colleges indicated by the student and to his secondary school. "Pass-fail" evaluations are not made by the College Board and each college is encouraged to use test scores in accordance with its own unique experience as to their validity.

Well, so much for the tests at the moment and now on to the setting in which they must be observed to be understood, to these mini-analyses of mine involving sociology, economics and, for a star-

ter, history. The College Board, as you have heard, was founended in 1900 in response to the concern of secondary school leaders oover the variety of subject matter entrance requirements among the le leading colleges in the north-east part of our country. Faced thereforore with the necessity of having almost as many, literally almost as many different courses in a single subject as there were colleges to which their students aspired, school headmasters called for and achieveved the adoption of uniform college entrance requirements. A commoion college preparatory content was achieved through the constructidion of commonly agreed upon, carefully prescriptive, syllabi and thihis was followed by the agreed use of uniform college entrance examinnations based on the content of those syllabi. These first "College Boards," and this is a phrase I will use because this is the way that ourur examinations are referred to generally, the "College Boards" were traditional written examinations and so too were the second generation of College Boards, the "Comprehensives." Still using the essay, free response, written examinations, they were based on a much more generalised course content in order that colleges might draw upon students from secondary schools which, because they did not traditionally prepare for college board colleges, were not followingg the standard carefully prescriptive syllabi. Well, to jump history fast, by 1940 the "Comprehensives" had become for most students thee college boards, but not for all and, to explain why, it's necessary to go back again to 1900 and pick up three more historical threads. While the colleges in the north-east were seeking to solve the admissions dilemma through the medium of common entrance examinations, another group of colleges in our mid-west, under the leadership off the University of Michigan, was developing a system of admission by accreditation, a system which said to a secondary school in effect that if the Faculty members had studied the right courses in the right universities, students who pass their courses and received diplomas would automatically be admitted to higher education. Thus at the beginning of World War II there was operating in the United States two quite different university entrance systems. A system of admission by examination and another system, quite apart, of admission by accreditation and it's not surprising under the circumstances, that the curriculum followed by students within and between the two systems could and did vary and it varied importantly, because, you must remember, in the United States we have local control of education. In secondary education it is the responsibility of the local School Board to set the curriculum. That the curricula varied widely is in part explained by a line of development which involved the appearance of the progressive education movement in the United States and this

phenomenon which budded in the twenties and blossomed in the thirties, spawned curricular innovations among schools preparing students in both systems that further inhibited College Board colleges in their attempts to attract nationally representative student bodies.

Fortunately for the College Board we had in Carl Brigham, a professor of psychology at Princeton University, a man of splendid vision, who had begun experimenting in the mid-1920's with multiple choice, objective tests and by the late 1930's these then new instruments had proven through the very large number of questions that they can ask, not only to be able to sample student achievement across a variety of curricula but also to make surprisingly accurate estimates of the basic scholastic aptitudes apparently essential to successful college work. By 1940 then, the S.A.T., the Aptitude Test and these one-hour Achievement Tests were being used by member colleges of the College Board in lieu of the Comprehensives—still written—using these new tests for a limited number of students, particularly applicants for scholarships and aid, from schools well outside the realm of those which were regularly preparing their candidates.

These were the circumstances in 1941 when history in the more usual sense intervened and the United States became directly involved in the Second World War. Travel restrictions made it impossible to assemble readers to grade centrally, as was the custom, written Comprehensives and so the template-scorable Objective Tests became the "College Boards."

Now, this period of ancient College Board history left many residual implications for the modern age of college admissions testing in the United States but the points I want to make here are that, as one studies our large-scale use of objective testing for university entrance, one must remember that the ultimate battle between the respective proponents of essay examinations and objective tests was never joined; that the ultimate definitive debate over the relative merits of hand-written, people-graded examinations and hand-stroked, machine-scored tests was never held. It was the fortunes of a real war, so to speak, that swept S.A.T. and the Achievement Tests through our cross roads of decision in the United States without a murmur of dissent and that some of the continuing controversy over the use of objective tests in our country reflects the fact that the debate never took place, that the issues were never clearly drawn, the necessary accommodations and compromises never satisfactorily derived.

Let me turn now to sociology and economics and here in the interests of time I must indulge in that favourite pastime of educa-

tional burreaucrats like myself – gross over generalisation. We e have in the United States been long engaged in the process of democratisation of education, a process that has both social purpose and economic impetus: young people have been successively kept in school lolonger not just because education is a good thing but because it helplps to meet the demands of an increasingly industrialised and technolological economy by cutting down on the untrained and building up the t trained man-power pool. Now taking this century in thirds, andl here come the generalisations for which I do apologise, the first sawww the achievements of universal primary and secondary education amdd the transformation of secondary education from an upper class priivivilege to middle class prerogative. Before that transformation the origginal syllabi-based examinations provided a neat conjunction betweenn secondary schools and colleges that were serving essentially the ssame constituency. But by the time it was completed even the less restrictive comprehensives were feeling the strain.

In the second third just ended the broadening of educatidonal opportunity in the United States has continued. Secondary educaation has become for us now virtually universal and higher education has been opened up to the middle class. To the words of others I shall leave the assertion of the proposition that the College Board objective tests played an important supportive role and you will findl in your document that was prepared in advance a quote from an artticle on the revolution in admissions at Princeton University. I will quote here only from the end of it and here the writer says "there is no doubt whatever that the current form of the College Board tests has been a major factor in promoting social mobility in the United States. That able boy from the Middle West could now be identified and given an opportunity for a Princeton education."

Now, as we begin the final third of the Twentieth Century, we have as a nation committed ourselves if not to universal higher education at least to universal opportunity beyond the secondary school. Roughly 50%, a little less today, of the age group in the United States does continue education in some form beyond the secondary school. As we enter this latest phase, it is not surprising that instruments which served so well in opening up college opportunities to the middle class do not appear adequate to the task of serving all classes and joining universal secondary education successfully to universal higher education, of dealing, with the average and peculiar man at the lower end of the normal distribution curve. And so it is that some of the criticism that you will hear in the United States about objective tests, about university entrance tests, is that they discriminate against some-

dy. And so it is too that we at the College Board are embarked now in the process of seeking to develop the next generation of measurement devices to assist in achievement of universal higher education, and we would like to break out of the mould of the paper and pencil test here and to develop other instruments that will help us to identify the creative, the highly motivated, the manually skilled person.

Having outlined this socio-economic line of development, linking examinations for university entrance with the democratization of education, I should like at this point to go back, pick up, spin out some of the other threads that I left dangling earlier in these remarks but which have to be woven into the pattern of circumstances in which our large scale programme of college admissions testing must be observed if it is to be understood. For example, I touched briefly on the two systems of university entrance that had developed and matured prior to World War II: Examination and Accreditation. Now the growing pressures for college admission, uneven pressures to be sure – extremely severe at some institutions and effectively non-existent at others because students have a choice you know of picking and choosing any college they wish – this increasing demand for higher education rendered both systems inadequate to the new circumstances. Both were predicted on the pass/fail philosophy. In one setting either you passed the examinations or you didn't, in the other either you graduated from an accredited secondary school or you didn't. In both, either you qualified for entrance and were automatically admitted or you did not qualify and were automatically rejected. However, as the pressures grew in these post-war years entrance to selective institutions became not just a question of whether a student qualified but one of by how much he qualified. For institutions with more qualified students than they could accept had to have some means by which to rank order candidates in order to make satisfactory choices among them, to predict which students would succeed better in a particular institution of higher learning. Now by another set of gross over-generalisations let me try to make the case this way. In the admission by examination camp, one problem was that the written examinations while graded with great care and reliability around the pass/fail point failed by reason of variation of the reader estimates to spread the total group of pass candidates with equitable precision. This was something that the objective tests could do but the price, as I tried to suggest earlier, was a loosening of the connection between the examining instruments and the specific subject matter which the student had studied in secondary school.

But because the objective tests could only sample what he ha had lea ed, some way had to be found of comprehending what a stucudent h studied and how well he had succeeded in those studies in n a sec dary school. This his record, his grades in school could do. o. In t admission by accreditation camp on the other hand, it was tl the var tion in grading standards among schools that had produceded an equity for which externally administered objective tests coupuld co pensate. So what happened was this. In the early 1950's ththere w a convergence or confluence and on occasion I fear, confusionon, of t two systems of admission wherein what courses a student had d studi and how well he had achieved in what he had studied aand ho well he had done in his tests, all three were taken i into a count in the admissions decision. Using these factors in uniqique cor binations, colleges were able to make much more reasonable e predi tions of college performance that they had ever been able to achiev under either of the original systems alone using one of the factors i isolation.

The demands for higher education refused to subside in t the lat fifties producing uneven pressures on our colleges and universsities a selectivity really promoted greater selectivity and as the prestitige co leges became harder to enter they became concerned about thee learn ing process within undergraduate student bodies that were beecomin ever more homogeneous with respect to academic aptitude: s studen bodies that might, as I understand your phraseology, be madee up o almost all high flyers. In their concern, therefore, they soughtt othe criteria on which to base admissions decisions and turn to wvhat ir jargon has come to be called non-intellective factors. Now onee mani festation of this search was the well rounded student, the laad who was not only smart but who had been active in a variety of extra- curricula ventures, was pleasant to have around and loved his parents. This concept lost some favour it seems when a former Dean of Ad- missions at Princeton University pointed out that the quintessence of well roundedness is the billiard ball which, being smoothh and round tends to take on a high gloss and is easily pushed around. Another obvious non-intellective criterion is the quality of leadlership and the fallacy of too great reliance on this one is a story that we tell at meetings with parents, we find it very effective with them as educators but as sophisticates you may find it dull. A college for women, highly selective, had introduced a parental evaluation form, this is a parent evaluating the child on experimental basis, and the father filled the form out very carefully leaving one question to the end and he went back to it and he pondered it at great length and he said "Well, I have been honest throughout I will be honest here,"

ma the question of this highly selective institution: "Is your daughter a leader or a follower?" and he finally checked "Follower." Two days later he had a telegram; he opened it with fear and trembling knowing it was from the college, and it said "Daughter admitted, have 299 leaders need one follower." A lot more serious is the attempt at Harvard College annually to attempt to build a freshman class that has what they refer to as "a happy fourth quarter." To admit a modicum of academically able students who will not be frustrated by not standing near the top of Harvard's academic ladder.

Now, to return to the field of solid geometry which I used earlier, there is in more general favour what I call the oblate spheroid philosophy, the young man or woman who was mostly rounded, mostly well-rounded but sticks out favourably in some particular direction. He's launched his own rocket, he's a good football player, she plays the harpsichord, he's a negro and runs the mile under four minutes. Now in the context of this very detached and objective analysis you will realise with me that objective scholastic aptitude tests and achievement tests were not intended to and therefore cannot measure or describe the so-called non-intellective factors. They can't because they were designed to do something else instead, to assess intellectual capacity and academic performance and yet you will hear our tests criticised today because they discriminate also on non-intellective grounds. Their critics say they don't pick out the fine perceptive mind, they look more to the quick facile type of mind, they are unfair to the under-privileged, they fail to measure creativity and motivation. My point here is simply that objective tests should be asked to do no more and no less than they are intended to do. A point which prompts me to go back and pick up another of my dangling threads, in this case the thread of evolving purpose.

You will recall that the purpose of the original College Boards was limited to ensure common entrance requirements. The tests were the tools, not the means, and that the subsequent transformations first to the Comprehensives and then to the objective tests were progressively liberating and permissive in their effects on the secondary school course of study, but, the tests can neither escape the curriculum nor the curriculum the tests and this reality of curricular and psychometric life when taken with the facts that curricular change did not stop with adjustment to progressive education but was further stimulated by the advent of the nuclear and space ages, this reality, these facts keep the tests always in a critical posture with respect to curricular change and thus a continuing question before our examiners is whether the tests should follow or lead the curricular

innovation and by how much. But these are questions of degreree — no kind, and the College Board's present policy with respect to tl the tes and the curriculum generally stated is that they should reflflect no determine what is being taught. That they should in effect t try t stay with curricular change not to get out in front too far or lag too far behind and thus it is that while the original purpose, indeed the primary purpose, of the original College Board was to prescribe curriculum it has in effect today become very much of a non-ppurpose Yet the perception of our tests as a tool of curricular influence persists with the result that curricular innovators, devotees of exotic subjects are forever trying to get us to examine in their fields off i interest in the belief that what is tested will be taught and we just plain wish they would go away and stay away.

But if the original purpose has become non-purpose, what aims and objectives do the tests have today? The root purpose as I attempted to explain earlier was and is to predict probable academic performance at the university level. The good multiple choice objective college admissions test is one that predicts well performance at the college level. But there is a practical application of this basic aim that is often recognised as the fundamental raison d'etre of the examinations, and this is to provide a common currency, a national yardstick among the variable grading standards of our 25,000 or so individual secondary schools. And here it is important that I make a point, an important point, probably the most important one I'll say all day. We find that the best single predictor of how a student will do in college is how he or she has done in secondary school. Grades in school predict college performance better than anything else, but we also find that when the leaven of the external tests is added, an even more accurate prediction can be obtained.

But while the test-maker sees his goal as that of constructing an effectively predictive instrument, and while the admissions officer regards tests primarily as a useful common currency, other purposes, unintended ones really, have become attached to the test. Students and their pre-college guidance counsellors have come to use test scores as counselling devices as a means of assessing the student's capabilities and helping him determine which college to which to apply. University Registrars use them for placement: whether to place a student in advanced or regular, or a retarded class requiring compensatory study. Thus it is that some criticism of the tests you will hear relates to their inadequacy as counselling and placement devices but these are purposes that they were never intended to serve.

Well, near the beginning of my remarks I made the point that

The admissions tests of the College Board could best be understood in the context of the circumstances in which they exist and I have this far attempted to relate the development of the tests to socio-economic conditions, the democratisation of education, to our increasing demand for higher education, the evolution of the admissions process in the United States, and the changes in the curriculum and in the criteria for admission in a country characterised by local control of education, to relate the tests again if you will to the external conditions that have influenced their development. So let me turn briefly and in conclusion to an analysis of the internal conditions which have shaped the tests, to psychometrics and the problems of test development and administration. I hope you will find this analysis a bit more meaningful now in the context of external developments therefore that I have attempted to describe than you would have in isolation.

In its own right, the Scholastic Aptitude Test, really grew out of Binet's success in measuring the intelligence of children in French schools, out of the success of psychologists in World War II with classification tests, and out of the success of such Britishers as Spearman and Fisher, building on the words of Galton and Pearson, in developing the appropriate statistical models. Their work indicated that the abilities important to academic success, having to do with flexible and discriminating use of words and mathematical symbols, were amenable to assessment by multiple choice questions. Brigham, our man of splendid vision, adapted their findings to testing for college admissions and found that they were applicable, found them to be more valid and reliable than the essay examinations and he found himself allied with those psychometricians who many considered no more than cold, inhuman statisticians, more like machines than people, but he found himself also allied with enthusiasts like himself. Psychometricians turned out themselves to be quite human and able to laugh at their own predilection for precision and statistics, they enjoy the story, I'm sure most of you have heard it but I enjoy it, that the psychometrician when asked by a friend he met on the street "How's your wife?" he replied "Compared to what?" For comparison, was at the heart of Brigham's work. Comparison of one student's performance on a test with the performance of other students, comparison or correlation of performance of all students on the test with their subsequent performance in college. As a result of his work the S.A.T. with its verbal and mathematical components was, as I have told you, introduced into the College Board tests in 1927 and then later added to in 1936 by the Achievement Tests.

As noted or suggested earlier, these objective tests, and particularly the S.A.T. succeeded because they were in tune with the times, because they could accommodate variations in secondary preparation, they could identify able students in any school, not just well-prepared students in privilege schools, because they could be administered economically and in large numbers. Imagine the problem we have today of assembling and preparing the number of examiners that would be necessary to read more than 2½ million essay examinations. To succeed you would have to get them all into Wembley I guess and lecture to them there. They succeeded because they helped make valid predictions of college performance and because they help colleges make reliable comparison among candidates.

They succeeded also because they have a viable internal rationale, viable with respect to design, development, analysis and scoring. Because objective tests can ask so many questions in a given period of time, they can sample a broader range of abilities and knowledge and in the process produce a more comprehensive measure of them and because each question has a best answer, grading can be absolutely uniform. These two characteristics lead of course to the familiar criticism that the tests do put too much emphasis on verbal facility and superficiality of reasoning and too little on profound analysis and creative thought. The fact remains, however, that by their number and their uniformity they can indeed range over a broad domain with different types of questions pegged at different levels of difficulty.

The tests also succeeded because the multiple-choice type question lends itself to the process of discovering empirically how a question works. Many more questions are prepared than will ever be used then, after careful editorial review, the survivors are pre-tested with appropriate groups of students. Here the psychometricians find out which items work, what their difficulty levels and discriminatory powers are, which ones appear to be clear and unambiguous, and which ones should be rejected. Individual items can then be assembled in appropriate combinations to produce test forms according to specifications with respect to content and difficulty level.

The tests have another advantage over written examinations in that the forms can be equated. Questions from earlier forms can be included in a new one so that appropriate conversions can be made from raw scores to scaled scores or, less technically, so that the scores obtained on different forms will always have the same meaning, will always be comparable. A 550 score will always mean the same thing.

The fact that our scores are reported on an arbitrary 200 to 800 has the advantage of implicitly denying the "pass-fail" dichotomy and does help in getting each college to use the scores in its own unique combination with the secondary school record. Here again I emphasise the importance of the school record because despite the scientific rationale that supports the tests, the scores are not all that accurate. On our scale, the chances are that a student's true score, the average of the ones he would get, theoretically if he were able to take tests an infinite number of times, his true score would be, two out of three times, within a 60-point range, that is 30 points either side of the score he got. This is true because the sample of a given domain that can be covered by a single test form has its practical limitations and produces the phenomenon that we know as the error of measurement.

As you will infer, one of the major problems in using objective tests is in explaining this phenomenon to students, parents, and teachers all of whom tend to misread a precision into the fact that a College Board score is reported in three digits. They say obviously a boy with a 550 score must be 10 points brighter or better or something than another lad with a 540, and it just isn't so.

While the psychometric rationale of the tests has remained pretty much the same in the last thirty years, the problems of test development, administration, and interpretation have perforce become more complicated. As suggested earlier, curricular change has complicated the construction of the Achievement Tests. The sheer volume of the enterprise puts strain on the administrative machinery, on finding centres and employing supervisors, on predicting workload and registering candidates, on printing the tests, on estimating how many have to be printed, on maintaining security, so that you can use the items on the test forms several times, on scoring the tests and the results and on explaining what the tests do and cannot do. The numbers have put pressure on the technology of the Computer machines as well, but here I can assert that the ingenuity of my data processing colleagues has kept pace with the demands and in fact they are now talking about scoring machines, and I don't honestly believe this, that can handle up to 90,000 tests an hour.

In closing let me return to the point made earlier that tests in their present form, we feel, will not be adequate to the sociology and economics of the future. As one of my colleagues has written "the limited supplementary information they provide may not be necessary as school-based information becomes more complete and manageable," and we will hear about this in another context tomorrow, "the

emphasis they place on selection, and therefore exclusion, is increasingly out of place as education opportunities expand, setting a premium on guidance and placement rather than selection. Common uniform examinations for all students will probably make less sense as teaching becomes more individualised and computer-based tests, that adjust to individual differences among preparation and abilities of students become a reality. Overwhelming dependence on reading, on abstract verbal reasoning ability cannot help but be out of joint as learning through media other than words becomes important and as the development of perceptual and kinaesthetic skills as well as cognitive ones assume more prominence."

We intend to test these hypotheses and assertions to assay the tests and hear the critics and to help the College Board map a testing programme that will serve the needs of the next decade, the 1970s. We have appointed a distinguished Commission on Tests to undertake this task. I look forward in 1978 to hear a representative of the College Board speak to an audience such as this on "Large Scale Examining—the Development of Objective Testing." I suspect there will be a good deal of history for us all between then and now.

PRINTED AT RAJENDRA PRINTERS (P) LIMITED,
RAM NAGAR, NEW DELHI-55.

Committee On Examinations

Central Advisory Board of Education
Ministry of Education and Youth Services
India

The Free Progress System

KIREET JOSHI
Registrar, International Centre of Education,
Sri Aurobindo Ashram,
Pondicherry

Pondicherry, India
26th October, 1970

INTRODUCTION

It is universally admitted that the normal system of tests operating in our Country and elsewhere is obsolete and needs a radical change. Tests are, it is said, contrary to the sound principles of the psychological growth of children, and they are in their effects opposed to the right aims of education.

We all wish our children to develop and to enrich their faculties; we all wish our children to learn attention and concentration; we all wish our children to thirst for knowledge and perfection.

We do not, however, know how to achieve these desirable things, and our system of tests is a direct result of the human mind's method of solving subtle and complex problems by means of simplification and of reducing living processes to so-called practicable rigid and deadening routines.

We want our children to wish to learn; not knowing how to inspire the children to learn, we give them the threat of exams and force them to learn. We want our children to be regular in their pursuit of studies; not knowing how to instil this precious habit of inner discipline we increase the number of tests, and make the entire process of education a constant process of moving from tests to tests. We want this unnatural system of tests to succeed, and so we propose a fixed syllabus and insist that every child must go through the syllabus even while we all educationists know that there are several different ways of learning the same thing, and that there are variations of speed of learning and variations even in rhythms of interests.

It is so rational to argue that the tests have to be objective; but not knowing how to make the class teacher himself objective and impartial in his judgment, we insist that the child should be examined by someone who has had no contact with him. But even this 'someone' may have his own prejudices, so naturally, we should have still some other one to counteract the former. This vicious circle of checks and counter-checks is, it is admitted, not at all satisfactory. But how practicable and facile it is in practice! And can it be replaced, it is asked, by anything better?

Tests are necessary, it is argued; for how else can we judgge the progress of the children? The rationality of the argument is soo obvious. But we know that there are tests and tests, and yet wee rely mostly on written tests; and we know also that the written teststs can easily be tests of memory which even a silly, mechanical mindd can without much difficulty acquire. A saner view, however, has teended to give some importance to oral tests, homework and day too day work, but....these, it is argued are likely to be so subjective : that they could be given only about 20% value or perhaps a little nmore. The lion's share must be given to one single Final Written Tesst.

We have, of course, forgotten to ask how we are to testt the growth of sincerity, truthfulness, cheerfulness, prudence, perseverrance, benevolence, simplicity, straightforwardness, honesty, justice, couurage, love, and hundreds of such qualities which we as parents and ecducationists desire most heartily should blossom in our children's teender hearts. These are indeed beyond the purview of the written testts, or most of the other tests. And the pernicious result is that we have tended to banish the development of these qualities from the serrious concern of teachers.

And what about the still deeper aims of education? What about the psychic and spiritual dimensions of personality? What about the higher domains of consciousness, and what are we to do to lead the children to aspire for and to climb the hills and mountains of luminous peaks of the supreme Knowledge and Power?

Once again, shall we omit these sublimest aims of education because they can't fit in with our system of tests?

What is the solution?

It must at the very outset be said that the solution is extremely difficult to find, and even when found, it is still more difficult to implement.

It seems that our attention must be directed to one central thing in education, *viz.*, awakening the child to the mystery and wonder of existence and the nourishment of this awakening leading to the supreme Knowledge and Power and Joy.

The entire system of education should aim at providing to the students the inspiration which would aid the process of awakening.

It is needless to say that the real inspiring force is the example and influence of the teacher.

But there should also be a new type of structure of the organisation of studies through which the inspiring force could effectively flow and permeate the breath and spirit of the students.

An attempt has been made at the International Centre of Education of the Sri Aurobindo Ashram to create this new type of structure, and efforts are being made to create still better structures.

SALIENT FEATURES OF THE FREE PROGRESS SYSTEM

The following are the salient features of the present structure of the organisation that has come to be called "Free Progress System":

(a) The structure is oriented towards the meeting of the varied needs of the students, each one of whom has his own special problems of development;

(b) It is not merely the 'subjects' of study that should count in education; the aspiration, the need for growth, experience of freedom, possibility of educating oneself, self-experimentation, discovery of the inner needs and their relation with the programme of studies, and the discovery of the aim of life and the art of life—these are much more important, and the structure of organisation must provide for them;

(c) In the system, each student is free to study any subject he chooses at any given time; but this freedom has to be *guided;* the student should experience freedom; but it might be misused; the student has therefore to be watched with care, sympathy and wisdom; the teacher must be a friend and a guide, must not impose himself, but may intervene when necessary. The wastage of opportunities given should not be allowed indefinitely. But when to intervene depends upon the discretion of the teacher.

(d) A great stress falls upon the individual work by the students.

This individual work may be a result of the student's own wish to follow a particular topic of interests; or it may be a result of a suggestion from the teacher but accepted by the student. It may be of the nature of a follow-up of something explained by the teacher, or it may be of the nature of an original line of inquiry.

This 'individual work' may be pursued in several different ways:

(i) by a quiet reflection or meditation;

(ii) by referring to books or relevant portions of books s suggested by the teacher;

(iii) by working on "work sheets" prepared for the studennts by the teachers;

(iv) by consultation or interviews with the teachers;

(v) by carrying out experiments;

(vi) by solving problems;

(vii) by writing compositions;

(viii) by drawing, designing, painting, etc.

or

(ix) by any other work, such as decorating, cooking, carpentry, stitching, embroidery, etc.

(e) There are topics in each subject where lectures are useful; and for these topics, lectures are organised; but these lecture classes are comparatively fewer than those obtained in the classical system. This necessitates the announcement of time-tables every week.

(f) There are also classes of discussions between teachers and students and between students and students. These discussion classes again are not compulsory. However, the discussions do not pertain merely to academic subjects; they often centre round the individual needs of growth, and thus they provide an opportunity for guiding the students in their inner search.

(g) In each subject, there are topics which more easily yield to the project system; teachers therefore announce a few projects in each subject, and students according to their choice select some of the projects for which they collectively or individually work and produce charts, monographs, designs, etc. which are periodically exhibited for the benefit of the whole school.

(h) The role of the teacher in this system may be summarised as follows:

To aid the student in uncovering the inner will to grow and to progress—that should be the constant endeavour of the teacher;

To evolve a programme of education for each student in accord-

nce with the felt needs of the student's growth; to watch the students with deep sympathy, understanding and patience, ready to intervene and guide as and when necessary, to stimulate the students with striking words, ideas, questions, stories, projects and programmes; this should be the main work of the teachers.

But to radiate inner calm and cheerful dynamism so as to create an atmosphere conducive to the development of higher faculties of inner knowledge and intuition—that may be regarded as the heart of the work of the teachers.

(i) An adequate organisation of the above working of the Free Progress System would need the following:

(1) A Room or Rooms of Silence, to which students who would like to do uninterrupted work or would like to reflect or meditate in silence can go as and when they like;

(2) Rooms of Consultations, where students can meet their teachers and consult them on various points of their seeking;

(3) Rooms of Collaboration, where students can work in collaboration with each other;

(4) Lecture Rooms, where teachers can hold discussions with their students and where they can deliver lectures—short or long—according to the need.

The study of each subject can be so directed that it leads ultimately to the discovery of the fundamental truths underlying the subject. These fundamental truths form ultimately a unity, and at a higher stage a philosophical study of this unity would itself contribute to the deepening of the sense of Truths which directly helps in the maturity of the psychic and spiritual or yogic aspiration.

The sense of the unity of the truths would also contribute to the reconciliation of the various branches of Knowledge, thus leading to the harmony of Science, Philosophy, Technology and Fine Arts. In the spiritual or yogic vision, there is an automatic perception of this unity, and in the teaching of the various subjects the teacher can always direct the students to this unity. In the words of Sri Aurobindo: "The Yogin's aim in the sciences that make for knowledge should be to discover and understand the workings of the Divine Consciousness-Puissance in man and creatures and things and forces, her creative significances, her execution of the mysteries, the symbols

in which she arranges the manifestation. The Yogin's aim i in the practical sciences, whether mental and physical or occult and psychic should be to enter into the ways of the Divine and processes, to know the materials and means for the work given to us so that we may use that knowledge for a conscious and faultless expression of the spirit's mastery, joy and self-fulfilment. The Yogin's aim in the Arts should not be a mere aesthetic, mental or vital gratification, but seeing the Divine everywhere, worshipping it with a revelation of the meaning of its works, to express that One Divine in gods and men and creatures and objects. The theory that sees an intimate connection between religious aspiration and truest and greatest Art is in essence right; but we must substitute for the mixed and doubtful religious motive a spiritual aspiration, vision, interpreting experience."

There are golden reaches of our consciousness, and from them and from the reaches intermediate between them and our ordinary mental consciousness there have descended, forces and forms which have become embodied in literature, philosophy, science, in music, dance, art, architecture, sculpture, in great and heroic deeds and in all that is wonderful and precious in the different organised or as yet unorganised aspects of life. To put the students in contact with these, eastern or western, ancient or present, would be to provide them with the air and atmosphere in which they can breathe an inspiration to reach again to those peaks of consciousness and to create still newer forms and forces which would bring the golden day nearer for humanity.

The teachers and scholars at the Ashram are preoccupied with this work, and their research work in this direction is contained not only in their published or unpublished books, but also in the actual contents of their day-to-day work and lectures and in their organisations of exhibitions, of dance, drama, music, and numerous other educational activities. An adequate account of this work would fill a volume.

It is in the context of this vibrating and powerful process of the psychic and spiritual education that the activities of the physical, vital and mental education are set and worked out at the Ashram. In each of these fields, again, there are specialists in the Ashram who are engaged in various activities of experimentation.

THE PLACE OF TESTS IN THE FREE PROGRESS SYSTEM

It is not true to say that there are no tests and no assessments in the Free Progress System. Written or Oral tests are indeed useful

in relation to certain areas of intellectual development. But these tests must be individual and adapted to each student, not the same mechanical test for all of them. Tests must be spontaneous and unexpected leaving no room for pretence and insincerity.

There are periods of intense interest and enthusiasm. During these periods, tests would very often tend to dampen the enthusiasm and would lead the student to turn to artificial or mechanical processes of learning. There are periods of dullness, during which tests in the form of challenging or stimulating questions would help the student to come out of mental inertia. There are again periods when the student needs revision, and then broad questions involving some panoramic view or comparative study would be very suitable. Students also need often to be precise and accurate about what they have read or understood. And there, questions involving short and precise answers would be welcome. And thus there are varied needs at different times, and the Free Progress System provides the facilities to the teachers to give to each individual the type of the test that he needs.

The syllabus in this system is evolutionary. It grows and develops with each individual's pace and need of development. It should once again be stressed that we wish, during the 13-year School Course (Kindergarten, primary, secondary and higher secondary), to awaken the child to his soul, that is to the existence in him of a Divine Spark, as a living Presence to whom he can refer and from whom he can draw guidance, comfort and help in dealing with the problems and difficulties of daily life. This is our aim.

If we can succeed in providing the child with an educational environment and the individual attention of spiritually awakened teachers so as to enable him to work in full freedom with interest and joy—both always go together—during these thirteen long years, we feel sure that the best in him will be brought to the surface and made active. Even if it does not bring him any academic recognition, he will have acquired concentration, the capacity of learning, self-confidence and poise. Whatever knowledge he now has is certainly well understood and assimilated. At this level the "quantity" of factual knowledge in the child's mind is of little importance. Gaps may be filled easily later when the need arises, as he will have learnt how to use documentation. And certainly his contribution to society and the world will be the best that he can make. This is truly our programme.

If the child—now about adolescent—chooses freely to pursoue his studies, our Higher Course offers him a comprehensive set of suubjects from which he may select as many as he wishes, to give a widde and solid base to his knowledge. In each of the selected subjects, the student will work projectwise under the individual attention (not leadership: the leader is the student's soul not the teacher, howwever, learned he may be!) of capable guide.

In the matter of assessment of the progress of the studernts, a great stress is laid upon the behaviour, concentration, regullarity, promptness to understand and openness of intelligence. The teachers are asked to take it as a discipline to rely more on innerr contact, keen observation, and impartial outlook.

Records of the progress of each student are maintained. Students themselves fill up their own progress records, and teachers ttestify to these records or make their own comments. The teachers who are in charge of the over-all progress of the students meet and discuss the progress of the students and make recommendations to the students as to how and in what direction they should develop. The remarks and comments of various teachers pertaining to each student are compared and a final judgment is passed whenever necessary by taking into account all the relevant data of the progress.

Each topic is studied as a flexible and ever-widening subject, and the student is permitted to move onwards with tests as and when necessary. Promotion is not an annual feature, but it is a constant process. Students may move fast or slow according to their capacity; they may move faster in regard to some topics or subjects, slowly in regard to the others. They may stop for the time being a given topic or give it up entirely if the interest wanes. But students are being watched, and the teachers consult the students and advise them whenever necessary and endeavour to put them on the right road to perfection.

For us, the one constant object is to serve the highest aims of education, viz., to lead the students to aspire for and to climb up the luminous peaks of knowledge and power and delight.

Printed at Rajendra Printers, Ram Nagar, New Delhi-55.

Committee on Examinations

Central Advisory Board of Education
Ministry of Education and Youth Services
India

Evaluation in Soviet Schools

R. A. ABULKHANOV, M. F. KALPAKOV
&
V. M. GALUSHIN

National Council of Educational Research and Training
Department of Science Education
New Delhi
November 19, 1970

I. INTRODUCTION

Comparative studies of education in various countries are now widely being used in the attempts to establish the relevance of specific educational development experience in conditions characteristic of other countries.

It is, therefore, only natural that a large share of educational research in the West and elsewhere is focused on the working of the Soviet system of education.

A careful reader of such research will, however, often notice a major flaw even among the most reliable books and papers on the subject whether it is a study of the system as a whole or of a particular aspect or problem.

This flaw is the failure to view the matter in historical perspective.

To illustrate this with one example:

The Soviet Union, as is well known, has inherited a hard legacy from the former Russian Empire. On the eve of the October Revolution, over two-thirds of the country's population were illiterate. Illiteracy among the national minorities was even higher, namely 98-99 p.c. The leading capitalist powers, on the other hand, had introduced compulsory primary education as early as the 19th century and had achieved full literacy by the time when the world's first socialist state just started overcoming the cultural backwardness. However, many Western specialists in comparative education overlook this circumstance and compare educational data on different countries neglecting the specific historical conditions of their development.

Conclusions and recommendations made on the basis of such "comparisons" distort the reality, particularly when educational systems of capitalist and socialist or those of capitalist and developing nations are being mechanically compared.

One, therefore, will be well-advised not to forget about this tendency and to treat such conclusions cautiously.

This warning is equally valid when more specific problems, such

as evaluation, are concerned. It would be wrong to judge orn the merits and de merits of a system of evaluation being used in a particular country only by, say, the number of computers utilized to evaluate students' performance or by the extent to which standardized "objective" tests are practiced. Rather, the effect of a system off evaluation should be assessed by the extent to which it meets the present day requirement of a given system of education.

II. EVALUATION IN SOVIET SCHOOLS

1. *Background and Approach*

It is in the light of the above remarks that evaluation in Soviet schools should be viewed.

Though Soviet educators, following the traditional approach of progressive Russian pedagogues have always assigned evaluation an important role in school education, there have been times when the traditional objectives and methods of evaluation were considerably "de-emphasised."

Thus, in the first post-revolutionary years, the immense task to make education accessible to tens of millions of people temporarily diminished the importance of evaluation for placement and promotion of students. Moreover, in those days promotion of students was often decided by student note on the basis of social criteria rather than academic performance.

On the other hand, this partial departure from traditional evaluation was the result of a large-scale experimentation in pedagogics which was stimulated by the need to replace the old by the new.

It is only natural that many of the innovations—both home-made and borrowed from abroad—let alone such extremes as promotion by student vote, were short-lived.

Some were rejected as incompatible with the proclaimed goals in education or as merely unnecessary. For example, ability testing and, particularly, the "streaming" of children on the IQ basis have never been popular with Soviet educators as aimed at social selection.

We shall, therefore, confine ourselves only to the discussion of the second of the two broad categories of evaluation, namely achievement evaluation.

2. *Main forms of evaluation in Soviet Schools*

Among the many possible and practicable forms of achievement assessment *current assessment and examinations* are the most widely used. In their turn, either may be *oral* or *written.*

(a) *Current assessment*

Current assessment of the student's performance begins actually from the very first day of his school life.

Ordinarily, the teacher calls up to the front of the class 1 to 4 students at almost each lesson to review the home assignment or past material in general. As none of the students of the class know in advance which of them will be called they all have to be prepared and alert. In practice, however, the teacher attempts to call up students more or less evenly.

The rest of the class are encouraged to volunteer their corrections and opinions. Those who show a deep knowledge of material or are particularly active are allotted marks though normally only those who have been answering in front of the class are supposed to be formally assessed by means of marks.

The teacher sums up the students' answers indicating the weak points and the strong points. This helps the class to realize what was the best way to interpret the material of the home assignment and avoid making similar mistakes in future. In short, current assessment in oral form plays a highly stimulating role in the instruction helping students to gradually and systematically improve their knowledge and learning skills.

It is not only the knowledge of facts which is assessed though recall of knowledge is not ignored. An important feature of current assessment is that it provides an opportunity to simultaneously develop students' creative thinking, arouse interest in the subject and develop persistence in learning it.

Unlike oral assessment, assignments to be done in written form, the so-called "control work" usually cover more material and are given monthly and bi-monthly. These, as well as papers covering a term, a semester, or a whole year, are prepared by the respective teachers and assessed by them.

In science and mathematics "objective" type questions are coming into use while essay-type tests are predominant in social sciences, languages and literature.

Though the results of these tests do not essentially affect the student's final mark in a subject, they are considered important "watersheds" and are closely analysed by teachers, school management and education boards. A lesson or two are devoted to a thorough discussion of the results with the students.

Written tests enable the teacher to obtain a more or less true picture of his students' achievements. The results of such tests show to what portions of material more attention should have been given, and make it possible to correct the initial plans of work.

On the other hand, a detailed analysis of the work helps the students to realize their mistakes and concentrate on the sections of the course which might have been studied insufficiently.

Marking

The system of marking the student's performance is rather simple. It is a five-mark system, the mark "one" being the lowest while the "five" being the highest. The lowest mark is however, used very seldom. The "3", roughly corresponding to "fair", is the pass mark.

At the end of a term (or semester in classes 9 and 10) integrated marks are alloted on the basis of marks for current work and written tests.

In turn, these terminal (or semestral) integrated marks are used—in classes 1 to 7 and 9—for the allotment of one final integrated mark for the student's work during the whole academic year.

All students with marks above "two" are promoted. Students with 1 to 2 integrated final marks below pass are also promoted but on condition that they show better results when they have another chance. Ordinarily, such students get assignments for the summer months and what they have done is checked up on the eve of the new school year. However, it is not that the school completely estranges itself from assisting such students: summer consultations are organized and, usually teachers guide them in their review of the course.

In short, every facility is created to help such students to catch up with their class-mates.

One would perhaps argue that all this means an additional burden laid upon the teacher. It is, however, necessary to bear in mind

that current assessment enables both the teacher (and his students) to foresee, to a large extent, the possible pitfalls for the weaker student.

In this way, the possible number of failures is greatly reduced. This is not to say that this system of Current Assessment is practicable in all cases. In an educational system built on the principle of streaming it will, indeed, be an additional headache. But in a system such as the Soviet system of education which, fundamentally, is against streaming at the general school stage such practices seem to be useful. In any case the persistence and encouragement on the part of the teachers and school as a whole and the cooperation of the parents ensure that most of the students do study well and acquire a sound basic knowledge and develop necessary skills. It will be perhaps appropriate to emphasise here the one central difference between the educational systems in the Soviet Union and the West. The former attempts to provide to all school children a high-standard education irrespective of their future plans, the latter, despite the advantages it may have, inevitably tends to leave a large part of school students without a sound knowledge of either the exact sciences or the arts.

On the other hand, one would hardly claim that a hundred p.c. success could be achieved even with the most competent teachers and the most cooperating students. This means that though, given the rising standards of living, the number of drop-outs for reasons unrelated to academic performance is at present practically nil, the number of "repeaters" is still rather high, *viz.*, 3 to 5 p.c. of the total enrolment.

In this category, students with three or more "bad" final marks for the year account for about 80 p.c., students left in the same class for health reasons for about 15 and others for about 5 p.c.

(b) *Examinations*

An important form of evaluation of students' achievement remains the examination.[1]

At present examinations are held only twice—at the end of the 8th and 10th years of schooling.

---

1. Few, perhaps, know that in the first years after the 1917 revolution, there were no examinations in Soviet schools at all: they were abolished by a government decree. In later years, on the other hand, students were to take examinations in almost each subject they studied.

Both the inter-stage exam—in class 8—and the exam for the G.C.E. are important events in Soviet school life though the system is not examination-oriented as it may be the case in other countries.

The subjects in which examinations are held (in oral and written form) are given in the following table.

TABLE

Examinations in Soviet Schools*

Subject	*Class* 8		*Class* 10		*Total number*
	Oral	*Written*	*Oral*	*Written*	
Mathematics	+	+	—	—	2
Algebra and Trigonometry	—	—	—	+	1
Geometry	—	—	+	—	1
Physics	—	—	+	—	1
Chemistry	—	—	+	—	1
Russian language	+	+	—	—	2
Russian language and literature	—	—	—	+	1
History & Social Science	—	—	+	—	1
Foreign language	—	—	+	—	1
Total	2	2	5	2	11

*In national republics where there are also schools with local languages as the medium of instruction students are also examined in the mother tongue and literature.

At oral examinations, students choose one from 25 to 35 so-called examination tickets which contain three or two questions. The questions are constructed by the Union Ministry of Education[2] and are circulated among schools about two months before the examinations are due.[3]

Both examinations are *internal* examinations though officials of Education Boards, students committees and representatives of public

2. Except for tickets on the mother tongue and literature which are constructed by Education Ministries of Union or autonomous republics.

3. For the reader's easy reference samples of examination tickets in various subjects for the G.C.E. in the 1969/70 school year are given in *Appendix* (translated into English).

organizations such as the Young Communist League etc., are often present at the examinations.

However, the assessment is done either solely by the class teacher, who is normally the examiner, or by a committee of two teachers of the same subject. The latter case is a common practice in assessment in examinations for the G.C.E.

As one might have already guessed, current assessment as viewed in Soviet Schools ensures that examinations alone do not play the decisive role in the total assessment of the student's performance in school. Therefore, no sudden failure (or display of brightness for that matter) is usually expected.

The examiner is entitled to allow, in contradictory cases, the candidate to have another go, or to mark the answer taking into account his past record.

Students, thus, are not unnecessarily fearful of examinations. At the same time, examinations retain their role as a powerful means by which consolidation of student knowledge is achieved. Again, students themselves are interested in better marks as the weightage informally allotted to examination results is roughly about 30 to 40 p.c. of the final mark entered in the 8-year school certificate and the G.C.E. For the top student each "4" or "5" earned by him in final examinations is of particular significance: gold (or silver) medals[4] are awarded only if he managed to get "5s" or "4s" in all the exams he has taken and provided his final marks are not lower.

(c) *New Trends*

Though, within the scope for which it was intended, the system of evaluation practised in Soviet schools has been adequate, there have in recent years emerged factors calling for a diversification of the system.

Some educators in the U.S.S.R. regard it as overnegligent of the possibilities, particularly in raising the objectivity level, provided by quantitative methods in the form of knowledge testing devices and carefully developed "objective" type questions.

Against, evaluation by impression, in the conditions of an increased competition for admission to Universities and other institutes

---

4. The awardees, other factors being equal, have an edge over other candidates at University admission examinations.

of higher learning, is lacking in hard evidence to support the marks given.

Current research in the U.S.S.R. on problems of evaluation concentrates therefore on attempts to work out best methods of evaluation drawing on world experience and the experience accumulated at home.

In the past 2 to 3 years, the need for an optimal system combining the advantages of various methods of evaluation has increased in view of the currently implemented wide range reform of school education.

To sum up, it is perhaps appropriate to complete the discussion by quoting what A. I. Markushevich[5] says in a recent article in the journal "Soviet Pedagogics" (September 1970 issue). "The necessity to develop objective criteria is dictated not only by the tasks of today and immediate future but also by what school and pedagogical science will need in a more distant perspective. It is necessary to accummulate data on assimilation (by pupils) of each subject in the curriculum and of various sections in each subject and data on the formation of cognitive abilities of the student, in order to be adequately prepared for the next improvement of the content of secondary education."

NOTE

Excerpts from "Guidelines on the tickets for Matriculation Examinations for the G.C.E." and sample tickets (1969-70 school year)

1. Oral examinations for the course of the secondary school in the 1969-70 school year are held in Byelo-Russian literature,* History of the U.S.S.R. and social science, geometry, physics, chemistry and foreign language.

Tickets on *Byelo-Russian literature* are aimed at checking the

---

5. A. I. Markushevich, Vice-President, USSR Academy of Pedagogical Sciences, has been in charge of the high-level committee on whose proposals the decision on the reform was taken.

*Questions are prepared by the Ministry of Education of the Byelo-Russian Republic.

knowledge and understanding of questions related to the history of development of Byelo-Russian literature; the knowledge of basic facts of the life and creative work of writers; the knowledge of the literary works which have been studied; the ability to analyse and independent judgement; the ability to express ideas logically, correctly and clearly; to draw conclusions and generalizations; to understand main questions of theory of literature; the ability to see the link between literature and life.

Tickets on the *history of the U.S.S.R.* and social science include one question on U.S.S.R. history and one on social science. At this examination, students are permitted to make use of maps, tables, statistical reference books which do not contain an expanded text. Separate examination marks on U.S.S.R. history and social science are allotted.

Geometry tickets, besides theoretical questions, include problems or practical assignments constructed or chosen by the teacher.

Geometry problems may involve calculation, proof and construction while practical assignments—calculation of volumes and surfaces of polygons, these assignments being such that some elements of polygons are measured by the students immediately while others are calculated from the results obtained.

In conducting examination in *physics* and *chemistry* particular attention should be given to the understanding by the student of the materialness of the world, its unity, inter-relationship and interdependence of natural phenomena as well as the understanding of the materialistic theory of the cognigibility of the world and the objective laws of its evolution.

Tickets on physics and chemistry contain laboratory work assignments, experiments and solving problems involving calculations and experiment. In some cases it is necessary to make calculations in connection with demonstrational experiments and laboratory work.

If the required substances and equipment are not available, laboratory work and experiments indicated in the tickets may be replaced by other similar assignments.

The tickets indicate only the *type* of laboratory work, experiments and problems. Subject teachers themselves construct or select such assignments from available sources. Tickets should contain problem solving, which makes it possible to check the student's skills in a conscious application of theoretical knowledge.

Laboratory work is done by the candidate during his prepparation for the answer. During the answer he reports on the coourse and results of the work explaining, if necessary, the relevant theeoretical points; demonstration of the arrangements used for the llaboratory work is obligatory.....

In all types of schools, teachers conducting oral examinattions should prepare, not later than two weeks before the end of the studies, examples, problems, and practical tasks in algebra and elementary functions, geometry, physics and chemistry as well as ttexts for reading, questions on the texts and topics for discussion for the examination in the foreign language.

All these materials are approved by the school Principal and are *not* made available to the students before the examinations..

SAMPLE TICKETS ON BYELO-RUSSIAN LITERATURE

Ticket No. 4

1. Satirical characters in Kondrat Krapiva's comedy "Whoo is the Last to Laugh."

2. The theme of friendship among the peoples of the Soviet Union in the works by Yanka Kupala. Connection between the creative work of the people's poet and the literature of fraternal peoples.

Ticket No. 13

1. Glorification of the deeds of the Soviet people during the Great Patriotic War in the works of Petrus Brovka. Recite a poem (optional).

2. Display of the life of the Byelo-Russian peasantry in the trilogy by Yakub Colas. Discuss the genre of his creative work.

SAMPLE TICKETS ON U.S.S.R. HISTORY AND SOCIAL SCIENCE

Ticket No. 11

1. Historic prerequisite of the Great October Socialist Revolution. Lenin's plan of armed uprising. Victory of the armed uprising in Petursburg.

2. Collective bargaining. Protection of labour in the U.S.S.R. Radical differences between socialist and capitalist labour relations.

Ticket No. 26

1. The U.S.S.R. in the struggle for peace and security of nations on the eve of the Second World War. Soviet economy and strengthening the defence of the country.

2. Historical preconditions for the emergence and evolution of marxism. Three constituent parts of Marxism–Leninism.

SAMPLE TICKETS ON GEOMETRY

Ticket No. 10

1. Volume of pyramid.

2. Perpendicular planes. Indication of perpendicularity of two planes.

3. Problem or practical task.

Ticket No. 18

1. Sphere (definition). Intersection of sphere by plane. Theorem of plane passing through the centre of a sphere and on the circumsferences of the large circle.

2. Pythagorus's theorem.

3. Problem or practical task.

SAMPLE TICKETS ON PHYSICS

Ticket No. 14

1. Transistors. Dependence of their resistence on temperature and light. Explanation of conductivity of transistors. Their application in technology.

2. Uniform circular movement of a body. Centripetal force. Phenomenon of weightlessness.

3. Problem involving the formula of the lens with account of the measurements of an object and its image.

Ticket No. 25

1. Inter-relation between mass and energy. Emission of energy in nuclear fission. Thermo-nuclear reaction. Peaceful uses of atomic energy

2. Magnetic properties of substances.

3. Problem on uniform variable movement along inclined plane with account of friction forces.

SAMPLE TICKETS ON CHEMISTRY

Ticket No. 1

1. Oxides, their classification and chemical properties.

2. Applications of acetylene. Properties of acetylene on which its uses are based.

3. Problem on calculation. Calculate the end-product of a reaction in percentage of the theoretically possible amount given the data on the quantity of the initial substances and the quantity of the end-product.

Ticket No. 14

1. Theory of structure of organic compounds (give examples); its significance for dialectical materialistic understanding of nature, evolution of science and production.

2. Uses of compounds which contain calcium in the economy. Properties of calcium containing compounds on which their uses are based.

3. Experiment: Prepare and collect a gaseous substance; prove experimentally the presence of given gas.

Printed at Rajendra Printers, Ram Nagar, New Delhi-55.

Committee on Examinations

Central Advisory Board of Education
Ministry of Education and Youth Services
India

Views and Opinions

National Council of Educational Research and Training
New Delhi 16

December 1970

NOTE: This Appendix contains the following material:

The above documents are being reproduced to give an indlication of some typical views and opinions.

MEMBER-SECRETARY

I. LIST OF DOCUMENTS

1. Letter from Shri Ram Parkash, Principal, National College, Sirsa (District Hissar), to Professor V.K.R.V. Rao, Minister for Education and Youth Services, Government of India.
2. Letter from Shri K.L. Joshi, Vice-Chancellor, University of Indore, together with the University Examination Reform Committee's Report, addressed to Shri J.P. Naik, Adviser, Ministry of Education and Youth Services, Government of India.
3. Letter from Professor G. Agarwal, Assistant Professor of Mathematics, Kashi Naresh Postgraduate College, Gyanpur (Varanasi), to Professor V.K.R.V. Rao, Minister for Education and Youth Services, Government of India.
4. Letter from Shri Tulsi Ram Shoundlia, Assistant Teacher, Ram Bilas Vidyalaya, Bairmon, Hazaribagh, to Professor V.K.R.V. Rao, Minister for Education and Youth Services, Government of India.
5. Letter from Shri Harbhai Trivedi, Pro-Vice-Chancellor, Saurashtra University, Bhavnagar, to Professor V.K.R.V. Rao, Minister for Education and Youth Services, Government of India.
6. Letter from Shri Sham Lal, 104, Rishi Nagar, Shakurbasti, Delhi, to Professor V.K.R.V. Rao, Minister for Education and Youth Services, Government of India.
7. Letter from Professor T.C.N. Singh, Umesh Research Laboratory, Roop Mahal, Mangalore-1, to Professor V.K.R.V. Rao, Minister for Education and Youth Services, Government of India.
8. Minutes of the 5th Meeting of the Consultative Committee of Parliament for the Ministry of Education and Youth Services, held on 16th February, 1970.

9. Note on the work done in the field of Examination Reform at the NCERT by Dr. R.G. Misra, Field Adviser, NCERT.

10. Note on Public Examinations by Professor S.V.C. Aiya, Director, NCERT.

11. Note on Student Unrest and Examinations by the Ministry of Education and Youth Services.

12. Suggestion by Dr. S. Misra, Vice-Chanceller, Utkal University, Bhubaneswar, at the CABE Meeting held on 2nd/3rd May, 1970.

13. Minutes of the Central Advisory Board of Education Meeting held on 2nd|3rd May, 1970.

14. Minutes of the Meeting of the Chairmen and Secretaries of Boards of Secondary Education held on 22nd and 23rd June, 1970.

15. Letter from Dr. G. Rudrayyachowdari, Vice-Principal and Head of the Department of History, Ramachandrapuram, East Godavari District, Andhra Pradesh, to Professor V.K.R.V. Rao, Minister for Education and Youth Services, Government of India.

16. Letter from Shri M. Padmanabhan Nair, Professor of English, S. N. College, Cannanore, forwarded by the Deputy Educational Adviser, Ministry of Education and Youth Services.

17. Letter from Mr. Mrinmoy Bhattacharyya, General Secretary, West Bengal College and University Teachers' Association, Calcutta, to Professor V.K.R.V. Rao, Union Minister for Education and Youth Services.

18. A paper cutting from *The Hindustan Times* by Mr. S.G. Mampilli, 2-G Ramnagar, New Delhi-55 sent by Shri J.P. Naik, Adviser, Ministry of Education and Youth Services.

19. Access to books in Examinations—Reported statement of Dr. V.K.R.V. Rao, Union Minister for Education and Youth Services, in the fortnightly *The States,* Vol. I, No. 15 of May 30, 1970.

20. Clipping from *Patriot* of September 24, 1970, on Examination System.

II. ABSTRACT OF THE SPEECH OF PROFESSOR V.K.R.V. RAO

1. There are several Committees set up by the Central Advisory Board of Education to deal with different problems. This Committee pertaining to Examinations is, I consider, the most important. As per plans, I should like this Committee to hold meetings and complete its work before the end of November, 1970, as I propose to call a meeting of the Central Advisory Board of Education in January, 1971. I should like to be informed about the last meeting of this Committee as I propose to attend the same. The other meetings would be called by Shri P.V. Narasimha Rao, the Vice-Chairman of this Committee, and you are at liberty to plan your meetings in consultation with him.

2. Our examinations have become extremely important and have now attracted public attention. They are also posing law and order problems and students are now known to indulge in extensive copying and other malpractices. There are problems of providing protection to invigilators. With the large number of students to be handled in public examinations, the standards appear to have collapsed and the marks, ranks and other features of public examinations appear to have lost most of their significance. The lack of standards arises from several factors and the marking varies widely from subject to subject. In some subjects, the general level of marking could be low while it could be extremely high in certain others. The results of examinations, however varied the examination may be, were formerly accepted by the students, the teachers and the public alike. There used to be some grumbling but there was nothing more than that. Today, the large majority of the public including the students do not believe in the justice part of our examinations. Several serious facts have come to my own notice. I saw in the papers that the Indore University is going to remain content with condoning the students for copying with a fine of Rs. 50 only. This was an offence for which rustication for some years was the minimum punishment in the past. There is a considerable variation in the marking and in the standards from one university to another. In this situation, it is most appropriate for us to ask the question which others ask also, "What is wrong with our public examinations ?"

3. The concept of lumping of three years of study into an examination in one year is not correct. The American semester system is one possible answer. Some academic people have introduced such a semester system but they have copied the form and not the substance of it. What is required is alteration of the frequency of examinations in a properly planned manner and giving a credit to the work done by the students in the institutions. Further, the nature of the examinations has also to be considered. Firstly, the intelligence of a student has to be tested through examinations. Secondly, the variations in marking have to be reduced to the minimum. Objective tests reduce variations in marking and are indicative very largely of the information content of the student's mind. Essay type of questions test the boy's ability in a different way. Similarly, there could be problem-oriented questions. What is wanted is a combination of all such approaches with the overriding condition that the boy who knows his subject should be able to pass.

4. So far as marking is concerned, each question could be marked but the assessment of the paper on the basis of the total marks should be reduced to a form of grading. While assigning the different grades, the principle of moderation could play an important part. Thereafter, taking the grades in the different subjects into account, an over-all grading could be made of the performance of a student in the examination as a whole. For this purpose, a suitable formula has to be evolved.

5. What is really most urgent is to give less and less importance to the final examination and give more and more weightage to the class work. How this is to be done is a problem to be examined by itself. The essays written by the student, the record books of the laboratories, etc., could constitute one part of the internal assessment for class work. In addition, there could be a number of tests conducted by the institution and the marks obtained therein could represent another part of internal assessment. But, when a certificate is issued by a board or a university, the grade obtained by a candidate both in the internal assessment and the external assessment should be furnished. This is the only way to get internal assessment into a more rational form. When teachers will find that there are wide variations in the grading between the internal assessment and the external assessment, they would be tempted automatically to correct themselves. Further, such a marks card or certificate would be an eye-opener to the prospective employers.

6. Regarding admissions to professional institutions or other seats of higher learning, it should be possible to call people for a written test on the basis of their grading by the Board/University. Thus, first-class students only need be called for such a test. This would imply giving credit to the assessment of the University/ Board. Thereafter, the results of the test should be the sole criterion for admission.

7. We should restrict ourselves to consider examinations up to the first degree level only. In all such cases, large numbers of students are involved. Hence, objective type of testing should become a very essential feature of all such examinations. Where students are required to write 'yes' or 'no', a third type of answer should also be encouraged, viz., 'I don't know'. In addition, every examination should have one essay type of paper.

8. If question-papers are suitably set, it should be possible to permit students to use books in the examination halls. Further, depending on the question-paper, it may be possible even to do away with invigilation. But these are all interrelated problems and should be examined in a composite way.

9. We should also think of giving weightage to extra-curricular activities.

III. STATEMENT OF THE MINISTER OF STATE FOR EDUCATION, BIHAR

Examination Reforms

1. The examination system and various problems arising out of it cannot be discussed without taking entire education system into consideration. Any change in the system and pattern of examination, or any reform in examination will bring in its way a revolutionary change in the system, pattern and syllabus of education.

2. The malpractices adopted in examination and recourse to violence are agitating the minds of the considerate and intelligentsia of the country. They view with great concern the doom of the sanctity and purpose of examination. The malady is very deep and needs radical cure.

3. Examination now remains a matter of manoeuvring in collaboration with the invigilators, examiners and examinees. It has become a fun. The method of adopting unfair means in the shape

of copying from the materials supplied from outside and dictating the answers by loudspeaker and by the invigilators themselves in the examination halls is now out-moded. Nothing is done in a secret and submerged way. The students get question-papers and examination books beforehand, and prepare the answer with the help of teachers outside the examination hall. This is the climax. The invigilators and teachers commit all the malpractices to get better results for their wards.

4. Examination should not be conducted only at the close of the period of study but it should be a continuous process. Oral test should form major part of the examination. Paper-setters, moderators, question packing, these should be planned in such a way that there should not be leakage of question.

5. The methods adopted in competitive examination should be adopted in general examinations. Protection of the invigilators and honesty and integrity of the teachers can play very effective part in controlling the malpractices in the examination. Examiners who examine answer books should rise to the call of the nation and curb the rampant tendency of procuring marks by *pairvi*. The following suggestions, if implemented, will fetch better results:

(1) Universities should be prepared to make experimentations in examination system. The present examination system is anachronistic and out-moded.

(2) The university teachers should adopt new and improved techniques of evaluation (quiz, multiple choice question, homes essays, etc.).

(3) A programme of seminars, discussions, workshops should be organised for the postgraduate students.

(4) Grading and classification of examination results should be done on a relative rather than on an absolute basis in a 6-point scale: 'A to F. Grade 'A' would mean that the student is in the top 20 per cent of those who have been successful at the examination.

(5) Payment of remuneration to examiners should be abolished. Evaluation should be treated as an integral part of teaching.

(6) Rigid and set syllabuses should be discouraged as far as possible. External examination based on them should be done away with. What is needed is a system of

internal and continuous evaluation by those who teach the courses.

(7) Before any effective examination reform is introduced, measures for reorganisation of the courses of study have to be taken. Semester system should be introduced at the earliest. The courses accordingly have to be framed (40 lectures per course per semester seems to be a workable proposition). The system would provide semester-wise examinations under which a student failing in a particular course could either repeat the course in the next semester or take another course in its place. It also gives the student a high degree of flexibility in choosing courses from various disciplines in accordance with his inclination and capacity. A student may be assigned to an adviser who would help him to work out the academic programme for him.

(8) The academic session of the university normally should consist of two somesters with a short vacation between them. The first semester from 24th July to 25th November. Examination from 27th November to 15th December. The second semester from 5th January to 30th April. Examination from 2nd May to 15th May. 15th May to 23rd July—Summer vacation. Classes should not be held on Saturdays and Sundays.

(9) Every semester course should carry a number of credits on one-hour-one-credit basis. B.A. Hons. should be a 3-credit course. At the M.A. level 3, 4, 5 credit courses be evolved. In order to earn credits students will be required to pass practical or sessional work (if prescribed for the course) as well as written examination or term paper held at the end of the semester.

(10) Three or 4 credit courses may carry 100 marks, 2 credit courses 50 marks.

(11) Every student should be assigned an adviser appointed by the Department of Studies concerned with his main subject. Compulsory and subsidiary subjects are to be selected by the student with the approval of his adviser. Course selected by the student should be entered on a course card maintained by the adviser. On the course

card should be recorded credits and marks obtained by the student.

(12) For B.A. and B.Sc. (Hons.) Degree, a candidate shall have to pass in sessional work and semester examinations so as to accumulate 120 credits as under:

(a) Compulsory and general courses	..	24 credits
(b) Main or major subject	..	48 credits
(c) Subsidiary or major subject	..	48 credits

For M.A./M.Sc./M.Com. examinations the number of credits should not exceed 30 (24 major, 6 minor) *plus* a Master's thesis and viva-voce examination.

(13) To pass in a course and obtain the credits a candidate must at least get an average of 'C' for B.A., B.Sc., (Pass & Hons.) and an average of 'B' for postgraduate degrees. The traditional grading may also be retained and students may opt for either of the two (60% and above—1st class, 50—59—2nd class, 40—49—3rd class).

(14) Paper-setting needs careful consideration. It would be useful to have a large number of short answer type questions rather than a few other kinds of question. The question should be specific so that the student is not left to guess what is in the mind of the paper-setter. The paper-setter must be asked to prepare a tentative outline of answers to the questons set by him together with detailed instructions regarding marking and distribution of marks or grade.

(15) Detailed reports on the performance of students must be discussed in the Board of Examiners.

(16) No examiner be allowed to evaluate more than 200 answer books.

(17) The practices of giving grace marks, 'Board-case' answer books must be stopped immediately.

(18) The dates of the examination must form a part of the University calendar.

N. P. SINHA
Minister of State for Education, Bihar

IV. VIEWS OF OFFICERS OF JAMMU AND KASHMIR

Minutes of the discussion of the Committee on Examinations with important persons connected with education in Srinagar

The Committee met the following persons at 3 P.M. on 27th August, 1970:

1. Shri Ghulam Mohi-ud-Din
   Education Secretary
2. Shri Ghulam Rasool Azad,
   Director of Education
3. Mrs. S. Z. Ahmed
   Joint Director, Women's Education
4. Shri Abdul Aziz
   Registrar, Kashmir University
5. Shri Ghulam Mohammad
   Controller of Examinations
6. Shri J.N. Dhar
   O.S.D. (Education Secretariat)
7. Shri R. L. Bargotra
   Joint Secretary
   Board of Secondary Education
8. Shri G. N. Shaiq
   Headquarter Assistant with the Director of Education.

Shri P. V. Narasimha Rao, Education Minister, Andhra Pradesh and Vice-Chairman of the Committee on Examinations, presided.

At the outset, the Chairman gave a brief introduction to the work the Committee was entrusted with and requested the Secretary to elaborate on the details of the problems the Committee had to tackle. After this was done, there was a general discussion in which everybody actively participated. The representatives from Kashmir pointed out that the malpractices in Kashmir were not very different from those in other parts of India. There were leakages of question-papers. Cases of copying had been reported. During the examination, loud-speakers have been used to dictate answers. It had also been observed that knives, etc., have been brought by some

candidates into examination halls. The external influences on the conduct of the examinations were enormous. There were legal difficulties in declaring the examination centre as a prohibited area and, probably, what was necessary was some form of legislation. In one case in which copying was reported and a student was punished, he went to the High Court and in the arguments alleged that those concerned demanded a bribe from him and so on. It has generally been found difficult to get honest, good and competent men for working as supervisors. Most of such people refused the offer. Apart from malpractices in written examinations, there were also malpractices in practical examinations. Since it was found that candidates tried to put pressure on examiners, a coding system for re-numbering candidates' answer-scripts was introduced. When this was done, the malpractices shifted to the examination hall. Parents, friends and all did not spare any efforts to assist the prospective candidate in all sorts of ways. It will thus be seen that when malpractices are plugged in at one end, they began to appear at the other. Their experience showed that internal assessments were not very satisfactory. In such assessments, many students got the first class.

In order to overcome the influence on examiners and malpractices after the examination, spot evaluation had been introduced. In this method, examiners are called to one centre and answer books brought to that centre. No examiner knows which answer scripts he would get for evaluating. A further improvement in this system was tried by making each examiner examine one question in the candidate answer-scripts.

The Committee after discussion thanked the representatives from Srinagar for the free and frank way in which they had discussed their problems. The meeting terminated with a vote of thanks to the Chair.

V. PROCEEDINGS OF A TEACHER-STUDENT SEMINAR

Fifty-two students and 10 university teachers participated in the above Seminar, representing seven colleges of Mangalore. Shri K.J. Antony, M.A. of St. Aloysius College, Mangalore, welcomed the participants on behalf of the College Planning Forum. Miss Annie Pinto of St. Annes Training College, Mangalore, inaugurated. Shri B. Bhavani Rao, Coordinator, Extension Services of Secondary Education, who presided, highlighted the problems of assessing the

students; he gave some general hints for the group discussion. The participants then formed into six groups. The group discussion which lasted for about two hours was based on a working paper prepared by Shri M. Raghavendra Prabhu, M.A., Lecturer, St. Aloysius College. It was mainly based on 15 out of the 23 recommendations contained in "Report of the Committee on the Indian Examinations Reform Project", prepared under the Chairmanship of Shri V.K. Gokak. The working paper deplored that neither students are aware of the gravity of the problem, nor many university teachers are interested in the change. The paper outlined a concrete line of action. It was felt that without right type of agitation on the part of students and teachers, the senseless and humbug business of examinations would continue.

After the group discussions, the general observations of each group were read out and discussed collectively under the presidentship of Shri B. Bhavani Rao. Shri Richard Crasta, Secretary, proposed a vote of thanks.

It was unanimously felt that the present system of examinations is highly defective, and many of the Gokak Committee's recommendations must be implemented as early as possible.

The following specific demands were made by different groups:

(1) Periodical tests, oral or written, without prior notice, at least once in a fortnight, should be held, and marks obtained in these should go into a Cumulative Record. This should form the basis for internal assessment.

(2) The various tests administered by college teachers in the course of a year as well as the rest of the work like participation in seminars, discussions and tutorials and home work like tutorial exercises and term-papers should be credited, subject to supervision by university authorities.

(3) The assessment of essay type answers should be systematically devised in terms of a scoring scheme detailed by the moderators. Each script should be assessed by two examiners and the average of the two scores taken as a measure of the student's achievement.

(4) A student examinee has, at present, no right of appeal even if he feels that he has done better at a public examination than what is reflected in his results. Our

examinations do not have the kind of reliability that ought to justify such a procedure. The universrsity authorities should get the scripts of such a student appplicant, on payment of fees, re-assessed by two other examiners. The average of the two scores should be regarded as the proper evaluation of such a performance. The university authorities should consider such appeals in the light of the students' internal assessment as the Cumulative Records show.

(5) There should be an evaluation unit in Mysore Uniiversity. Besides doing the routine work of test adminisstration, scoring and publication and analysis of resiults, such a unit will also be able to attend to test develllopment, statistical analysis and research and evaluattion problems. A unit of this kind usually consists of a diirector of testing, a psychometrician and some clerical and statistical staff. A student representative should have a place in this unit.

(6) The question-paper must have three parts; first, essay type; second, short note type; third, objective type.

(7) The questions should be simple, clear, and precise. The evaluator must be given model answers prepared by a board of editors.

(8) Necessary follow-up action should be taken by students and teachers jointly, as the situation may demand, from time to time, if in the normal course the Mysore Uniwersity does not heed to the above demands.

VI. DR. BLOOM'S OBSERVATIONS*

"Personally, I do not believe that students can learn of complex university subject without devoting time to it. University learning is a full-time activity and should, in my view, occupy as much of the students' time as a regular occupation 40—50 hours per week. Less time than that must mean that the work is not of university standard or the student is gaining only a superficial understanding of the subject.

**Evaluation in Higher Education,* University Grants Commission, New Delhi, 1961, pp. 12-14.

"While I have been primarily concerned about the complexity of the learning and the work required, it seems to me that some of the disciplinary problems in Indian universities must arise from the sheer amount of time available to the student for 'non-intellectual pursuits'. On a sheer probability basis the student who spends only 20 hours a week in intellectual activity is going to get into more 'non-intellectual' activity than the student who spends 40 hours a week in intellectual activity. However, this should not be interpreted as a plea for mere filling of time for disciplinary reasons. The point is that time is required for significant educational development in the student.

"The pattern of preparation for examinations, as reported by students, was typically that the student plans to devote major time to study for 3 or 4 months. However, many students found it difficult to get down to serious study at the time they had originally planned and after some tentative starts found themselves devoting about six weeks to intensive preparation for the examinations. During this intensive period the student might spend 5 to 10 hours a day in study. Although most of the students had prepared a timetable for their examination preparation they usually altered their table in a downward direction. Most students found themselves with a tremendous amount of material to be covered in less time than they had originally planned.

"At this point the students are faced with the necessity of 'cutting corners' and must find some method which will enable them to do less than full preparation. Students typically claimed that they carefully studied one half to three-fourths of the subject. They gave most careful attention to those topics emphasized by the lecturers or those questions which occurred repeatedly in the examination papers over a 5 to 10 years period. They gave relatively little attention to those topics or questions which had occurred in the previous years' question papers. Some mention was made of pamphlets available in the market but most of the students expressed the view that these are of little real value.

"In this intensive period of study the students attempt to learn topic. Only rarely does the student find it possible to study the interrelationships among the ideas and topics, the relationship between the ideas for new problems or current happenings in the field. Study is for the student a review of what has been presented in the lectures or textbooks, not a relating and reorganizing of the whole subject.

"The students were eager to cite a large number of examples of students who studied regularly but did poorly in examinations. They have rationalized that the only effective method of preparation is the intensive cramming of subject matter as near examination time as practicable. They are convinced that most regular study procedures may be useful for understanding the subject but are not appropriate to examination passing. Thus, the students do make distinctions between mastery of a subject and mastery of examinations—one is separable from the other. Since examinations are the major bases on which the rewards of the university and ultimately the prizes of the society are awarded, they believe the person with good sense must concentrate on the examinations. In spite of this, the students view the examinations as coercive instruments which require them to learn much subject matter detail, not because of their significance in the understanding or mastery of the subject, but because these are likely to be stressed in the examinations.

"The taking of the examinations is viewed as a dreaded experience, with great anxiety and emotional tension being developed by the majority of students. Luck and chance are regarded as powerful factors in determining the questions asked and the marks received.

"Part of this arises from the fact that the examination is the sole basis for assigning marks and all rests on the single examination performance. Part of this anxiety stems from the lack of experience with examinations as a regular and important part of their learning activity. Part arises also from their feeling that they never know exactly where they stand or what their level of competence or mastery is at various times during the programme of study. Repeatedly, the students interviewed stressed their inability to determine how well they were performing in the examinations until the final marks were received. Modern learning theory stresses the need for evidence of progress being available to the student as a basis for motivation and as a basis for the student to take appropriate steps to maintain or improve his mastery.

"Some students were eager to inform me of the methods used when they do not know the answer to a question in an examination. Some invented quotations and ascribed them to noted men in the field, because they were sure the name would carry a ring of authority and no examiner could be certain, without thorough research, that the authority cited had not said or written it. Others have developed techniques for writing vaguely so that some credit might

be given by a puzzled examiner. Still others said they never omitted a required question; they would write something that might be seen as relevant. The point to be made is not whether the techniques actually work or not, it is that students think in terms of outwriting an opponent, the examiner.

"All these observations may be summarized in very brief form. An examination system has been created which has a powerful effect on all the students and teachers who come in contact with it. It has reduced learning to a part-time activity, teaching to the coverage of particular material, and education to a relatively drab and meaningless activity. This same system can, if improved, restore learning and teaching to the creative and powerful force it can and must be in the India that is coming to be."

PRINTED AT RAJENDRA PRINTERS, RAM NAGAR, NEW DELHI-55.

Committee on Examinations

Central Advisory Board of Education
Ministry of Education and Youth Services
India

Views on Public Examination Problems

National Council of Educational Research and Training
New Delhi 16
December 1970

NOTE: *This Appendix contains a selection of views expressed on several aspects of Public Examinations*

PRINTED AT RAJENDRA PRINTERS, RAM NAGAR, NEW DELHI-55.

I. THE PROBLEM OF PUBLIC EXAMINATIONS[1]

SIR DAVID ANDERSON

"The problem of examinations is giving rise these days to much speculation, concern, and even alarm amongst students, parents, employers, and the public generally; and not least amongst those responsible for setting and running the examinations.

"Examinations and their results are no longer taken for granted: in some quarters they have become suspect, though much of this suspicion may be unwarranted. Nevertheless, our more accurate knowledge of the complexity of the educational process and the human mind justifiably shakes the confidence previously felt in examination results.

"We are now asking ourselves what it is that we are trying to measure? How accurately are we able to carry out the measurement? What is the relevance and correlation between the results of this measurement and the future academic and professional performance of the person concerned? These are the questions to which we have become alerted, and we cannot yet answer them to our satisfaction.

"In addition to all this, there is the interconnected though totally different problem of the sheer magnitude of the task of organising the whole examination procedure for the numbers now involved.

"All these problems require serious consideration and discussion."

II. RELIABILITY OF ESSAY TYPE EXAMINATION RESULTS[2]

"The early investigations on examinations dealt mainly with the reliability of examination results. Hartog and Rhodes in their

---

[1]Conference on Examinations, April 1968, Scottish Certificate of Education Examination Board, page 4.

[2]Conference on Examinations, April 1968, Scottish Certificate of Education Examination Board, pp. 6-7.

classical study 'An Examination of Examinations' revealed the weakness of assessment by the essay type examination: irrespective of the subject, markers gave widely different assessments to the same scripts and could not guarantee to award anything approaching the same marks to the same scripts after the lapse of a period of time. In one investigation, 14 examiners awarding a pass/fail verdict to 15 history scripts after an interval of about one year gave a different verdict in 92 cases out of the 210 on the second occasion. These experiments have been repeated over and over again. For example, I demonstrated this by taking a 12 year old's essay from our transfer tests in Fife and sending it round a large number of teachers asking them to mark it on the scale A to E; this essay received every mark from A to E. A similar investigation with a leaving certificate essay did not however have a wide range of marking. Teachers with leaving certificate experience awarded it nearly the same mark. Quite clearly the teachers at this stage of schooling could assess fairly accurately what mark an essay of that nature would likely receive at the leaving certificate stage. Whether it was a good assessment of the work done is difficult to state because reliability does not ensure validity: or to put it another way, the *markers may be consistently wrong*".

III. AN ANALYSIS OF AN EXAMINATION PAPER[1]

"A Moray House research worker who is studying ability in Chemistry analysed the Chemistry papers of Higher Science from 1949 to 1962. Adopting a modified version of Bloom's Taxonomy, he lists the four main objectives in the teaching of chemistry in schools as (a) information, (b) application of principles, (c) quantitative application of principles (calculation), and (d) scientific method. Each question was analysed and a percentage of the total number of marks in each question allocated to the various categories. His analysis showed that the allocation of marks was distributed as follows:

Category	
a	66%
b	11%
c	14%
d	9%

[1]Conference on Examinations, April 1968, Scottish Certificate of Education Examination Board, page 8.

While it can be admitted that his classification does not provide an accurate assessment of the papers, it does reveal that a preponderance of the questions demand from the pupils knowledge and information. Clearly, this is imposing a wrong emphasis upon the teaching of chemistry, and illustrates the failure of the examiners and curriculum-makers to work closely together."

IV. SIGNIFICANCE OF RESULTS OF PUBLIC EXAMINATIONS[1]

R.K. Mathur while studying the effect of uncertainty in scoring upon the degree of misclassification of students showed that any classification attempted on the basis of scores whose reliability is less than 0.9, under certain assumptions, leads to misclassification of more than 23% of the students and so may be sufficiently misleading. Reliability co-efficient of 0.63 as obtained for School Final Mathematics Examination of West Bengal can lead to a misclassification of about 44% of students. Of these, 23% stand the chance of being placed in a group higher than they truly belong to. It follows, therefore, that excessive deference paid to the published examination results is hardly justified. Published list of 'first class' students contains many 'second class' students and possibly a few of even a lower rank. Conversely, many 'first class' students are there in the 'second class' list.

V. EXAMINING PROJECT WORK–PHYSICS[2]

Pupils should develop the ability to:

(i) extract, interpret and classify information (use of libraries, journals, graphs, simple statistics, estimations of experimental uncertainties, etc.);

(ii) plan appropriate experiments; devise and construct and/or handle apparatus; tackle the practical problem of measuring some physical quality;

(iii) present a lucid, coherent report on a piece of their own individual experimental (Project) work.

---

[1]R.K. Mathur, Effectiveness of Board and University Examinations in India; Bulletin of the Institute of Public Administration, Patna University, 1962, p. 46.

[2]Certificate of Sixth Year Studies, Scottish Certificate of Education Examination Board pp, 55-57.

The Examination

The examination will consist of two parts, each of which will be subject to assessment by the Board:

(i) A Report on a project or projects founded on experimental work conducted by the pupil during the session.

(ii) A written examination based on the syllabus.

Equal weight in assessment will be given to the two parts. The project Report will require to be submitted to the External Assessor appointed by the Board by 1st April, 1971. To help in the assessment of the Reports schools will be required to provide an estimated mark in respect of each candidate's project work. Candidates may be required to discuss their projects with a visiting assessor. Arrangements for each visit will be made with the schools concerned (see paragraph 20).

The presentation requirement is a pass on the Higher grade in Physics (I and II).

Units

SI Units must be used.

Project Work

Choosing a Project

The Board appreciates that this kind of work presents difficulties and it is hoped that teachers in the schools will take every opportunity of consulting the Board when such difficulties are encountered. A teacher with a large number of pupils in his charge may have to confine the project work to one branch of Physics. The pupils can then be given common instruction on the theoretical principles involved before engaging on their projects. A certain amount of team work can be encouraged in pursuing the common aim, each member of the team being responsible for one part of the assignment. Each member of the team would, of course, be required to prepare a Report on the particular part of the work he had done. However, the greatest possible latitude will be allowed to the teacher. For example, there is no insistence on a policy on one project per pupil; it may be more convenient for the pupil to be engaged in a small number of projects. Where the number of pupils is small some teachers may prefer to depart from any formal teaching and to direct the pupil to a course of reading from which projects may arise in various fields of Physics.

Experiments of historical importance could be considered and repeated using modern techniques which could give improved results.

A project must involve experimental work and must be something new for the student (it need not be a piece of original research). The best projects usually involved identification of some measurable quantity, controlling variables and obtaining numerical results which are then treated with some understanding of their errors. The weakest projects are those involving the building of some complicated device using a given set of instructions.

The Teacher's Role

It is the task of the teacher to advise against projects involving concepts or techniques likely to prove too difficult, expensive or time-consuming, and to give special help to students in difficulties. The amount of help should be limited to that which will suffice to keep the project going.

Experience has shown that the work of candidates benefits from an introduction to:

(a) the writing of a report (structure, use of graphs, making references, etc.) (see below);

(b) the planning of a project (reading, constructing or assembling, selection of apparatus);

(c) techniques of measurement and recording of data;

(d) treatment of errors (uncertainties), significant figures.

Notes on the Writing of Project Reports

Structure of Report

The structure of a report will vary with the length and subject matter of the report and the proposals given below are for general guidance only. These proposals are intended to illustrate an approach which would be acceptable, but for any particular report they would be subject to modification as required.

1. Cover and title.
2. Table of contents.
3. Lists of tables, graphs and illustrations.
4. Summary (one paragraph is usually sufficient, preferably written in the present tense).

5. Main body of report (in past tense, third person):
   (a) introduction;
   (b) apparatus and experimental procedure;
   (c) readings, measurements made.
6. Conclusion (s), interpretation of results.
7. Diagrams, tables and graphs.
8. Bibliography, references, acknowledgements.

It is to be noted that neither the chronological order of the work done on the projects nor the writing of the report need be the same as the order of presentation given above. The sequence of writing might well be:

tables, graphs; results; main body; diagrams; summary; title; contents; bibliography, etc.

Presentation of Report

1. The front cover should display the title of the report, the name of the author and the name of the school.
2. The table of contents should include page numbers.
3. Only one side of each sheet of paper should be used.
4. Diagrams, graphs and tables should be placed either all together at the end, or near the appropriate part of the text.
5. Diagrams, tables and graphs should be captioned and numbered. Appropriate references to them should be made throughout the report.
6. Pages should be numbered for ease of cross-reference.
7. The pages should be fastened together in some way, preferably along the left-hand edge and the use of a loose-leaf folder is recommended.
8. Bibliography, references to books and periodicals should be given in standard form.

It is recommended that references be given at the end of the report and indicated by numbers in the text.

Further considerations

1. The first requirement of any report is that it should be easy to read and understand. This implies an accurate title, a logical structure, adequate cross-references and a

clear statement regarding the conclusion (s) reached. Particular attention should be paid to the presentation of diagrams, tables and graphs.

2. Long passages of theoretical material are not required unless the material is original in some way. Otherwise, in most cases, the appropriate reference to a standard text will suffice.
3. Descriptions of apparatus should include the manufacturer's name and the type number where applicable. Diagrams or photographs are preferable to lengthy written descriptions.
4. If a project is carried out jointly by two or more students, each individual report must state clearly what part the writer played in the endeavour and must also give the name (s) of his colleague (s).
5. All measurements should be shown—either in tabular or graphical form.
6. Estimations or errors (uncertainties) in measurements and the accuracy of any final result must be included. Error bars should be drawn when plotting graphs.
7. Details of calculation such as logarithms should be included. The formula or method and the result only should be stated.

VI. EXAMINING PROJECT WORK—CHEMISTRY[1]

Objectives of Project Work

The aim of project work in chemistry is the development of:

(i) skill in devising an appropriate scheme for studying a problem in Chemistry;

(ii) skill in handling, classifying, interpreting and presenting information (including graphs and quantitative results);

(iii) ability to apply previously acquired understanding to new situations and to show creative thought;

(iv) resourcefulness on the part of the pupil with a corresponding lessening of dependence on the class teacher.

---

[1]Certificate of Sixth Year Studies, 1971, Scottish Certificate of Education Examination Board, pp. 17-18.

Selection of Subject for Project

A project should be something new for the student but need not be a piece of original research. It should normally involve experimental work but need not necessarily do so.

Local industries, universities and colleges may be willing to help in suggesting topics and such assistance should be used wherever possible.

The teacher should not at any time hesitate to advise a pupil to change the project if the original appears likely to be unproductive.

Where there is any doubt about the suitability of a proposed project the Board should be consulted.

Responsibility of Pupil and Teacher

The subject of the project should normally be arrived at as a result of discussion between pupil and teacher. The teacher should discourage a pupil from adopting a project involving concepts or techniques likely to prove too difficult, expensive or time-consuming. The teacher would be expected to take part in regular discussion with the pupil on the progress of project work. The first draft of the project report should be the sole responsibility of the pupil but the teacher may give advice regarding the production of a final draft.

Group projects may be adopted provided that each member is to play a specific part and submit a separate report.

The Report

The Report must be submitted to the External Assessor appointed by the Board by 1st May, 1971. It should include:

(a) a clear statement of the objectives of the study involved;

(b) an outline of the method of investigation and full details of the results obtained (including failures);

(c) a summary of the conclusions reached.

All sources of help should be acknowledged. The Report should amount to approximately 2,000 words and its presentation should be neat and attractive although final assessment will depend mainly on its content.

Assessment

50 marks will be awarded by the external assessor as follows:

Project Report (20 marks)

5 marks for general layout of the report with particular attention paid to diagrams, tabulation of data, etc.

5 marks for the presentation of the report which would include such points as adequate introduction, relevance of material to theme, background information, references, conclusion.

10 marks for the experimental aspects including points such as scientific content, assessment of problems, method of tackling, design of apparatus, technique, original thought, overcoming problems.

Oral Examination (20 marks)

5 marks for basic understanding.

5 marks for initiative, resourcefulness, originality, independence.

5 marks for clarity of expression.

5 marks for general estimate of the thesis including points such as an appreciation of errors, future possibility of the work.

Course Work (10 marks)

5 marks for the record of the work based on points such as presentation, completeness of reports, range of work covered.

5 marks for the quality of the work based on experimental results obtained, initiative shown, development of one particular experimental line of enquiry (which could be a subject of discussion with the candidate), etc.

General laboratory notebooks for the session's work should be available for inspection at the oral examination.

Schools will be asked to submit along with their candidates' project reports an estimate mark for each candidate based on project work and given in terms of a five-point scale.

General

It is recommended that project work should account for approximately one-quarter of the time available for the teaching of sixth

year Chemistry and this time may be allocated in block or s spread through the year. A record of the work is to be kept in a rough laboratory notebook which is to be available for examination if required.

VII. RESERVATIONS ON INTERNAL ASSESSMENT

CUT-PRICE "O" LEVELS[1]

As if standards of literacy, teaching and examinations are not low enough already, a large group of schools in the Norrth of England has agreed to a preposterous new scheme proposed by the examining board of certain northern universities. A new cut-price, easy-to-acquire "O" level in English will be available on the basis not of examinations but through teacher-assessment, with onlly the faintest degree of external control. Both the universities and the schools concerned should be ashamed of themselves. The objections to such a scheme are intense. It substitutes for the impartial test of external examinations a system in which favouritism must run rife. It does so, moreover, at a time when the capacity of teachers to assess anything seems to be declining. Proper examinations have always been the clever or industrious child's safeguard against the teacher who lacks impartiality or good personal or professional judgment.

A ludicrous trial of the new scheme has, in fact, already taken place. Between 91 and 94 per cent of pupils gained passes on the no-examination basis. Any fool could have foreseen this sort of outcome. Teachers would naturally incline to pass most of their pupils. For one thing every teacher, unlike the remote examiner, is easily exposed to the potential ire of parents, headmasters and even pupils themselves. For another, all teachers are instinctively keen to show that pupils under their tuition do well. The staggeringly naive comment of the board is that this high pass level shows the success of the scheme. This is sheer provocation. The Minister of Education, who has ultimate responsibility for the Schools Council which launched this nonsense initially, must intervene. Lower standards are clearly being regarded as the criterion of success. If the scheme is allowed in English, its perpetrators will want to extend it to other subjects at other levels. It is a scheme to abolish examinations by stealth and it must be stopped.

---

[1]Editorial in the *Daily Telegraph*, London, of 18th September 1970.

Committee on Examinations

Central Advisory Board of Education
Ministry of Education and Youth Services
India

History of Examination Reform in India

H. S. SINGHA
Reader, National Institute of Education

National Council of Educational Research and Training
New Delhi 16

HISTORY OF EXAMINATION REFORM IN INDIA

1. Examinations have been proverbially described as the bane of our educational system. Successive commissions and committees on education have emphasised the need for examination reform and suggested specific measures towards this end. The University Education Commission (1948) went so far as to say: "We are convinced that if we are to suggest any single reform in university educaation, it would be that of examinations." (p. 328.) The Mudaliar Commission on Secondary Education (1952-53) also recognised the lacck of validity, reliability and objectivity in examinations. Much was not, however, done to remove the defects of the examination system until 1958 when the erstwhile All-India Council for Secondary Educaation which had always recognised the importance of improving examinations as a means of improving the quality of education, set up the Central Examination Unit to organise programmes of examinaation reform at the secondary stage. With the establishment of the National Council of Educational Research and Training, the Central Examination Unit along with the All-India Council for Seccondary Education became its part and has, ever since, been worrking vigorously to refine and improve examinations. Efforts have been mainly concentrated at the stage of secondary education, althcough some work has also been taken up at other stages of education. The work has, in general, been appreciated. The Education Commission (1964-66) went on to put on record "....the activity that one now sees in this matter (examination reform) in the State Boards for Secondary Education is due largely to the Central Examinaation Reform Unit in the National Council of Educational Research and Training". (p. 291.) The Commission, in fact, recommended that a similar unit be also set up in the U.G.C. immediately.

2. To overcome the shortcomings of public examinationss as well as school evaluation, the Central Examination Unit located in the NCERT developed a comprehensive programme of examinaation reform to meet the educational, social and psychological pointss of view. It was aimed at (i) improvement of written, practical and oral examinations, (ii) introduction of internal assessment procedures on scientific lines, and (iii) bringing about consequenntial changes, as for example in curriculum and textbooks, etc. Chief proposals for the improvement of written examinations comprised: (i) improvement of questions, (ii) improvement of question-papers

to ensure reliability, validity and objectivity, (iii) improvement of scoring procedures, and (iv) improvement of the mechanics of examinations. The programme of examination reform was suitably phased out to ensure easy and effective implementation. In the first phase it was proposed to concentrate all the efforts on external examination, in the second phase it was proposed to cover internal assessment procedures and then finally to tackle the rest of the problems.

3. The above programme of examination reform had been developed through conferences, meetings, seminars and workshops conducted all over the country. A number of State level agencies collaborated in the development of this programme. The main among them are:

1. State Boards of Secondary Education.
2. State Departments of Education.
3. State Evaluation Units.
4. State Institutes of Education.
5. Teachers Colleges.
6. Extension Services Departments.

As State Boards of Secondary Education or Departments of Education are the main agencies for the conduct of external examination, the major portion of the work was naturally with these agencies. Other agencies mentioned above cooperated to make the programme a success. Most of the States and Union Territories have been covered so far. Some have already implemented the programme while others are in the process of doing so. The only States left are Jammu and Kashmir, Uttar Pradesh and Orissa. This is not because of any unwillingness on their part but only due to the paucity of personnel in the NCERT.

4. The work of examination reform in the States has, by and large, consisted of training paper-setters, examiners, resource persons, etc., and publication of literature on evaluation. In order to assist the States, the NCERT has also conducted a number of studies and investigations on examinations and has brought out periodical publications like the Examination Abstracts and the Evaluation Newsletter. A fairly big test pool has also been set up in the NCERT for the benefit of States. A summary of the major accomplishments of the NCERT in the field of examination reform at the secondary stage is given below for quick perusal:

A. *Personnel Trained*

1.	Paper-setters in different subjects ..	1,320
2.	Resource persons ..	850
3.	Training college lecturers ..	500
4.	Examiners for oral examination ..	100
5.	Examiners for practical examination in science subjects ..	525
6.	Teachers for internal assessment ..	200

B. *Literature Published*

1.	Brochures on evaluation ..	20
2.	Brochures on sample question papers ..	83
3.	Brochures on unit tests ..	61
4.	Reports of conferences and seminars ..	8
5.	Reports of paper setters workshops ..	48
6.	Reports of training college workshops ..	11
7.	Examination abstracts ..	7
8.	Evaluation newsletters ..	16

C. *Studies Completed*

1.	Studies related to external examination ..	22
2.	Studies related to school evaluation ..	8

D. *Test Pool*

1.	Test items in different subjects ..	11,000
2.	Unit tests in different subjects ..	700
3.	Question-papers and diagnostic tests ..	150

5. Besides he above-mentioned work done at the secondary stage, the NCERT also took up examination reform programme on an experimental basis at the elementary, university and teacher education stages in response to requests received from them. As a special case the Army Education Corps was also assisted in improving its examinations by training its officers through short-term training courses.

6. The National Council of Educational Research and Training has been the sole agency initiating and coordinating the work of examination reform at the school stage in the country. Proposals have recently come from some other countries asking for assistance in this work. The Government of Nepal have sought the help of the NCERT to get their personnel of the recently started Examination Reform Division trained in evaluation techniques.

PRINTED AT RAJENDRA PRINTERS, RAM NAGAR, NEW DELHI-55.

Committee on Examinations

Central Advisory Board of Education
Ministry of Education and Youth Services
India

Analysis of Replies to the Questionnaire

National Council of Educational Research and Training
New Delhi 16

December 1970

ANALYSIS OF REPLIES TO THE QUESTIONNAIRE

With the time available, there were limitations for eliciting public opinion. However, it was felt that a modest attempt in this direction is a very necessary element for the success of the deliberations of the Committee. Consequently, about two thousand copies of the questionnaire were circulated to selected groups of educationists. In some cases, some of these got together to discuss issues and send one consolidated reply. About 83 sets of replies were received till the end of November 1970. These were analysed and the results of the analysis are presented in this appendix.

The questions in the questionnaire are capable of being classified into a few broad categories. Such categorisation is furnished in Table 1. Table 2 gives the classification of the respondents on an occupational basis. In what follows, a summary of the analysis is furnished. While furnishing this summary, the main headings as given in Table 1 are used and the question numbers appropriate to the replies discussed are given wherever necessary.

1. *Public Examinations*

1.1 *Need*

(Q. 1)—About 30% of the respondents feel that public examinations are necessary, but with modifications. Over 50% of the respondents in addition to the above have stressed the need for public examination without further elaboration. About 12% of the respondents feel that there should be no public examinations.

1.2 *Frequency*

(Q. 2)—Over 55% have recommended two or more public examinations at the school stage. But, about 25% are in favour of only one such examination.

(Q. 52)—About 55% are *not* in favour of two public examinations in a year, while about 25% are positively in favour.

1.3 *Forms of Examination*

(Q. 3)—Over 80 per cent are of the view that oral questions,

observations, etc., should be included in addition to written examinations in the evaluation of students.

(Q. 75)—Over 64% feel that at least some of the question-papers in the higher examinations should be of the open-book type. Among those who have agreed to the suggestion, a quarter of them have given a note of caution.

1.4 *Scheduling of Examinations*

(Q. 41)—About 42% have agreed with the view that there should be an interval of six to eight weeks between the declaration of results of an examination and the last date for admission to a course for which this examination is a qualification.

(Q. 42)—About 59% are of the view that there should be a general all-India policy for conducting the annual examinations in February/March and declaring the results before the first of May.

(Q. 43)—For implementing a general all-India policy mentioned above, some suggestions were for the inclusion of education in the concurrent list while others recommended the exploration of the possibility of setting up inter-Board/inter-University organisations to realise the objective.

(Q. 60)—About 65% do not agree to the setting of two papers per day.

(Q. 61)—About 34% agree that public examinations should be completed within about a week, while about 30% say that it may take more than two weeks.

1.5 *Question Papers*

(Q. 59)—About 58% agree to the suggestion that there should be 5 to 8 question-papers only while about 15% have suggested 8 to 12 question-papers.

(Q. 64)—About 52% agree that there should be a very large number of objective type of questions for reducing the margin of error in public examinations, while 31% do not agree with this view. A few persons expressed the fear that the use of objective type of questions may itself give rise to malpractices.

(Q. 65)—About 49% agree to the distribution of questions in examination papers as suggested.

(Q. 66)—About 45% say that suitably trained persons are not available, while about 19% feel that they are available.

(Q. 67)—About 25% feel that two weeks are enough, about 20% feel that one week is enough and about 22% have suggested 3 to 8 weeks. There are other individual responses varying from 1 hour to 8 months.

(Q. 68)—About 61 of the respondents agree with the view that question-papers at all public examinations must be set by a board of paper-setters and finalised at a meeting of such a board.

(Q. 69)—About 73% agree to the suggestion that model answers should be furnished for each of the questions in a question paper by the board of paper-setters for all examinations up to the first degree level.

(Q. 72)—About 64% of the respondents agree that the design of the question-paper for an examination should be standardized in the same manner as the syllabus and should be made available to the teachers and the students alike.

(Q. 76)—About 24% say that competent persons to set questions to suit open book examinations are available while about 35% expressed a contrary view.

(Q. 77)—About 82% agree to the suggestion that there should be a scrutiny of the question papers by the relevant boards of studies.

1.6 *Valuation of Answer Scripts*

(Q. 36)—While about 24% say that centralised valuation of answer scripts exists in their States, about 55% say there is no such practice in their States.

(Q. 37)—While about 78% have given no response, about 16% have confirmed that the practice is successful.

(Q. 70)—This question has been misunderstood because the clarification that the question-paper would be furnished to the concerned teachers after it was administered to the candidates is not made very clear.

(Q. 71)—About 29% agree to the suggestion that the reports of teachers on question-papers as envisaged in Quesion 70 should be made available to board of moderators for issuing instructions regarding moderation while marking the scripts.

1.7 *Interpretation of Examination Scores and Grades*

(Q. 45)—Only 30% have responded to this question which pertains to the problem of ensuring uniformity in the results of

different groups when examinations for each group are conductted separately. The suggestions include moderation of papers and resullts, introduction of objective type of papers, a re-examination of :all first-divisioners, etc.

(Q. 46)—The need for normalization of Question 45 is consi-dered necessary by about 25%, while about 22% say it is not neccessary.

(Q. 47)—About 38% are in favour of assigning grades, while about 32% do not agree to the suggestion.

(Q. 48)—About 64% have not responded to this question on the fineness of the grading system. Those who have responded have suggested various scales, viz., 3, 5, 7, 8, 9, etc. A suggestion has also been made that the grading should be supplemented by giving actual marks above 69%.

(Q. 49)—While 36% are in favour of giving an over-all grade in an examination, 28% are not in favour of it.

(Q. 50)—About 46% feel that an over-all grade is not at :all necessary, while only 25% are in favour of it.

(Q. 51)—About 60% have agreed that it is wrong to declare the result of a student on the basis of single examination, while about 30% feel that there is nothing wrong in such a process.

(Q. 56)—About 29% are in favour of uniform rules for condonation by taking into account the good performance in certain subjects.

(Q. 57)—Only 28% have responded to this question. A variety of answers including the basing of condonation on the aggregate marks are furnished.

(Q. 58)—About 70% feel it is wrong to make a student waste an entire year because of a small deficiency of marks in a couple of subjects.

1.8 *Malpractices, and Law and Order Problems*

(a) *Malpractices in Examinations*:

(Q. 4)—As reported, attempts are made to get questions set in question-papers from paper setters, translators, press, centre superintendents and others. Quite often the servants employed in all these places are made use of. In addition, expected questions together with answers to them, etc., become available. Students generally

smuggle chits containing answers to expected questions, etc. There is also a tendency to purchase the supervisors and invigilators so that malpractices could be indulged in during the examination. The teachers who take private tuition often abet in such malpractices. In some cases, there are contracts guaranteeing to pass a student through foul means. Parents are guilty of extending patronage to corrupt teachers and examiners and encouraging malpractices by their wards. Stricter control in the examination process including careful selection of paper setters and the transmission of blank answer books could be useful. Decentralisation of large-scale examinations and granting autonomy to schools and colleges are good remedies.

(Q. 5)—About 73% have reported that copying from books, papers, chits and other material smuggled into the examination hall is the most common. Consultation with others, sending question papers outside and getting smuggled answer books back, impersonation, use of loud-speakers, forcible entry of outsiders, invigilators dictating answers are not uncommon. Teachers writing answers on black boards in examination halls or allowing outsiders to assist candidates or allowing exchange of answers books, etc., are also common.

(Q. 6)—About 32% have said that very rich examinees are very largely responsible for corrupting the administration.

(Q. 8)—About 88% have confirmed that there are malpractices after the examination. Candidates or their parents or their agents get the names of examiners, induce them to change marks or permit them to write answers in new answer-books, etc. The only remedy would be to raise the moral tone in our educational network. However, stricter control streamlining the transmission and return of answer books, collecting answer books at a centre and getting them examined by calling all the examiners are possible remedies.

(Q. 9)—About 90% agree with the view that the increase in malpractices in public examinations in recent years is largely due to the importance attached to marks for attainment to professional institutions and for employment.

(Q. 10)—About 75% hold the view that the administration concerned with the conduct of examinations is also responsible for the malpractices.

(Q. 11)—About 49% feel that malpractices are more in practical examinations than in written examinations.

(Q. 29)—No definite conclusion can be drawn about the response to this question which relates to the frequency of reports of leakage of question-papers.

(Q. 35)—About 57% are not in favour of decentralisation of examination. But they plead for higher standards of honesty aand integrity in the conduct of examinations. About 14% are in favour of decentralisation.

(Q. 83)—About 78% agree that malpractices have increassed during the last 10 years and given various causes for the same.

(b) *Law and Order Problems*:

(Q. 13)—About 53% have not responded. About 32% have said that law and order problems arise only partly out of malpractices.

(Q. 26)—About 24% agree with the view that the breakdown of law and order arises mainly in large-scale examinations. About 46% do not hold such a view.

(Q. 27)—About 55% have not responded to this question. But 15 individuals who have replied to the questionnaire have given specific incidents pertaining to the breakdown of law and order.

(Q. 28)—About 46% have not responded to this question. About 24% have claimed positive knowledge of cases of breakdown of law and order due to either defective question-papers or improper arrangements for the conduct of the examination.

1.9 *Internal Assessment, etc.*

(Q. 12)—About 73% feel that entire internal assessment without external moderation or checks and balances may prove farce. However, many have suggested internal assessment *cum* moderation, preferably external. Some have suggested the furnishing of results of both internal assessment and public examinations.

(Q. 38)—About 54% have agreed to the view that attention should be paid to extra-curricular activities and that it has gone down in the last two decades.

(Q. 39)—Some have suggested that extra-curricular activities should be viewed as a part of internal assessment and organised systematically giving more time to such activities and providing better facilities.

(Q. 40)—About 72% have agreed to the suggestion that some

credit for good performance in extra-curricular activities must be given in public examinations or, at least, the excellence of a student in such activities should come up for mention in the certificates issued by a Board or a University.

(Q. 53)—About 83% have expressed the view that internal assessment should be by the concerned teachers only.

(Q. 54)—About 62% have expressed the view that the results of internal assessment should be given along with the results of public examinations.

(Q. 55)—About 46% have said that the performance of a student in an internal assessment could form a basis for condoning deficiencies in public examinations.

(Q. 81)—About 38% have agreed with the view that the interest of teachers could be enhanced if they are made directly responsible for examining the students and declaring their results.

(Q. 82)—About 62% feel that the objectives of Question 81 can be realised by providing internal assessment results in the Board/University examination certificates.

(Q. 88)—About 68% feel that the results of internal assessments should be taken into account in declaring the results of public examination.

1.10 *Special Legislation*

(Q. 7)—About 60% feel that there is need for legislation to make certain offences connected with examinations cognizable. But a few of them are doubtful of the outcome as they feel the enforcement problem is difficult. Academically some feel that this should be resorted to only when other methods fail.

1.11 *Recruitment to Services and Admission to Professional Courses*

(Q. 21)—More than 60% agree with the suggestion that the State/Central Public Service Commissions should conduct tests and examinations for recruitment to the services at all levels.

(Q. 22)—About 68% have not responded to this question.

(Q. 23)—About 36% feel there will be no difficulty in arranging for tests, etc., for admission to professional institutions while 20% feel otherwise. The rest have not answered this question.

(Q. 24)—About 34% feel that there may be no difficulty in

legislating for declaring the results in grades, while about 7% feel that there could be some difficulty. The rest have not responded to this question.

1.12 *Administrative Aspects*

(Q. 44)—About 48% have not agreed to decentralisation of examinations, while about 20% have agreed to the suggestion.

(Q. 78)—About 34% agree to the suggestion that public examination should be conducted in places where the students studied so that they are supervised and controlled by the teachers who know them. About 36% do not agree with such a view.

(Q. 79)—About 34% agree that separate examinations should be conducted for ex-students and correspondence course students, while about 39% do not subscribe to this view.

1.13 *Representation of Government on Boards and University Syndicates, etc.*

(Q. 33)—About 50% have said that Government have adequate representation.

(Q. 34)—More than 60% have not replied to this question on the effectiveness of Government representatives in the control and conduct of examinations. About 20% have given a variety of reasons for their being not effective. Some feel that Government representatives cannot take any interest because they have too much work.

1.14 *Financial Aspects*

(Q. 30)—About 50% have not replied to this question, while 40% feel that universities are not hard pressed for funds.

(Q. 31)—About 30% say that the Boards have excess of income over expenditure, but more than 60% have not replied to this question.

(Q. 32)—More than 85% have not replied to this question.

1.15 *Special Examinations for Talented and Bright Students*

(Q. 25)—About 80% feel that there should be such a special examination.

2. *Defects of Examinations*

(Q. 80)—About 60% agree with the view that the importance

attached to the results of public examinations by parents, teachers and the public has undermined the desire for learning and scholarship.

(Q. 84)—About 78% agree to the view that the publishing of guides and running of coaching classes have increased during the last 10 years and given various reasons

(Q. 85)—About 47% agree with the view that the syllabus for public examinations are overloaded and that this is partially responsible for cramming by students.

(Q. 92)—About 54% agree with the view that the relevance of the course to the students is completely or almost completely ignored by the framers of the courses.

(Q. 93)—About 72% have said that the confidence of the public in Board/University examinations is rapidly going down.

(Q. 94)—About 47% agree with the view that by conducting the public examinations exclusively in the mother tongue of the examinee, many hardships and the fear of public examinations could get reduced.

3. *Examination Reform, etc.*

(Q. 73)—About 79% agree with the view that the design of an examination paper should be thought out clearly and explicitly at the very stage at which considerations are given to curriculum and its development.

(Q. 74)—About 78% are in favour of the incorporation of an integrated view of curriculum, instruction and evaluation in teachers training.

(Q. 86)—About 32% feel that there is interference in the normal work of a teacher by others, while about 28% do not hold this view. The rest have not replied to this question.

(Q. 87)—About 28% feel that the change of textbooks and syllabuses for public examinations is far too frequent, while about 47% do not agree with this view.

(Q. 89)—About 67% feel that the teachers are now taking less keen interest in the work of students.

(Q. 90)—About 71% agree with the view that the majority of teachers are not able to enthuse the students in their work.

(Q. 91)—About 71% agree with the view that many courses a school and college are outmoded and have no objective orientatation.

4. *Autonomous Colleges*

(Q. 14)—About 41% say there is no provision in the AActs o Incorporation of the Universities, etc., for autonomous colleges,s, whil the rest have not responded.

(Q. 15)—About 91% have not responded to this questioon.

(Q. 16)—About 54% have either not responded or suggested further consideration. About 26% agree to the view that autonomy should in the first instance be restricted to the conduct of examinations only.

(Q. 17)—About 68% have not responded or said it doees not apply to them.

(Q. 18)—About 70% have not responded to this questidon relating to the attitude of colleges which are not granted autonoomy.

(Q. 62)—About 46% agree to the view that in case autconomy is granted to a college, there should be one nominee of the UUniversisty for each subject for scrutinising the question-paper anad the marked scripts.

(Q. 63)—About 43% agree with the view that a representative of the university should be sent to keep an over-all watch on thae conduct of an examination in an autonomous college/school.

5. *Autonomous School*

(Q. 19)—About 42% subscribe to the granting of autonormy to well-established schools, while 30% do not. Others have giveen no replies.

(Q. 20)—About 34% feel that it will be possible to introduce legislation for empowering the State Boards to grant autonormy to select schools. However, about 54% have not responded prroperly to this question.

TABLE 1

CLASSIFICATION OF QUESTIONS IN BROAD CATEGORIES

1. *Public Examinations*
   - 1.1 Need—1.
   - 1.2 Frequency—2, 52.
   - 1.3 Form—3, 75.
   - 1.4 Scheduling of Examinations—41, 42, 43, 60, 61.
   - 1.5 Question Papers—59, 64, 65, 66, 67, 68, 69, 72, 76, 77.
   - 1.6 Valuation of Answer Scripts—36, 37, 70, 71.
   - 1.7 Interpretation of Examination Scores and Grades—45, 46, 47, 48, 49, 50, 51, 56, 57, 58.
   - 1.8 Malpractices, and Law and Order Problems—4, 5, 6, 8, 9, 10, 11, 13, 26, 27, 28, 29, 35, 83.
   - 1.9 Internal Assessment—12, 38, 39, 40, 53, 54, 55, 81, 82, 88.
   - 1.10 Special Legislation—7.
   - 1.11 Recruitment to services and admission to professional courses—21, 22, 23, 24.
   - 1.12 Administrative aspects—44, 78, 79.
   - 1.13 Representation on Examination Boards—33, 34.
   - 1.14 Financial Aspects—30, 31, 32.
   - 1.15 Special Examinations for Talented and Bright Students—25.
2. *Defects of Examinations*—80, 84, 85, 92, 93, 94.
3. *Examination Reform*—73, 74, 86, 87, 89, 90, 91.
4. *Autonomous Colleges*—14, 15, 16, 17, 18, 62, 63.
5. *Autonomous Schools*—19, 20.

TABLE 2

CLASSIFICATION OF THE RESPONDENTS ON OCCUPATIONAL BASIS

	Occupation	*Number*
1.	Educationists	2
2.	Associations	4
3.	School Boards	3
4.	Ministers	2
5.	Directorates of Education	14
6.	Headmasters of Schools	29
7.	Polytechnic teachers	2
8.	Vice-Chancellors	2
9.	Registrars	2
10.	Education Departments of the Universities	6
11.	Principals of Colleges of Education	4
12.	Other faculties in the Universities and institutions of the status of universities	10
13.	Other institutions	3

PRINTED AT RAJENDRA PRINTERS, RAM NAGAR, NEW DELHI-55.

Committee on Examinations

Central Advisory Board of Education
Ministry of Education and Youth Services
India

A Typical Reply to Our Questionnaire

National Council of Educational Research and Training
New Delhi 16
January 1971

QUESTIONNAIRE ON EXAMINATION REFORM

1. Yes.

2. At the end of VII Class besides S.S.C.

3. Internal assessment can be utilized as a tool for the purpose of assessing individual's progress and maintenance of cumulative records of pupils. Weightage should be given for objective internal assessment also. Yes, it is a much better form of evaluation than a written examination provided it is done objectively. Yet written examination cannot be entirely given up. It must be a part also.

4. Malpractices adopted before the commencement of the examination.

(1) *Pupils*

(a) Trying to procure the expected or anticipated questions through various sources.

(b) Writing out the answers on slips of papers of the expected questions.

(c) Preparing the answers for anticipated questions on additional sheets stealthily secured from the examination centre.

(d) Keeping written slips of the expected answers in their pockets, in their shoes, in the geometry boxes, sleeves, etc.

(e) Writing the answers on limbs, palms, thighs, and other parts of the body.

(f) Writing the answers on pads in an invisible script.

(g) Conspiring with their friends to throw paper balls containing answers, shouting the answers from outside arranging loud speakers giving out answers.

(h) Threatening the lives of the invigilators, binding the invigilators.

(i) Preparation to carry knives and daggers, chilli powder in their pockets with an intention to make use of in emergency.

(j) Detaching the papers of the expected questions from the textbooks with an intention to carry them to the examination hall.

(k) Conspiring with the invigilators to assist them in the examination hall to the maximum extent.

(l) Drawing maps, diagrams, writing formulae, technical words, etc., on walls and desks.

(2) *Teachers*

(a) Teachers prepare the answers to the questions brought by the pupils and thus encourage them in malpractices.

(b) They accept other types of presentations, promising the pupils to help them in the examination hall.

(c) Teachers leak out question papers sometimes misguiding the pupils with an imaginary question paper.

(d) Give hopes to the pupils that they would be the invigilators, thus violating many a time official secret Act.

(f) Teachers take initiative to help their wards who are having special coaching under them by getting themselves appointed as invigilators, in that particular centre where his wards write the examination.

(g) Teachers supply additional answer sheets to the pupils in excess with an intention to encourage them to write the answers at home.

(3) *Parents*:

(a) Canvass the invigilators to help their children in the examination hall.

(b) Encourage short cut methods in allowing their children to secure question papers both from reliable and unreliable sources.

(c) Certain parents try to find out the names of paper setters, invigilators, examiners, etc., so as to help their children in the examination and thus giving them a wrong lead for malpractices.

(d) Parents influence the persons at various levels of examination.

(4) For minimising malpractices at the student level, the following preventive measures are suggested:

(a) Proper precautions are to be taken to keep the question papers strictly confidential.

(b) A thorough check of the pupils before they enter the examination hall and prevention of any written matter or manuscript paper to be carried into the halls.

(c) Proper check and supervision should prevail over the distribution of additional sheets and room wise accounts of additional sheets are to be maintained. Additional sheets should be supplied over at a time and the students should note the subject and the Roll No. immediately. The Chief Superintendent should maintain a correct account of the additional sheets.

(d) If any written matter is detected on any part of the body, the pupils should be sent out of the examination hall besides suitable punishment to be inflicted later.

(e) Hundred yards around the examination centre should be enclosed as a prohibited area. Strict vigilance by the police is desirable.

(f) Give wide publicity regarding drastic measures to be adopted in cases when the students are found carrying knives, daggers, etc.

(g) Frequent shift of invigilators from room to room during the examination. Proper care in the selection of invigilators is to be taken. Such of the invigilators who are found conspiring with the students should be severely dealt with.

(h) Getting the school building white washed before the commencement of the examination and not to allow the students to enter the examination hall except for writing the examination.

Teachers

(a) Teachers should be advised to discourage undesirable methods adopted by the students while preparing for

the examination. They could guide the students, but not encourage malpractices in examination.

(b) Such of those invigilators, who are found violating official secret Act, should be immediately reported to the District Educational Officer by the Chief Superintendent and disciplinary action should be taken against them, as an experimental measure.

(c) Invigilators could also be appointed from persons other than the teaching community to facilitate judicious supervision.

(d) Already discussed under C under the item pupills in question 4.

Parents

(a) As the invigilators would be drawn from other department also, this could be prevented to some extent.

(b) Parents should be advised to exercise careful supervision over the studies of their children, rather than adlopt short cut methods in the eleventh hour.

(c) This is being reduced to a greater extent by means of spot evaluation where there is very little scope for such malpractice.

5. Malpractices practised during the conduct of the examination.

(1) Copying from slips of paper,

Copying from slips of textbooks,

Copying from slips of neighbours answer books,

Copying from slips of other sources.

(2) Copying with the help of external agencies such as teachers, peons, watermen, parents and through other members engaged in the examination work.

(3) Copying from paper balls received from outside.

(4) Writing the answers received from outside agencies such as loud speakers, shoutings, etc.

(5) Copying the objective type of answers by means of code language or gestures,

(6) Writing the answer with the help of invigilators, teachers and Chief Superintendent.

(7) Exchanging answer scripts with their friends.

(8) Under the pretext of easing oneself, the students look into the textbooks or paper slips and gather information. Near the urinals boys meet each other and exchange the answers.

(9) Exchanging question papers on which answers are written.

(10) Sending the question paper out immediately after the distribution of question papers; consequently answers are dictated by others from outside.

(11) Due to improper seating arrangements, the candidates being in close proximity to each other copying is unavoidable.

(12) The teacher writes the answers on the Black board and the students copy them in toto.

(13) Mass copying is attempted with the help of teachers.

(14) Threatening the invigilators with dagger and knives both inside and outside the examination hall for purpose of copying.

(15) Connivance at the copying by the invigilator.

(16) Insertion of additional sheets on which answers are written at home.

6. To some extent as in other fields.

7. Yes. I think it would help.

8. After the introduction of spot evaluation, malpractices of certain types after the examination have been reduced to some extent.

9. Yes, undoubtedly.

10. Yes.

11. Malpractices in practical examination in science and professional subjects are comparatively more than in written examinations.

(a) Frequent change of examiners from one university area to another university areas.

12. Yes. Internal assessment should not be utilized for declar-

ing results in the public examination. However, a credit certificate for the internal assessment made during the course of study may be issued to all the candidates by the school authorities.

13. Yes. When there is disturbance in a place it is reflected in public examination centres though not related to malpractices at the centre.

14. No.

15. Does not arise.

16. Does not arise.

17. There may be procedural difficulties. If autonomy is granted to the colleges in respect of examination thoughtful planning of the examination scheme is quite essential. The American system of conducting examinations through internal assessment procedures may be thoroughly studied and implemented in a judicious manner. This aspect is yet to be thought of seriously.

18. Autonomy should be granted duly to a few well-established colleges as an experimental measure. Only such of those colleges fulfilling the rules laid down for autonomy should be declared autonomous in respect of examination which gives no scope for protest by other colleges. Rules will have to be framed very carefully.

19. Not necessarily.

20. Does not arise.

21. Yes, but this will not entirely rule out the malpractices of examination at this level.

22. No.

23. No.

24. No.

25. Yes.

26. Yes. Taking first the question of numbers in the past, the total number of students appearing for different examinations, even including the SSLC or its equivalent, was of manageable proportions. Arrangements could be made with greater ease, and the precautionary steps taken at all stages of examination right from the selection of examiners to the declaration of results could be planned and taken without much difficulty. Similar was the case at the examination centres where also the numbers were reasonable. The problem,

therefore, could be easily tackled. But now it is all changed. The number of students appearing for degree or pre-degree level runs to thousands and those for the secondary or higher secondary to tens of thousands if not lakhs. Naturally at all stages of conduct of examination, things have become complicated. Number of question papers to be printed is large requiring thereby a large number of presses to do the printing. Examination centres have to be notified, invigilators have to be got in larger numbers. At the centre, if any precaution is to be taken, it becomes very difficult. For instance, it is humanly impossible to check the person of each and every candidate at the examination centre to find out if he is hiding something for which the students will have to be asked to come an hour or so earlier. The very numbers taking examination at a centre gives the students the strength to do as they liked. The impact of the number at the time of evaluation, tabulation and announcement of results is equally apparent. Unfortunately, for administration this increase in numbers has not been accompanied by any corresponding increase in the efficiency of those entrusted with the task of conducting the examination. The harsh reality of the problem is that there is no scope for reducing the numbers and whatever we devise should take full cognizance of the fact that this will continue in an ever increasing measure.

27. There was trouble during the Telangana agitation.

28. Not necessarily.

29. Not very frequent/No.

30. No.

31. No.

32. Does not arise.

33. Yes, adequate.

34. To the extent possible control is being exercised.

35. Does not necessarily follow. Besides, their will be no uniformity.

36. Yes.

37. Spot evaluation is being conducted effectively and results are published in time. While this has removed some defects it has not eliminated the entire fabric of malpractices.

38. To some extent.

39. The general attitude of the students must change by proper coaching and inducement.

40. Yes.

41. There must be sufficient interval of say 4 weeks, 6-8 weeks is definitely too long.

42. While this is really good, in practice it will not be possible.

43. Consequential measures to be adopted.

(1) Period and time of vacation to be the same throughout the state for all schools.

(2) Restricting transfer of teachers specially during the academic year.

(3) Textbooks should be made available to the pupils even before the reopening of schools for starting the lessons in time.

44. No.

45. Does not arise.

46. Does not arise.

47. Yes, provided the number of grades is adequate enough, to make them fairly sensitive. Grading can be thought of only if it is adopted by all authorities in the country. Otherwise it leads to difficulties in question. In fact, the, trend seems to be towards giving upgrading and adopt marking.

48. A rating scale may be adopted, introducting 4 grades, each being made sensitive as follows:

A+, A, A−, B+ B, B−& so on for C & D as well.

49. Yes.

50. No. This is necessarily.

51. No. The one public examination with internal assessment should be enough.

52. Does not arise.

53. Yes.

54. Not necessary provided this is given due thought.

55. Yes.

56. & 57. Although the answer to Q. 55 is in the affirmative, uniform rules of condonation may still be framed and such a procedure can be consistent with the proposed reform in examinations giving due weightage to internal assessment.

58. Yes.

59. The suggestion is acceptable.

60. Yes. 2 papers a day, but students are not likely to accept this.

61. Yes, about 10 days at the most.

62. No.

63. No.

64. Not a very large number, but a fairly good number.

65. We feel that the ratio among the essay, objective and problem oriented types should be 1 : 1 : 2.

66. Yes.

67. One month.

68. Yes.

69. Yes.

70. No. A model question paper may be set and made available to the colleges and schools for their remarks and for further improvement.

71. Does not arise.

72. Yes.

73. Yes.

74. Yes.

75. Yes, but strictly limited only to a few.

76. Yes. Another suggestion that is becoming popular is that examination should be allowed with books, questions being framed in a manner as to bring out the ingenuity of the candidates. In support of this, the example of some departmental tests "with Books" is cited. But the suggestion is not the answer to the problem. If departmental tests with books have been found satisfactory, it is again due to numbers. There is no comparison between the number of students taking academic examination and the number taking

departmental examination and, hence, as already explained earlier it will not be possible to arrange for all the precautionary measures in an examination as in the departmental test. More than this, there is no guarantee that the malpractices now seen in giving answers will not be there in locating the answers in the books made available to the examinees.

77. Yes.

78. No.

79. No.

80. Yes, I agree. The old concept of an examination as an assessment of the level of attainment of proficiency in a particular field of study by everyone, needs a change in the sense that this assessment is no more considered an end in itself, but as a means to an end. In short either proximately or remarkably the examination and success in it are 'gateway to employment or stepping stones leading to this gateway'. Success in an appropriate examination though not a guarantee for getting a job is nevertheless a "must" for getting a job. Therefore, in direct proportion to the incidence of unemployment the importance of examination grows. A stage has been reached where it has come to be thought that all is fair in passing an examination. Thus the pressure of circumstances in other fields, particularly in the field of employment is making itself felt in the examination sphere also. One obvious course appears to be to reduce the importance of examination. To the question, if examination can altogether be eliminated, the answer is in the negative. If the examination at the end of a course is eliminated, an alternative test at the time of entrance to the next higher course or for a job cannot be avoided and so long as that has to be done, the existing evils will at the most be only transferred to a higher level.

81. No, even now they are concerned with the examination.

82. Please see answers to questions 53 to 54.

83. Yes. In short the reasons are: (1) growing numbers, and (2) exaggerated importance that is given to success in examination.

84. Yes.

(a) Short cut methods to get through the examination.

(b) The above reasons are also responsible.

85. No.

86. Yes.

87. No, not in this State.

88. Yes, this is very essential.

89. Yes, though there are noticeable exceptions.

90. Yes.

91. Objective based instruction is in its initial stage.

92. Yes, but there is a welcome change in recent times.

93. Yes.

94. Yes, to a considerable extent.

PRINTED AT RAJENDRA RAVINDRA PRINTERS (P) LIMITED,
RAM NAGAR, NEW DELHI-55.

Committee on Examinations

Central Advisory Board of Education
Ministry of Education and Youth Services
India

Principles of Scaling and the Use of Grades in Examinations

A. E. T. Barrow
Secretary,
Council for the Indian School
Certificate Examinations, New Delhi

National Council of Educational Research and Training
NEW DELHI
January, 1971

PRINCIPLES OF SCALING AND THE USE OF GRADES IN EXAMINATIONS

1. *The sanctity of raw marks*

The myth of the omniscience of the numerical marks awarded by examiners is nurtured in India and this sanctity accorded to raw marks is one of the main hurdles in the reform of the examination system.

An illustration of this is quoted from the "Statesman" of 26 September, 1970.

"THE ONE ON TOP"

"The.....Board of Secondary Education has upgraded a successful–student, who stood second in the final examination to first position, reports PTI.

The Board amended the original 50-name merit list of the March 1970 examination, declaring.....of.....School at .....to have secured the first position.

The amendment followed detection of an error of only one mark, on a request for verification by....., in the total secured by him in Sanskrit. This increased his percentage from 87.13 to 87.25–0.11% more than that of.....of....., who had topped the original merit list."

0.11% more than the next candidate–incredible! Yet, this form of absolute worship of marks of examiners in India is 'absolute'.

The above quotation is not meant to be a criticism of any particular examining board, but a criticism of the present system.

2. *Characteristics of a good examination: reliability and validity*

Studies of the reliability of traditional examinations have been conducted from time to time, and the earliest enquiries, those of Valentine (*The Reliability of Examinations*–University of London Press, 1932) and of Hartog and Rhodes (*An Examination of Examinations,* 1966) brought into prominence the major defects of marks

of examiners. They highlighted the need for reliable and valid examinations.

The disturbing facts revealed, by the enquiries mentioned above led also to efforts to try and improve and reform the traditional type of examination.

The main characteristics of a good examination are *reliability* and *validity*. Reliability can best be defined as *consistency*. An instrument that measures consistently is reliable. Thus, taking an example from ordinary life, a tape measure as a means of measuring length or height is obviously a more *reliable* instrument than a piece of elastic. *Validity* is best defined as "the extent to which a test or examination does what it is designed to do."

The concepts of reliability and validity will become clear if the relationship between them is illustrated.

A test can be perfectly *reliable* and yet *invalid*. Thus, for instance, if English composition is marked by the number of words written the measuring instrument would be perfectly *reliable* but the purpose of the examination namely, to assess linguistic ability, communication of adequate and relevant ideas and clear and appropriate arrangement of subject matter, would not be achieved and, therefore the examination would not be *valid*. In designing an examination therefore, emphasis must not be laid on *reliability* to the detriment of the *validity* of the examination. The problem, therefore, of ensuring the reliability of an examination and not affecting its validity must be the main pre-occupation of examination reform.

India is moving from the stage of an educated elite towards that of an educated society and there is no force which can prevent this democratic movement. The explosion of numbers in our examination system is a stark fact. Reform, therefore, in the system of examinations must be based on the increasing use of statistical methods. As far back as 1962 a Committee of the University Grants Commission in their report on Examination Reforms recommended:

> "The present methods of marking examination scripts and of combining and tabulating marks in university examinations without reference to recognised statistical procedures are not satisfactory. The procedures will have to be developed to make marking and combining of marks more objective."

Two problems are thus raised:

1. methods of coordination of the marking of scripts in individual subjects;

2. combining of marks secured by a candidate in different subjects offered by him.

These problems are accentuated and magnified in mass conducted examinations in which thousands, nay lakhs, of candidates are involved.

The first issue, namely, marking of scripts in individual subject in an examination conducted for a large number of candidates raises the age-old question of the subjective element entering into marking and, therefore, invalidating the marks of examiners because they are not comparable. Stated in another way, it means that if the same scripts are given to different examiners it will be found that the marks given by them vary very considerably. The problem then is how to remove the subjective element and bias of individual examiners.

3. *Standardizing examiners*

Before dealing with the statistical procedures required to remove the subjective element and bias of individual examiners in the marking of scripts, certain refinements in the setting, moderation and marking of scripts will be considered to help in this process.

As the preparation of a question paper is a time-consuming process the work should start over a year before the date of the examination.

The first procedure is to draw up a blue-print of the question paper to be set, so that the validity of the examination in that subject is achieved, that is, the purpose of the examination is ensured. The blue-print will indicate the proportion of marks to be allotted to the areas of knowledge, skills, concepts, etc., which are to be tested. Thus, in *Geography a blue-print might be drawn up as in the table given on page 4.

The Chief examiner or the paper setter must base his questions on the blue-print taking into consideration the scope of the syllabus, whether the question papers are of equivalent standard to the question papers of the previous years, the age group of the candidates, the number of years of study for the prescribed course and such other relevant factors.

---

*Adapted from Examinations Bulletin No. 3—The Certificate of Secondary Education: An introduction to some techniques of examining—Secondary School Examinations Council, England.

Content	*Behaviour*					*Tot*
	Knowledge of facts etc.	*Understanding of concepts*	*Application of concepts*	*Skills*	*Relevant Imaginative Insight*	
India	4	5	5	2	4	20
World Geography	4	5	5	2	4	20
Special Regions	4	4	4	4	4	20
World Issues	5	5	3	3	4	20
Local Geographical Experience	4	3	3	6	4	20
	21	22	20	17	20	100

In drawing up this first draft the chief examiner should be assisted by senior colleagues. This draft must then be sent to a *moderator* whose function is to safeguard the point of view of the candidates who are taking the papers. He must ensure that the papers are technically correct and that they are a fair and sufficient test for the candidates for whom they are intended. The moderator must submit a report on the draft question paper.

Thereafter, the report must be considered at a meeting of the chief examiners of the different papers in that subject, the moderator and experienced senior examiners. If necessary, questions may be rejected or modifications carried out in accordance with the decisions taken at the meeting.

New versions of questions must again be submitted to the moderator and, if necessary, another meeting of the chief examiners in the different papers in that subject convened till agreement has been reached on the final form of the paper.

It is important that in subjects where problems are set, e.g., in the sciences and mathematics, assistant examiners who have not been

responsible for drawing up the questions or reviewing them should be given the task of working the draft questions and providing solutions. The difficulty of the problems and the validity of the time allowed for the paper are thus tested.

After this and before the examination begins, the chief examiner with the help of senior colleagues must draw up the scheme of marking which will be used by all assistant examiners. The scheme will vary in length and in detail according to the nature of the subject and the paper. In general, the scheme should set out the principles of marking which are to be observed, maximum marks which are to be allotted to the various questions, steps of working and the points or versions which are to be rejected or accepted. Thereafter, the scheme must be circulated to the assistant examiners to be studied by them.

When the scripts have been received, the chief examiner must mark a certain number of scripts, selected specimens which are typical of the various standards of attainment or which illustrate points of particular interest. Photographic copies of these specimens must be supplied to assistant examiners and then a co-ordination meeting of all examiners must be summoned. The meeting will discuss the scheme of marking, which may be amended or added to in the light of the scripts which have been seen. The spacimen scripts will then be marked independently by all the assistant examiners, the discrepancies discussed and investigated and rulings given by the chief examiner on doubtful points.

The assistant examiners then begin the process of marking, following the marking scheme with the aid of the specimen scripts. Where the number of candidates is large, for every four or five assistant examiners a senior examiner known as a 'team leader' should be appointed to scrutinize the marked scripts of the assistant examiners. These in turn should be submitted to the chief examiner who reviews the sample scripts of the assistant examiners and, if necessary, holds discussions with the team leader and assistant examiners. The whole purpose of the processes described above is to *standardize* the examiners.

Other factors, which will help in the standardization of examiners are fair remuneration, a limited number of scripts (not more than 300 to 400), a fixed number of hours of marking in properly ventilated and, if necessary, in air-conditioned rooms.

4. *Random selection of scripts*

However, these factors will not eliminate the subjective elenment of individual examiners. One of the main factors which brings into play the subjective factor is the quality of scripts which an examiner is expected to mark. In spite of the detailed marking scheme, ggood working conditions, adequate remuneration, a lighter load of scripts, examiners are affected and influenced by the quality of scripts they are required to mark. If the average quality of scripts to be marked by examiners is good, then the poorer scripts, by comparison, will be marked strictly.

On the other hand, if the average quality of the scripts is substandard then the scripts which would otherwise be of average quality are given marks which would normally be given to good scripts.

The first need, therefore, is that the different examiners get scripts which are more or less of equal average quality. It would seem that this problem is not easily soluble because until scripts are examined it will not be possible to predict their average quality. There is, however, a basic statistical principle that can be invoked to solve this problem—the principle of *"random selection"*. If scripts to different examiners are allotted on the basis of a process equivalent to drawing up lots (and lotteries are now fashionable!) then the lots given to different examiners will be approximately of the same average quality.

There are two important statistical factors in the principle of "random selection" which will determine a common pattern of marking and will reduce the subjective element. These are—

(i) that in lots of three to four hundred scripts it will be found that the mean (average mark) or the median (middle mark) of the different lots of scripts will lie between a narrow range of two to three marks.

(ii) the range or spread of marks (the lowest mark scored and the highest mark secured) will not vary very greatly from one lot of scripts to another.

Thus, if there are great variations in the mean or median mark or in the range or spread of marks, it will mean that the subjective bias of the examiners is dominant and therefore, it will be statistically justifiable to scale the marks given by the examiners to conform to a common pattern.

Another important statistical axiom which justifies the scaling the

marks of examiners to a common pattern is that where there are scripts of several thousands of candidates, taught in a large number of schools, by hundreds of teachers, it is mathematically sound to conclude that the standards of teaching, the quality and the preparation for the examination cannot show wide fluctuations from one year to another. Any variations found from year to year cannot be attributed to variations in teaching or the intelligence or attainment of candidates but in the standard of the question papers, the standard of marking and other concomitants of the examination.

5. *Adjusting the mark of different examiners*

An experiment was made by Gauhati University on the adjustment of the marks of different examiners.

This study helped to highlight that *chance* in the conventional examination is far greater than has been previously suspected on account of unpredictable variations between the standards applied by different examiners. It did also show that the scaling of marks can compensate for these variations and in the words of the report, "that the marks thus awarded can result in greater validity than would otherwise be possible." "By scaling is meant the adjustment of marks to a common pattern. It has long been recognised as a necessary procedure, for examination results mean little or nothing when candidate A is judged on one standard and candidate B on another."

The Gauhati University investigation was based on what is termed 'median scaling'. To quote the report again, "If all the marks on the sheet are taken in order of magnitude beginning with the highest and ending with the lowest, the middle mark is the 'median.' The median divides the group of marks into upper and the lower half with the same number of entries in each. In the same way, the *upper quartile* is the middle mark in the top half and the *lower quartile* is the middle mark in the bottom half."

"The mean is a measure of the standard of marking. It is the mark which the examiner gives to a scrip of average merit."

In other words, the average of the median mark of the different examiners is worked out and treating this as the norm for those cases where the median mark of an examiner differs from the norm beyond a certain range, he marks in the whole lot of scripts marked by an examiner are adjusted, that is to say, raised or lowered proportionately.

Bu. it should be noted that the Gauhati University invvestigation adjusted the marks of the different examiners in the nmedian marks only and *not* in the *spread of marks.*

The report itself states:

"Mark sheets differ not only in the value of the mediann, but also in the spread of marks.... The spread is measured by the standard deviation which is approximately three-quarters of the interquartile range."

The report continues: "Ideally marks should be scaled soo that all sets of marks have (a) the same mean or median, and (b)) the same standard deviation. Of these (b) presents the more difficult problem, which needs further study...."

In an article published in the Indian Educational Review (January 1968), Professor V.M. Dandekar commenting on this observation of the report says:

"However, this is not entirely true. Two sets of marks having the same mean or median and also the same standard deviation may differ in several important respects."

He goes on to illustrate this and concludes thus: "The reason why two sets of marks with the same mean and standard deviation do not agree in several important respects is simple. As pointed out above, the mean and the standard deviation are particular measures of the average level and of the spread of marks. These measures would have special significance only if the distribution of marks, as given by examiners were perfectly normal. The term 'normal' here does not mean more than a particular form of statistical distribution. If the distribution of marks were perfectly 'normal' in this sense, it could be shown that two sets of marks having the same mean and the same standard deviation would agree in all other respects."

6. *The J-effect*

The marks of examiners, unfortunately, do not conform to a normal distribution curve. The Gauhati report draws particular attention to this important aspect of the marks of examiners: "A prominent feature of many mark sheets has been called the 'J-effect', since it often given a J–shaped distribution. In these mark sheets a disproportionate number of scripts are placed exactly at the pass mark, and there is a corresponding gap in the marks immediately below...."

"The J-effect arises when the examiner considers it his function to decide whether the candidate passes or not. Recognising, perhaps rightly, that his marks are affected by uncertainties, he gives the benefit of the doubt to the candidates whose marks are just below the line...."

"In adjusting border-line cases the examiner is actuated by a perfectly sound motive....but here it is being done at the wrong stage. It is essential that border-line adjustments shall be made only in the light of the total evidence when the results are complete."

7. *Function of raw marks: rank ordering*

Before suggesting and analysing a method of adjusting marks to overcome the shortcomings pointed out by Professor Dandekar, it may be well at this point to examine the purpose of the raw marks awarded by examiners.

At the outset it must be made clear that the awarding of numerical marks by the examiners is absolutely essential in the examining process. The marking scheme must be strictly followed, so that if there are variations in the marks awarded for a question or a different part of a question, these should be reduced to a minimum. It is important to remember that marks, being relative, must be regarded as aids in measuring rather than as absolute measures in themselves.

The primary and perhaps the only purpose of awarding marks, whilst an essential process in an examination, is a ranking procedure which places candidates in a particular order relative to one another. In other words, we accept the rank order indicated by the marks given by a particular examiner and this rank order must not be distorted by any subsequent procedure. It is necessary to repeat that the assigning of numerical marks to scripts by an examiner is a necessary step in the examination process and it is not suggested that this assigning of numerical marks should be abolished.

However, once the examiner has indicated the order in which these scripts are to be placed, the value of the marks assigned by him are not relevant.

8. *A simple method of mark distribution*

We now return to the best means of adjusting the marks of

different examiners taking into account the comments made by Proof. Dandekar.

Professor Dandekar's own suggestions (and that adopted with modifications by a large number of examining bodies) are given below:

"The distributions of marks as given by examiners are usually *not* normal and often they are far from being normal. Under these conditions, it may be advisable to adopt certain measures which are more direct descriptions of the pattern of distribution. The *simplest and most direct description of a pattern of distribution is to indicate the number of proportion of candidates who have secured markks between certain ranges.*"

The study of Table I, which must be considered merely *illustrate,* will clarify the proposition just enunciated:

TABLE I

(A) *Range of Marks*	(B) *Percentage of candidates*
80 and above	2
70-79	8
63-69	10
59-62	14
55-58	16
50-54	20
45-49	10
40-44	10
39 and below	10

The table gives the ranges of marks (Column A) and against each range or group of marks the percentage of candidates securing those marks (Column B).

If all the examiners marking independently within the marking scheme and, without adjusting their marks, get the same percentage of candidates in each range or group of marks as shown in Table I, then we would have a pattern of distribution of marks which will be identical and which would make the marking ideal. Quite obviously, it is not possible for even two sets of marks of different examiners, mainly because of the subjective factor, to agree in respect of proportion of candidates falling into each group of marks, as we would desire. How then can this pattern of distribution of marking or different examiners be achieved?

The simplest method and the method which is mathematically correct is to adjust the marks given by each examiner so as to bring the pattern of his marking into conformity with a common pattern which must be determined, as for instance, as given in Table I.

The next question that arises is how are we to determine with mathematical precision the percentage of candidates falling within each range of marks. This may be done as follows: After all the examiners have marked their lots of scripts (based on the principle of random selection) their marks may be pooled together and distributed for each range of marks.

Thereafter, the marks given by each examiner should be adjusted so as to bring the pattern of his marking into conformity with the common pattern. This procedure suffers from one grave defect, in that the adjustment of marks of individual examiners cannot be carried out until all the scripts have been marked. In practice this may lead to considerable delay in the declaration of results.

It may also mean that there will be a variation in the results and, therefore, of standards, in a subject, from year to year. In order to prevent the delay in the operation of the system and to avoid wide variations in the results from year to year, the simplest method would be to establish the percentage of candidates in each range of marks for each subject based on the norms of past years, say five years. Thus, actual marks given by all examiners in the past five years can be distributed and the proportion of candidates falling within each range of marks, such as, 80 and above, between 70 and '79, etc., etc., may be worked out. These can then be the norms which would serve for some years, subject to periodical revision.

To recapitulate the process of adjustment of marks will involve the following:

(i) determination of the proportion of candidates falling within each range of marks;

(ii) ranking the numerical scores of each examiner in a descending order of marks;

(iii) scaling the rank order of each examiner to conform to a common pattern.

9. *Assigning grades*

Having adjusted the marks of the different examiners to conform to a common pattern of mark distribution and after ranking

the scripts examined by each examiner, in a descending order of t the marks given by them, the top 2 per cent are given the letter grade *A* or number grade *1*; the next 8 per cent are given letter grade *A2* or number grade *2*, and so on (see Table II). This ensures that the rank-ordering of the scripts is not distorted.

TABLE II

(A) *Range of Marks*	(B) *Percentage of candidates*	(C) *Letter Grade*	(D) *Number Grade*	(E) *Standard*
80 and above	2	A1	1	Very Good
70-79	8	A2	2	
63-69	10	B1	3	Credit
59-62	14	B2	4	
55-58	16	C1	5	
50-54	20	C2	6	
45-49	10	D1	7	Psas
40-44	10	D2	8	
39 and below	10	E	9	Fail

It should, however, be made clear that the examiners must not be asked to allot grades rather than numerical scores. The numerical mark given by examiners are essential. It is only after the scripts have been put in a particular ranking order, on the basis of the marks assigned by each examiner, that the grades may be assigned.

It should be emphasized that the percentages for each range of marks in Tables I and II are purely *illustrative*.

10. *Norms in different subjects*

The attempt in this paper, so far, has been to find ways and means of ensuring the comparability of marks of different examiners in a subject. Certain methods on the establishment of 'norms' for the distribution of marks in a subject have been suggested, namely, pooling the marks of all the examiners in the current and taking the 'average' as the pattern of distribution or basing the pattern of distribution on the past four or five years.

Arising from this is another relevant and important question: should the pattern of mark distribution be the same for different subjects ?

At present in a large number of examinations in India not only are the pass percentages in certain subjects, specially the humanities, lower than those in the sciences and mathematics, but the numerical mark also disproportionately lower. There is no real justification for this.

If the examiners feel that a higher percentage of passes and higher 'scores' are not justified on their past experience, then it would clearly indicate that where candidates are permitted to *'opt'* for subjects there must be some defect in the curricular burden of the Humanities subjects. This must be examined. If, however, the disparity in pass percentages and numerical scores is due to the fact that examiners are not using the full marking scale (O—100) in assessing the scripts of humanities subjects, the immediate remedy is obvious.

Different pass percentages and mark distribution patterns in *elective* subjects where there are large numbers of candidates is not logical nor justifiable.

On pedagogical grounds it is hard to resist the logical conclusion that the pass percentage and the pattern of mark distribution should be more or less the same for all subjects.

Combining grades of different subjects

The second problem passed earlier was that of combining of marks secured by candidates in different subjects offered by them.

There are well known statistical procedure for converting grades into marks. In Table II, number grades have been suggested, in addition to letter grades. It is possible by means of a grade aggregate to classify candidates into first, second, or third divisions. Thus, on a five subject pass, assuming that the subject and other requirements laid down for a pass are fulfilled, the following scheme (using the range of marks given in Table II, which is used for the Indian School Certificate Examination, may serve as a guide:

A grade aggregate not exceeding 19	..	Division 1
Grade aggregate 20 to 28	..	Division 2
Grade aggregate above 28	..	Division 3

However, it cannot be too strongly recommended that the final result of a candidate should consist only of the grades secured by him in each subject in which he passes. The report of the Kotharri Commission says: "We recommend that the certificate issued by the Board on the basis of the results of the external examination at the end of the lower or higher secondary stage, should give the candidate's performance only in those subjects in which he has passsed, but there should be no remark to the effect that he has passed or failed in whole examination."

11. *Conclusion*

The attempt in this paper is to show that the numericall mark assigned by an examiner is an indicator for rank ordering of scripts only and has no absolute value.

The paper recommends that statistical procedures be increasingly used to ensure comparability of marks of examiners in indiividual subjects and in different subjects. The procedures suggested aire the allocation of scripts on the principle of random selection, the sscaling of marks based on a common pattern of mark distribution iin the same subject, the adoption of a common pattern of mark distribution in different subjects more especially elective subjects and the rrecording of *'grades'* only in the final certificate issued without dubbing candidates *first, second* or *third* class !

Printed at Rajendra Printers, Ram Nagar, New Delhi-55.