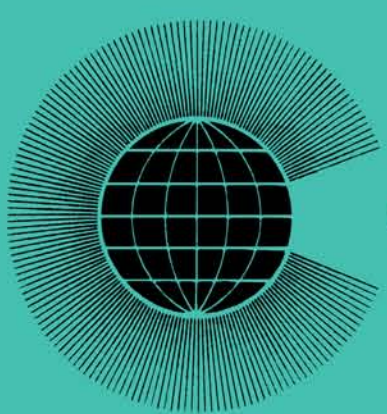
EDUCATION IN THE COMMONWEALTH

PUBLIC EXAMINATIONS



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Introduction

The Fifth Commonwealth Education Conference, meeting in Canberra in February, 1971, took note of the increasing concern of member countries about the development and administration of public examinations. Since that time a number of developments have taken place and individual countries have increasingly sought advice from the Commonwealth Secretariat on various aspects of examining. The time seemed ripe for a pooling of information and a definition of future strategies and action programmes.

The West African Examinations Council, the oldest and largest international examining body in the developing Commonwealth, took the initiative by suggesting that a meeting be held in conjunction with their twenty-first anniversary celebrations and offered to act as hosts. The Commonwealth Fund for Technical Co-operation agreed to provide the necessary funds and responsibility for the meeting was assumed jointly by the West African Examinations Council and the Commonwealth Secretariat. Thirty-eight specialists working in nineteen Commonwealth countries subsequently met in Accra, Ghana, from 12 to 16 March, 1973, to consider mutual problems and needs in the field of public examinations.

The conference planners hoped that the outcomes would include not only a comprehensive report and useful documentation but also a statement of priority needs in terms of training programmes for teachers, examiners and examination administrators, the development of exchanges of information and personnel, and increased co-operation in improving administrative structures and techniques of selection, measurement, assessment and guidance. Participants considered problems pertaining to school tests and examinations, including the effect of examinations on school curricula and methods, and also reviewed other types of public examination, such as those at tertiary level and those used by industry, commerce, the professions and the public services.

The rapid changes in education and the massive increase in numbers entering for public examinations at all levels mean that a fresh assessment must be made of the role, functions and organisation of the examining bodies themselves. The problem of reconciling educational and social desirability on the one hand with administrative practicality and economic reality on the other lay at the centre of all the deliberations.

This publication is the result of those deliberations. The first part contains a report of the main points made in the meetings by the participants as they discussed each of the session topics. Although every effort has been made to include all of the important observations brought out in the discussions it would be unrealistic to claim complete success. The second part of this publication contains background papers and materials prepared for the conference as well as other papers previously published by the Commonwealth Secretariat in a booklet titled Examinations at Secondary Level. The wide interest in these materials precipitated the decision to produce them together in a single publication. The papers have been divided into three sections and a summary of each paper precedes each section. The first section contains the papers which treat the aims and effects of examinations. The next section covers the organization, function and some experiences of various examination boards in the Commonwealth, and focuses mainly upon examining in the developing countries of the

Commonwealth. The last section contains reports and studies of specific problems in examining and helps to shed light on a number of problems that are common in examining. The authors were not immune to the effects of time and distance and some overlap of coverage may be noted.

Although some readers may distinguish between the word "test", to denote a measure of aptitude, typically in multiple choice form, and the word "examination", to denote a measure of achievement, typically in essay form, the report uses the words interchangeably. What matters most in education and examinations is not the form of questions employed in an assessment or the words used to denote it, but much wider issues. It is hoped that the report and supporting material will together provide a source of information and inspiration for all those concerned with the development, organisation and use of public examinations.

OUTLINE WORKING PAPER

AGENDA ITEM I: EXAMINATIONS AND THE AIMS OF EDUCATION

1. Examinations are a political and social issue almost as much as an educational one, for they provide at present the essential means by which educational staff and institutions are judged, national manpower selected and rejected, social mobility promoted and individual merit publicly recognised and rewarded. There is a widespread feeling that many examinations are constricting, unreliable and unjust, prejudicing the development of more enlightened methods of education and stigmatising as failures in life those persons who may be failures only in their inability to master examination techniques. Progressive educational pronouncements deprecate the power and influence of examinations and look forward to a time when their function will be assumed by other instruments. Unesco has undertaken no programme directly connected with the problem of examinations other than that related to the problem of equivalence. Examinations, however, are today more influential than ever, and are likely to remain so for some years. This being so, the prime purpose of this seminar is to identify means by which public examinations may best serve the needs of the 900 million people in the Commonwealth, half of whom are under 25 and still well within the examination orbit.

2. Among the major users of examinations are staff and students in schools, colleges and universities, technical and vocational training institutions and further education establishments; employers in commerce and industry; public service commissions; and trades and professions.

3. The purposes for which examinations are used include diagnosis; the assessment of attainment; selection; prediction; qualification; and the exerting of influence on pupils and teachers. Tests and examinations may be competitive or results may be measured against established standards; they may be used as a basis for guidance; they may be used as a teaching instrument. Too often, it appears, examinations are used for purposes for which they were not designed and to which they are unsuited; hence, for example, the lack of correlation between school-leaving results and success in degree examinations or occupational training. In the misuse of examinations lies the origin of much of the criticism levelled against them.

4. At school level, teaching is frequently geared to examination syllabuses, the objectives of which are not always explained by those responsible for them. Not infrequently the aims of the school curriculum diverge widely from the function of the examination, for examinations tend to concentrate on what is easily examinable and not what really needs to be examined. The objectives of the curriculum, where they are given, are often couched in general terms such as: "To prepare students for democratic citizenship" or "To train the young generation for effective participation in social and political activities", or even "To inculcate a sense of the dignity of labour". The examinations, however, concentrate on written tests of factual recall, predominantly in circumscribed areas of literacy and numeracy. In consequence teaching tends to be restricted to what will be tested. In Bloom's terminology, examinations concentrate primarily on the cognitive domain, give some attention to the psychomotor domain but hardly touch on the affective domain.

5. Among the major aspects which the seminar may wish to consider in relation to examinations and the aims of education are the following:

a) the relationship between educational objectives and examination procedures;

b) the adaptation of examinations to meet the needs of new educational developments (especially in the context of lifelong education) and new types of students (for example, mature students or correspondence-course students);

c) means by which public opinion may be guided towards a better appreciation of the functions and possibilities of examinations, and particularly to revise the pass/fail concept;

d) the influence on examination performance factors such as:

   i. the quality of teaching;

   ii. the environment (physical facilities, health, nutrition, social customs);

   iii. motivation;

   iv. anxiety;

e) the lack of follow-up of information gained about candidates as a result of examinations;

f) the contribution of examinations to guidance and counselling;

g) the devising of a wider range of more accurate examining instruments for specific purposes without increasing unduly the burden on candidates.

AGENDA ITEM II: TRENDS AND DEVELOPMENTS IN EXAMINATION TECHNIQUES

6. A recent paper on examination techniques expressed the hope that perfection would never be attained; imperfect examinations, it said, allow the worst examination failures to retain a modicum of self-respect because it is possible to blame lack of success on the imperfection of the instrument, whereas failure in perfect examinations could only be interpreted as personal inadequacy. A decade ago it was said, "That will be a sorry day for human initiative and personal aspiration on which there is announced the examination which shall be completely valid, the perfect predictor of each individual's ineluctable future". That day lies still for in the future; the development of markedly more effective means of testing and measurement would still not approach perfection.

7. Tests of attainment, especially in certain prescribed areas, have reached a generally acceptable level of validity and reliability; a range of approaches, varying in their objectivity, give results of reasonable accuracy. Similarly, diagnostic tests validated in particular settings have become a useful aid to teaching and learning. Many types of testing, however, remain imperfect in a marked degree, particularly those tests designed to provide information about intelligence, aptitude and future performance. Testing in domains other than the cognitive remains largely undeveloped; examinations in spoken language and practical activities often form a small proportion of the overall examination because of the difficulty of ensuring their value is recognised. The imperfection of the single test at the conclusion of a course of study is particularly well known.

8. To meet these and other criticisms, new approaches and new forms of examination are being developed. Increased objectivity, a move towards testing over a period of time, the development of batteries of associated tests of different kinds, a closer relationship between the declared objectives of the syllabus and the content and form of the examination, the reduction of the influence of chance, all have been major preoccupations of examinations research and development in recent years.

9. The seminar may wish to identify those aspects of examinations development which occasion most general concern and indicate action which should be taken to meet the needs. Among areas of particular concern there may be included:

a) the development of non-verbal and other tests designed to reduce the disadvantage of candidates being examined in languages other than their mother tongue or candidates with different cultural backgrounds;

b) the development of more effective predictors;

c) the production of testing procedures for spoken language and practical activities;

d) the role of teachers and teachers' associations in examination development, and the desirability of familiarising all teachers during their training with basic techniques of testing and measurement;

e) the advantages of continuous assessment, student profiles, batteries of tests, and means by which the results may best be made available to those who need to use them, such as prospective employers;

f) methods of examining private or non-institutional candidates;

g) the initiation and control of research into new examination techniques.

AGENDA ITEM III: THE ROLE, FUNCTION AND ORGANISATION OF EXAMINING BODIES

10. Most public examining bodies in Commonwealth countries have developed in association with universities and have geared their activities to meet the needs of the universities, even though the percentage of any age-group reaching these institutions has been extremely low. It may be that fresh consideration should be given to the desired roles and responsibilities of public examining bodies. This would form a necessary background to a discussion of the functions and organisation of examining bodies. The case for national and regional examinations should be explored. The range of activities which might ideally be encouraged by an examinations council should be discussed, both in the light of the present multiplicity of examining authorities and the current developments towards lifelong and non-institutional forms of education and training.

11. The control of many examining bodies lies in the hands of university, school and government nominees. The desirable degree of autonomy for an examining authority should be considered, as should the breadth of representation on its controlling body and its executive and advisory committees. Possible committee structures might be examined. Relations with the users of its examinations and the public at large might be touched upon.

12. The staff of an examinations council is conventionally drawn from teachers and educational administrators. Some attention might be given to the best sources for recruitment of staff and the types of staff required. Suitable forms of training for newly-recruited staff and in-service provision for more experienced staff should be outlined. The most appropriate providers of such training should be identified.

13. Consideration might also be given to the recruitment, training and assessment of examiners who are not full-time members of a council's staff.

14. The place of research and evaluation in the operation of an examinations council should be explored. An attempt might be made to establish how far an examining body should attempt to influence educational practice and how far it should limit its activities to responding to expressed needs.

15. The administration and logistics of examining bodies - local, national and international - should be considered and relative advantages compared. Problems of scale (large and small), distance, time, security and costs should be discussed, as should methods of ensuring acceptable systems of syllabus formulation, examination construction, marking, processing and moderation (including the place of machines in examination procedures). Attention might be given to the desirable public relations activities of examining bodies. When discussing the possibilities of co-operation among examinations councils means might be explored for the evaluation of qualifications and the establishment of equivalences.

16. The likely future role of examination councils should be explored in the light of changing patterns of education and employment. Attention might be given to means by which existing examining bodies might be assisted in reorganisation and restructuring to meet the changing needs.

AGENDA ITEM IV: COMMONWEALTH CO-OPERATION IN THE FIELD OF EXAMINATIONS

17. It is expected that areas with potential for new or expanded Commonwealth co-operation in the field of examinations will be identified and expanded in the course of the seminar. No detailed suggestions will be made in this working paper, although it may be helpful if participants consider possibilities under the general headings of:

a) information;

b) meetings;

c) training and study opportunities;

d) applied research;

e) technical assistance.

PART I

THE REPORT OF THE SEMINAR

1. EXAMINATIONS AND THE AIMS OF EDUCATION

The Social Context of Examinations

The origins of public examining in English-speaking countries lie in contemporary progressive and liberal attitudes. More than a century ago when university examinations were reformed and entry to government service was made subject to competitive examination rather than by patronage, a contribution seemed to have been made to social justice. When the School Certificate replaced a plethora of specialised examinations about half a century ago it was anticipated that the burden on pupils would be lessened and schools freed to introduce more flexible and locally relevant curricula. The fact that the best hopes were not fully realised is often blamed on the examination system: the truth probably lies in a complicated set of variables of which the examination system is but one. The importance of examinations in the lives of everybody seeking to qualify educationally and professionally underlies the persistent criticism of their fallibility and injustice. Were they less important they would be less criticised.

Examinations have become a political and social issue as much as an educational one. For in most Commonwealth countries today they provide the essential means by which educational staff and institutions are judged, national manpower selected and directed, social mobility promoted and individual merit publicly recognised and rewarded.

Among certain bodies of educational opinion examinations tend to be cast in the role of constraints on the educational process, at best a necessary evil, at worst a restricting and deadening force acting against the best interests of candidate and teacher. Yet in the present context of social, economic and educational structures selection is necessary and selection processes have a long history; only the scale of operation has expanded over the last fifty years until today examinations touch directly on the bulk of many populations. In large measure public examinations are accepted as the least offensive means of selecting those who will advance to positions of privilege and prestige within their society. There is undoubted truth, however, in the assertion that insufficient attention has been paid to the consequence of failure in competitive examinations, for, by the nature of the selective process, failure rather than success is not infrequently the norm. It has been suggested, too, that even success in examinations may reward conformity of a kind which rarely characterises dynamic leaders and enterprising managers. In terms of the direct contribution of examinations to socio-economic development, doubts are now current about the use of traditional examinations to predict academic success and the relationship between test performance and subsequent work performance. In defence of examinations it is argued that all too often they are used for purposes for which they were not designed and for which they are unsuited: if tests of attainment are used to determine potential or if a single test is employed as an index of standard, then it might give cause for concern but not surprise if forecasts are inaccurate. In the misuse of examinations lies the origin of much of the criticism levelled against them.

Despite objections and criticism which are more or less well founded and based on arguments ranging from question of principle to points of detail, public examinations are today more influential than ever and are likely to remain so for some years. This being so, the problems which

must be resolved relate to the development of the best examination techniques and the most efficient examining bodies, serving both the demands of the educational system and the needs of society.

Much of the burden of selection has been thrown on to the schools and colleges. In many countries, where increasing number of young people are seeking entry to a limited number of jobs and education places, it is in the schools that there occurs much of the initial sifting process. It may well be questioned whether the school is the appropriate institution to carry this major social responsibility. It can be argued that greater freedom of educational development might result from greater separation of the school from the selection process. In some countries at present schools carry the responsibility for implementing the selection procedure while exercising limited influence over the actions of the examining authorities. Some educationists believe that only a radical restructuring of examinations systems can provide a solution to the problems: more internal accreditation by teachers and the development of improved tests of ability and aptitude rather than factual recall are areas now being investigated and tried in a number of countries. Less conventional suggestions for examination reform include "examination weeks", with tests following upon one-week intensive courses; selection by lottery from among all qualified candidates for limited opportunities; and selection by quota from among specified groups who might otherwise not compete on equal terms. The fact that these radical suggestions have been put forward made serves to highlight present deficiencies in examining and may indicate approaches which could lead to practical supplements and alternatives to the existing system. While these suggestions relate primarily to the school system, reconsideration could also be of value in other areas. For example, the procedures for selection and qualification in the professions of high prestige might be restructured in order to allow for an individual to progress from one level to the next; the concept of the "all-through" profession can only be implemented with the aid of revised selection and testing methods.

Although they may exert some influence on the reform of educational practice and may be used consciously to expedite the implementation of new educational policies, the prime functions of public examinations are to select and to qualify. Selection procedures of every kind imply competition and it can be argued that the adjustment of its students to the competitive society is a legitimate function of the schools. The premium on success and the penalty for failure in most countries, however, are such that the pressures of competition can easily distort the educative functions of schools and higher institutions. Where examinations are designed to qualify, to certify that a certain standard has been reached, the pressures are somewhat reduced, the competition approaching more nearly that of Alice's caucus race where "Everybody has won, and all must have prizes."

Sight should not be lost of other functions of examining. Examinations may be used as a basis for individual guidance; they may qualify rather than exclude; they may provide motivation and stimulus; they frequently serve as a neutral and unbiased arbiter acceptable to public opinion where other means would be open to misgiving; they may be a means for implementing official educational policy; and they act as a link between existing systems of education and the pupils' likely future needs. It behoves the responsible authorities, therefore, to ensure that the tests and examinations which they develop and administer are as appropriate, valid, just, reliable and effective as the current knowledge of techniques will allow. While developments and

improvements in examinations are always desirable to keep abreast of dynamic educational, social and economic circumstances, it is also essential that the pace of examination change should not be so rapid as to prejudice the level of efficiency and acceptance which has been achieved. As Burke observed, all innovation is not necessarily progress. On the other hand, if examination techniques lag behind educational thought and practice, an undesirable restraint will be forced upon teachers and pupils with a consequent widening of the gap between the declared objectives of education and the examination syllabus.

Examinations and the Curriculum

At school level, teaching is frequently geared to examination syllabuses, the objectives of which are not always explained by those responsible for them. Nor is the situation made any easier by the terms in which the educational authorities couch the objectives of the curriculum. Examiners receive little help in designing syllabuses and tests related to curriculum objectives when these are given in forms such as: "To prepare students for democratic citizenship", "To train the young generation for effective participation in social and political activities," or "To inculcate a sense of the dignity of labour." Here again, examinations may suffer criticism which might be directed more justly at those who make difficult the construction of appropriate examinations. Given the choice between teaching towards general, and possibly ambiguous, objectives and precise examination syllabuses it is not surprising that most teachers, and especially inexperienced and poorly qualified teachers, use the examination syllabus as a teaching syllabus. Their employers and the pupils' parents demand results; the teacher attempts to meet this requirement.

The assumption that education authorities, teachers, parents and pupils have the same educational objectives has often proved false. Herein lies one source of the disillusion when the schools and other institutions fail to lead their pupils to the varying goals assumed to be desirable by the different groups: the good citizen expected by the Government, the fully-developed individual hoped for by the teacher, the trainable manpower unit desired by the employer, the respectful yet better-educated and prosperous offspring desired by the parent, and the successful job-seeker demanded by the pupil himself. While the very real difficulties should not be minimised, the need seems to be established for educational objectives to take into account more realistically the varied hopes and expectations of controlling authorities, parents and students. On this basis could be built improved forms of examination, oriented towards an interpretation of each individual's capacity rather than a measurement of certain attributes predominantly in the cognitive domain. While educational objectives spread widely across all three domains, cognitive, affective and psychomotor, examinations tend to concentrate on what is examinable and easily measured; hence the dominance of the cognitive domain in examinations; hence in large measure the concentration of teachers on teaching for factual recall.

The locus of responsibility for the development of curricula and associated examination syllabuses varies among countries. A common pattern is for government authorities to prepare curricula, frequently seeking some measure of participation by teachers, while one or more other government departments or external bodies assume responsibility for the examinations. In some cases the same office performs both functions. A time lag is inevitable between the publication of a new course and its

implementation in the schools: suitable materials have to be prepared and distributed, teachers introduced to the new course and appropriate tests devised. Where other agencies do not produce curricula, this task may devolve on the examining body, which must advise its clients about the coverage and nature of its proposed examinations.

Teachers and teachers' organisations often express concern at the continuing constraints on curriculum change imposed by traditional examining systems. As a body of experience and responsibility builds up, it has been found desirable in some countries to locate the ultimate control of school examinations with the teachers. Teachers' organisations often appear to be an obvious point of reference to this end. This said, however, a wide range of consequential problems arise. Alternatives to large-scale systems of external examining are not without their disadvantages. Innovations such as continuous assessment, cumulative records, student profiles, dissertations and other possibilities have shown in recent years that teacher-controlled assessment may not free the school and the curriculum to the extent anticipated. Adverse effects on teacher-student relationships have been noted, while teachers may also be exposed to accusations of making unjustified subjective decisions. Nevertheless, it is incontrovertible that since teachers prepare pupils for examinations and frequently act as administering agents for the examining authorities, they should play a major role in curriculum development and examination construction. University teachers, too, have a contribution to make, over and above their traditional function as teachers of pupils who have completed the second major stage of the educational process.

Examining provides some measure of evaluation of the curriculum and the quality of the teaching. This information is useful both to complete an accurate assessment of each candidate and to form the basis of further improvements in curricula and teaching standards. Little work, however, appears to have been carried out in this area in order to ensure that this is done most efficiently. Many examinations take place at the end of the course, so limiting the possibilities of feed-back to pupils or teachers. Few countries have yet linked their examinations to guidance and counselling. All too little is known of the effect on a candidate's performance of extraneous factors such as environment, motivation, anxiety or teaching quality.

If examinations are to be related more closely to the aims of education and accepted generally as reliable and valid indicators, several areas seem to require extensive investigation in depth. These include means by which the public at large may be better informed of the functions and possibilities of examinations; the devising of a wider range of more accurate examining instruments for specific purposes without increasing unduly the burden on candidates; and the adaptation of examinations to meet the needs of new educational developments (for example, in the context of lifelong education) and new types of students (for example, mature persons following in-servie or correspondence courses).

Illogical thinking can easily lead to the assumption that education is necessarily good and examinations necessarily bad. Each, however, may be good or bad. Examinations and the teaching-learning process are intimately related as parts of the educational system, so that in many ways each is a function of the other. The social aims of education in most Commonwealth countries today are likely to be served best by a continuing and discriminating search for the most equitable, accurate and acceptable combination of tests and examinations necessary to identify the few destined for further educational advancement and at the same time reinforce the self-esteem of the many for whom the course is terminal, by providing useful information about their achievements and capabilities.

II. TRENDS AND DEVELOPMENTS IN EXAMINATION TECHNIQUES

A Survey of Needs and Approaches

More than one commentator on examinations has expressed the hope that perfection would never be attained. Imperfect examinations, it has been suggested, allow the worst examination failures to retain a modicum of self-respect because it is possible to blame lack of success on the imperfection of the instrument, whereas failure in perfect examinations could be interpreted only as an indication of personal inadequacy. Ten years ago one examination board secretary wrote, "That will be a sorry day for human initiative and personal aspirations on which there is announced the examination which shall be completely valid, the perfect predictor of each individual's ineluctable future."* That day still lies far in the future. Nevertheless, the development of markedly better means of testing and measurement than those available today would provide improved indicators for individuals and educators while still falling short of perfection. A realistic and reasonably accurate assessment of achievement and potential can lead to a recognition of attainable goals in life. In this way good examinations can contribute both to individual satisfaction and national development.

Tests of attainment, especially in certain prescribed areas, have reached a generally acceptable level of validity and reliability. A range of approaches, varying in their objectivity, give results at an acceptable level of accuracy. Similarly, diagnostic tests validated in particular settings have become useful aids to teaching and learning. Many other types of testing, however, are less perfect, particularly those intended to provide information about aptitude and likely future performance. Testing in domains other than the cognitive remains largely undeveloped. Tests in spoken language and practical skills often form only a small proportion of the overall examination because of the difficulty of ensuring their accuracy. The imperfection of the single examination at the conclusion of a course is well known.

To meet the criticisms, new approaches and new forms of examination are being developed. Increased objectivity, a move towards testing over a period of time, the development of batteries of associated tests of different kinds, a closer relationship between the declared objectives of the syllabus and the content and form of the examination, the reduction of the influence of chance and other extraneous factors, all have become major preoccupations of examinations research and development in recent years.

Each testing technique has its own advantages and usefulness and it is the duty of an examining body constantly to review procedures best adapted to each curricular goal. An examining body would perhaps abdicate its responsibility if it believed that its duty was only to examine, without reference to the wider context of educational change. Consideration should be given to all the requirements of the various objectives of the curriculum. The tests produced by examining bodies, therefore, might on occasion range beyond the examination syllabuses in their present form. The close link between tests and the objectives of teaching should be emphasised. Syllabuses should set out the kind of goals they expect teaching to achieve and examinations should then be tailored to these goals.

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* J.A. Petch. G.C.E. and Degree, Part 2, OP.14, Manchester, Joint Matriculation Board, September 1963, p. 119.

The fact that large numbers of candidates who graduate from schools do not gain admission to higher institutions makes it necessary for educational institutions to emphasise the terminal aspects of education. Examining bodies should seek to devise a range of instruments for meeting the needs of both terminal and continuing candidates.

Some Specific Problem Areas

Problems arise from the need to improve examining instruments related to existing curricula, syllabuses and needs and also from the need to develop new examinations in association with new educational content and method. Unless constant care is exercised, educational desirability may be subordinated to administrative convenience, those aspects of a syllabus being examined which it is possible to examine rather than those which educational criteria indicate should be examined. For this reason the declared objectives of curricula may not be examined effectively. It must be recognised, however, that educational principles must be reconciled with administrative possibilities and financial resources in order to achieve the best compromise in the prevailing circumstances.

Problem areas related to existing syllabuses include the examining of spoken language and practical science as well as the inclusion of an element of choice in examinations. The problem of developing "culture fair" tests which do not discriminate against disadvantaged candidates presents particularly acute and pressing difficulties. New approaches to education, such as the large-scale introduction of pre-vocational subjects in Sri Lanka or of technical subjects in Singapore, call for the creation of new means for measurement and prediction. Perhaps a whole new philosophy of examining is needed.

Beyond the immediate problems relating to the form of examinations lies the complex area of public opinion, educational respectability and examination credibility. When attempting to introduce a radically revised syllabus, educational policy makers encounter immediate suspicion on the part of teachers, pupils and parents who view innovation as a tampering with recognised material, values and standards. The need to adjust to new teaching practices and new syllabus content is seen by teachers not infrequently as an unnecessary burden.

It is always easier to add to the curriculum than to prune it. Innovations without deletion can lead to overburdened syllabuses which mean that examinations can cover the field only patchily. This in turn may lead to pupils covering an unbalanced series of items from the overall syllabus.

The introduction of new curricula is often justified on the grounds of increased relevance to current needs and a move away from the academic curriculum. Even if it is recognised that the "academic" curriculum is in fact effective vocational training for the professional men, administrators and clerks whom employers have seen as the prime justification for the existence of schools, it remains unproved that the academic curriculum is basically responsible for the inculcation of that distaste for technical and manual occupations which has caused so much concern to governments over the last century. The solution may well lie not only in more "relevant" curricula and examinations but in a more effective integration of the educational process with national needs and national development, to the end of ensuring that those who engage in technical and manual occupations receive returns - financial and in terms of status - which enable them to enjoy a similar quality of life to those engaged in "white collar" pursuits.

Even when public opinion and the teaching profession have been won over to the acceptance of new forms and content of education, there remains the problem of devising suitable examining procedures, educationally valid and administratively possible. The difficulty of standardising traditional examination papers in which there are optional questions, for example, may be illustrated by the fact that if candidates are asked to choose four out of nine questions on each of two papers in a subject, nearly 16,000 question combinations are possible. In this case, since each candidate selects his individual set of questions to answer, it is inevitable that the choice of questions will vary among candidates, even though they are sitting what is nominally the same examination. Yet if choice is eliminated it seems necessary for the examination to cover the whole syllabus and to introduce a degree of compulsion which has been avoided in the past. The need seems to be for the creation of a revised form of examination, probably including as one element a series of short, objective-type questions.

Objective-type examinations may escape some of the difficulties associated with the subjective essay-type questions but at their present stage of development they restrict the nature of the testing possible. These examinations, like essays, cannot yet cover all aspects of all subjects currently taught on a wide scale, while little is yet known of the "backwash" effects of such examinations on the teaching-learning process in schools. In the light of current knowledge, however, it appears that both traditional and newer types of question can play a useful part in a complete examination.

The difficulties presented by large and increasing numbers of candidates, often dispersed over wide geographical areas, affect in particular the administration of oral and practical tests. That orals and practicals are difficult to validate and standardise is well known; that it is desirable to examine in this way for some purposes at some levels is generally accepted. As their cost approaches the prohibitive a point is reached at which educational and administrative interests may clash.

Large-scale examining necessarily involves the use of large numbers of teachers, with possible problems of security and competence. Such participation by teachers may expose them to severe pressures from parents, pupils and inspectorate.

Further problems arise from the use of examinations for more than one purpose. Selection tests for the few often serve as terminal examinations for the many; as predictors, such examinations are rarely efficient; as measures of attainment they record only fractional information about the candidate upon which potential employers can base their judgment. Often, too, an examination which is terminal in the context of the formal educational system also acts as the first selection test for entry into employment and may be a far from perfect instrument for this purpose.

The problems associated with examination techniques are multifarious and persistent. The search for relevance, validity, reliability and objectivity continues. Here the contribution of carefully directed research and evaluation is crucial, so that examinations may be developed to meet the needs of the candidates and the nation rather than training candidates to meet the demands of inappropriate testing procedures.

Some Examples of New Approaches

The quest for suitable examining techniques has led beyond simple improvements of existing practices into new approaches and new forms of examinations more closely tailored to the ends which they are supplied to serve.

One area in which further development could be of much value is in informal tests for classroom use. Every teacher in the course of his career will prepare, administer and mark a large number of tests. By them he makes judgments on his pupils and receives feedback on the effectiveness of his teaching. If teachers can be helped to acquire the techniques needed to build and evaluate better informal tests their value could be reinforced and their contribution to continuous assessment enhanced. In some circumstances these tests might be developed into a co-ordinated sequence of the type known as "continuous achievement monitoring". These tests might be extended to include formal assignments or project work. There is some risk, however, that such an extended coverage might over-formalise a system which many competent teachers employ already.

The value of self-evaluation and peer evaluation does not seem to have been fully appreciated and further development in this area would be useful. Care must be taken, however, that these techniques do not lead to an excessively competitive and negative reaction, self-derogatory and critical rather than positive and appreciative. As education is likely to move increasingly in the direction of informal and individual learning, self-evaluation will acquire an increasing importance so that improvements in this technique will be of much practical utility.

The constraints of university selectors on the curriculum and examination process are widely recognised. Several notable developments have been designed to meet this problem. The International Baccalaureate provides a flexible syllabus leading to an examination which is accepted by university authorities in many countries as qualifying the successful candidate for entry. Based on a range of subjects examined by a variety of means, the International Baccalaureate is intended to demonstrate achievement as well as potential. Recognising the consequences of using a test of attainment as the main predictor, authorities in a number of Commonwealth countries, including Australia, Britain and Canada, have experimented with scholastic aptitude tests. Since these do not relate closely to any particular curriculum they help to free the teacher and his pupils from the strict control of the examination syllabus. More use could be made of aptitude tests in addition to achievement tests. This approach might help to lower the undue emphasis now being placed on achievement testing. There is need to reduce the stress of examinations and the addition of aptitude thests might help alleviate of the problems. Formal assignments or project work, where a student is given a reasonable period of time to accomplish a task, might help to give students more interest and probably more insight into what they produce and may be of considerable educational benefit to the student.

Numerous techniques are being developed to cater for the detailed needs of new forms of testing. Among such techniques there may be cited the building of item banks or question libraries as resource centres from which proved material may be drawn to construct tests appropriate in form and content for the objectives decided upon. Efficient tests of this type would measure agreed objectives and yield comparable results on an achievement scale.

The objective test format has been employed in the search for unorthodox evaluation approaches which are designed to emphasize the point that many problem situations have more than one acceptable solution; in contradistinction to the one-acceptable-solution idea implicit in traditional multiple-choice tests. In one such approach, the student is required to respond to questions for which several correct options are provided. The differing options to each question reflect differing interpretations of the problem situation. In another approach, the choice is between several correct options that reflect differing levels of cognitive functioning on the hierarchy postulated in Bloom's Taxonomy of Educational Objectives - Cognitive Domain. In yet another, termed "probabilistic testing", the student is given the freedom to assign probabilities (in form of percentages to the different options according to his judgment of the extent to which each option represents a reasonable answer to the question posed.

In addition to the above, investigations involving various cognitive preference tests have been and are being conducted in attempts to find out whether low and high student achievers have some stable idiosyncratic consistencies in their information-processing strategies, which could enable their early identification for purposes of instituting instructional strategies tailored to their varying learning styles. All these new approaches, even if they are refined to the point of being very reliable and valid, cannot be regarded as panaceas. But they are welcome additions to traditional evaluation instruments in the continuing search for ways of improving the educational process through improved evaluation techniques.

While progress has undoubtedly been made in the devising of better methods of testing and measurement, certain areas still give rise to concern and call for further action. Among these there may be included the development of non-verbal and other tests designed to reduce the disadvantage of candidates being examined in languages other than their mother tongue or candidates with differing cultural backgrounds; the continuing search for more efficient predictors; the improvement of testing procedures for spoken language and practical skills; methods of examining private candidates, non-institutional candidates and mature candidates; the determination of the best forms in which to present results to those who need to use them; the role of teachers and teachers' organisations in examination development and the best means of ensuring that all teachers become familiar with basic examination techniques during their training; and the most suitable means for the initiation and control of research into new examination techniques.

Research and Evaluation in Examination Development

The search for more efficient and less constraining forms of testing benefits from being undertaken systematically. Needs must be identified and problems thrown into relief before progress becomes possible. Once pilot projects are planned, provision must be made for both ongoing monitoring (formative research) and final evaluation (summative research) if the full benefits of the experiment are to be derived and passed on to the potential consumers. Research, which may be valuable though small-scale in breadth and time, is indispensible to the effective operation of any system of testing or measurement.

Although much of the work of researchers related to examination development tends to be concentrated on the identification of improved techniques and the construction of tests and models, researchers cannot avoid the wider questions in the background. Examinations must be developed

in the context of the education system and the existing socio-economic structure. Since the background is essentially dynamic, ongoing research must continually reappraise current testing instruments. Cultural and psychological influences on candidates must not be neglected in the course of research and evaluation.

A variety of problems associated with public examinations may be brought closer to solution through research. A wide range of studies is needed to understand the adequacy of each examination, the teaching which led the pupil to it, the quality of his school experiences and a host of other variables which may be more or less relevant to the performance of the candidate. The first step is to identify the important problems and then plan and carry out a systematic programme of research. Research is needed at every stage of the examination process from the planning of the examination syllabus, the preparation and production of the questions, the marking, the grading and then the establishment of the relationship of the published grades to other aspects of education. A strong case can be made for the introduction of newer methods of assessment as supplements to traditional examinations; methods such as continuous assessment, comprehensive achievement monitoring (e.g. periodic testing), self-evaluation, item banking of common subject areas, and so on. Research can assess the effectiveness of these different methods and can also help to reveal the answers to more traditional problems such as the consistency of markers, the validity of specific examinations and the reliability of criteria against which the examinations are judged. It has been suggested that some selection problems might better be solved by lottery, owing to the abundance of qualified candidates for a limited number of positions. A lottery is an admission of the inability of the examiners to measure with sufficient precision the relevant attributes of both the candidate and the training course (or job) for which the candidate is being selected. Ideally, therefore, selection problems are better solved by gathering more information about the candidates, the predictors and the criteria.

When a choice of questions is allowed in an essay examination, research is essential to ensure that the questions are equivalent in all of their important qualities; otherwise the candidates will be taking what are effectively different examinations.

Another important problem in education is to identify the significant domains of achievement. It is eighteen years since the first volume of the Taxonomy of Educational Objectives was put forward as an approximate map of achievement. It may be that some of the areas in the taxonomy are unnecessary, while others need to be included; research can help to provide the answers.

It might appear unfortunate that many research studies are reported in precise technical terms which, although scientifically accurate and of professional quality, are not readily understood by the layman. Research reporters should recognize that their findings may be intended for more than one level of readership and that some popular summary of the main findings may be the most effective way of reporting to most readers, although the need for the precise, scientific report remains paramount.

Despite the disadvantages inherent in the situation where the same body acts as defendant and judge, on balance it seems appropriate for examining bodies to oversee the research related to their own activities because only the boards have both the data and the experience necessary for the tasks. The research team, however, might usefully include individuals

from external institutions. More basic research could probably best be undertaken by external bodies. It may be noted in this connection that not all research students following postgraduate courses can be regarded as sources of additional manpower for this purpose since their courses may be essentially a training in the use of research methodologies, precluding their engagement in the full practice of research.

In terms of cost, research and evaluation need not absorb a high proportion of overall expenditure on the administration of examinations. In the context of overall expenditure on formal education its costs will be miniscule, certainly in proportion to the effects which examinations presently exert over education systems.

In conclusion, it appears two types of research may be required. First, the "systems maintenance" type of research which is a continuing process to prepare and improve upon existing procedures and instruments throughout the examination cycle. The second may be called evaluative: the type of research aimed at discovering the effects of examinations upon the full range of social, educational, economic and political factors upon which they impinge. Efforts should be made to plan a comprehensive long range programme of research within the ambit of examining bodies on the one hand and among examining bodies in the Commonwealth on the other hand so that a comprehensive body of knowledge can be developed about the examination process.

III. THE ROLE, FUNCTION AND ORGANISATION OF EXAMING BODIES

Review of Developments to Date

Although certain elements of nationalism underlay the formulation of examinations councils in newly independent countries, the main reasons for their establishment could be said with justice to derive from clear educational considerations. Examinations exercise a considerable influence on the form and content of school curricula and teaching methods, so that if countries are effectively to control their educational systems it seems inevitable that the control of examination syllabuses and examinations themselves must rest firmly in the hands of locally-based authorities. Some countries have decided that the importance of examinations is such that responsibility for examinations is best vested in a department of the government, either the Ministry of Education or a fully-controlled Examinations Syndicate. As a further consideration, where examinations are used by universities for initial selection of entrants, the universities not infrequently consider it undesirable if this selection has to be made on the basis of results obtained in examinations controlled extra-territorially.

The establishment of new national or regional examinations councils, however, creates problems of a different kind. Public opinion and pressures have to be taken into consideration when constituting the controlling authority so that the eventual membership is such as to allay fears and ensure acceptance and credibility for the new body. Within the new organisation, professional skills for the administration and processing of examinations are likely to be in short supply, so that a controlled rate of takeover from the existing external authority should be agreed and accepted as necessary to the continuing efficiency of the system.

In the earlier "takeover" stages the local examination board might arrive at a bilateral agreement with overseas bodies whereby local examiners and senior officers could be sent abroad for further training. In the same light, experienced expatriate examiners could also be invited to train local staff. In this respect the need should be recognised to plan for the training of middle level personnel - supporting staff - to assist senior officers. This aspect of training in general has not received adequate attention in planning. Local authorities, too, should take over full responsibility for the printing of question papers and provide adequate accommodation facilities for the security nature of their work. Conditions of service and professional resources, including reference libraries for administrative staff and supporting staff, should be such as to build up a calibre of employees dedicated to the work. Within such an organisation, examining techniques should be adopted that would produce the desired effects of the curriculum.

Public confidence can all too easily be lost, bringing about subsequent problems for the examining body and the schools. One relatively newly formed examinations council, for example, displayed inefficiency and poor public relations in such a manner as to prejudice its future existence. As a result largely of the small scale of its operations and the wide geographical spread of its responsibilities the council had suffered failures in its basic administrative processes. Its failings, however, were also apparent in other areas where over the years security had been breached; results had been published late or inaccurately; teachers had not been involved at the policy-making level; subject panels had been allowed to fall into disuse while at the same time examination syllabuses had

been changed frequently, apparently at the whim of the universities; principal examiners had been appointed from outside the council's area; and inadequate administrative staff had been employed. The deficiencies which have been overcome by the older councils serve to highlight the many problems which have to be anticipated or met when new examining bodies are to be established.

In the case of new examining bodies in developing Commonwealth countries, it cannot be anticipated that the help which has been provided in the past by British boards on a bilateral basis will necessarily continue to be available on the same scale for an indefinite time. A number of the British boards have indicated that while in principle their will to contribute to the development of new examining authorities in other Commonwealth countries continues, they find themselves increasingly overburdened as a result of developments at home and requests from abroad. They might well not be able to meet all future requests. For this, and for other reasons, mutual assistance should be further encouraged among examining bodies in developing countries and a rationally structured programme drawn up in which all can join.

New regional examinations councils continue to be conceived and brought into existence. The Commonwealth Caribbean has recently formed such a council while the South Pacific has been the subject of a recent report, commissioned by the University of the South Pacific, which was discussed by Directors of Education from the area at their meeting in May, 1973. The reasons underlying these developments have much in common, including a lack of relevance to local needs of examination syllabuses devised by overseas authorities and the growing feeling that an operation of such vital concern to the future of these nations should be in their own hands. Delay in assuming full local responsibility is necessary in order to ensure a smooth transition of control. An early start to the process, therefore, appears highly desirable so that each area may become fully responsible for its examination system in the shortest possible time. The fact that a small scale of operations makes a financial deficit inevitable for an extended period seems unimportant in the light of the need to exert local control; in any case, the likely deficit would represent a small fraction of the total expenditure on education.

Not all countries agree on the need for autonomous examining bodies, national or regional. One recently independent country has decided to establish the aims of its school curriculum and complete its programme of curriculum reconstruction before deciding on the form and structure of the appropriate examining body. In other countries the control of examinations falls within the purview of the Ministry of Education. In some cases Ministry control is envisaged as desirable during the period of takeover from overseas examining bodies, after which the formulation of a national examinations council could be reconsidered.

The pattern of institutional development of examining authorities in newly-independent countries reveals the close interplay of political, social and educational factors. The longer-established national and regional councils serving these countries have largely completed their takeover from overseas bodies and are now encountering second order problems. Not least of these is whether the localisation of the content of tests and examinations is enough to give them a genuine relevance to the local situation, or whether a more radical review of their structure and form is necessary. This question is particularly acute where the aims of education have been redirected away from those ends which established examination forms have been developed to meet.

The Role and Organisation of an Examinations Council

No single pattern of examination administration or control has emerged in the Commonwealth. National, regional and international bodies exist and co-exist, operate and cooperate. Control lies variously with Ministries of Education or with separately constituted bodies enjoying different degrees of autonomy and status. The structure and control of examinations councils reflects the political and social context of the area which they serve, so that close comparisons and generalised concepts are equally difficult to achieve when considering possible lines of development. The only features common to all examining bodies would appear to be that they conduct examinations and communicate the results, frequently in the form of individual certificates. No common approach, however, can be determined with regard to the inclusion within the functions of an examinations council of the monitoring and revision of curricula and syllabuses; the review and prescription or recommendation of text books and other material; stipulations regarding the teachers who prepare candidates; or the provision of inservice training for teachers to keep them informed of the examination syllabuses, the aims and objectives of the examinations and developments in examination techniques.

Considerable diversity exists, too, with regard to the range of examinations which an examinations council administers. At one end of the scale are those bodies which are responsible only for certain examinations within the formal sector of education; among these there may be cited the boards which organise the examinations for the General Certificate of Education or the Certificate of Secondary Education in England and Wales. At the other end of the scale stands a body such as the West African Examinations Council which not only administers a wide range of examinations at different levels within the formal educational sector (including both academic and technical examinations) but also organises tests on behalf of the Public Service Commission, other government departments, professional bodies and commercial and industrial organisations. In circumstances where expertise is in short supply, the concentration in one place of responsibility for a large number of public examinations may have advantages which override the very real objections to excessive institutionalising of the examinations process.

Where examinations councils operate throughout a region, specific problems are likely to occur. Changes in governmental fiscal policies affect the funding of the council's operations and the salaries of staff serving in that country, so that careful safeguards must be designed to protect the interests of the council and its international staff. Communications can present difficulties and may occasion high expenditure.

Whatever the difficulties inherent in operating an examinations council, it is crucial for its success that public confidence be maintained in its activities. For this reason the undertaking of effective public relations activities becomes increasingly important. No examinations council can expect to remain immune from criticism when its work relates so closely to the aspirations and self-esteem of so many of the population. The appointment of official public relations officers in order to explain the work of the examining body and educate the public shows a realistic appreciation of current needs. At the same time the senior officers of the council may discover that one of their major functions may consist of enlightening national and public leaders about the functions of their council, and especially about the unavoidable limitations to its operations.

The Administration and Logistics of an Examinations Council

Certain problems of administration have been sketched very briefly above. Regional or international bodies, it has been noted, tend to encounter an additional range of difficulties inherent in their nature. The West African Examinations Council (WAEC), for example, recently celebrated its twenty-first year of operation. One of the oldest regional examinations boards established in developing countries, it is regarded as a model by many other countries or groups of countries now starting their own boards. The WAEC has done a commendable job under difficult circumstances with flexibility and competence. This cannot be taken as implying, however, that new examining boards now coming into operation, can model themselves closely on the WAEC or any other board, seeking to organize on the same lines along which the WAEC has evolved, or assuming that it will be required to carry out a similar range of examinations that make up the current, substantial programme of the WAEC. The administrative structure of the WAEC may not necessarily be the best for other Councils, particularly those which are relatively small or are likely to cater for the needs of a very small number of candidates.

While a region may wish to maintain and expand cooperation with its neighbours, the most effective way to carry out the tasks of examining and certificating achievement and competence may be for a group of countries to establish national councils and link these in some loose form of federation with neighbouring councils. The aim should be to devise the most effective structure to accomplish the task on hand.

New councils might well decide to focus upon a limited number of examinations that they can handle effectively and efficiently, rather than disperse their energies in an attempt to deal with a wide range of activities. External bodies which have traditionally provided examinations to various nations are likely to be able to continue, particularly in the vocational and technical subjects where the content of the subject and the examination are to a large extent free of environmental factors. Resort to such papers might be necessary for new councils. When financial and manpower resources have been built up, experience accumulated and the inevitable early mistakes corrected, then a solid foundation will have been created from which the programme of expansion can be launched.

Staffing is always a problem. When political independence has coincided with the establishment of a new examining council, the most able staff have often been absorbed by government and commerce. In such circumstances, new councils might be well advised to begin with a small staff. Then, as the number of graduates increases and as the most senior government and commercial posts are filled, the councils can reasonably expect to be able to recruit and retain talented men and women. At these initial stages, advisory staff from the Ministries, universities, schools and businesses should be used to the fullest extent. New permanent staff should be recruited in anticipation of calculated needs so that they may be properly trained before they have to work under pressure. It should be borne in mind, however, that as the permanent staff increases more supporting staff are required, and they too need supporting staff. This can lead to a situation where Parkinson's Law can impose an expensive toll upon a new Council with limited resources. The balance between efficiency and overstaffing requires constant vigilance.

The problem of security of examination papers, questions, marking and issue of results will tax the resources of all examination councils to their limits and newer councils would be well advised to bear in mind that security starts from the time an individual is commissioned to produce question papers right through the entire examination process and at least six months after, when perhaps the scripts may be destroyed. Temporary staff, who may be a greater risk than the permanent professional staff, should be isolated from all aspects of the examination process where security is required. The final examination results are often not considered a security problem, but it has occurred on more than one occasion that a member of staff has gained access to official, final results which were completed but not yet released.

Working space is a problem mainly to the extent that adequate room is needed for sorting, handling and storing the great volume of materials that passes through the Council's offices during the year and is retained, pending appeals concerning the results, for perhaps six months or more after the award and publication of results.

The organizational structure of an examination council is a function of many factors and whereas the WAEC was for a very long time organized on a vertical basis, it has since converted to a horizontal arrangement. With the original vertical structure one senior officer would be responsible for the entire process of a particular examination from commissioning of questions, printing, distribution and collection of papers, arranging for the marking of scripts to issue of results. With the current horizontal arrangement, one senior officer is now responsible, for example, for registration of candidates for all examinations, another for the conduct of the examination and another for issue of results. Even though this horizontal structure was expected to reduce costs and to improve efficiency, there is some evidence that it has led to an increase in cost. It is, however, too early yet to say whether or not it has significantly improved efficiency. Furthermore, although the advantages of specialization were also held out as the major benefits of this arrangement, enlightened management practices have necessitated the rotation of officers to different jobs from time to time so that broad experience is gained and so that highly trained staff are not discouraged by a monotonous repetition of the same operation.

Data processing for a small council is probably best done by an outside bureau, either government or commercial, since most councils are otherwise likely to pay a high price for under-using the computer time of their own expensive installation. It should not be overlooked that the council's research staff can benefit greatly by having access to data-processing machinery.

Space for conducting examinations for the non-institutional or private candidate is a problem in West Africa although this may not be so in other regions where schools and assembly halls might be able to accommodate all candidates. In countries like Nigeria, however, where the numbers of non-institutional or private candidates at the GCE 'O-Level' by far exceed school candidates, accommodation and related problems are particularly acute. The West African Examinations Council accepts its obligation to allow such candidates who have not had the opportunity of formal secondary education to try to gain certification outside the school system. Though this problem may not arise in their areas at present, new examinations councils might well anticipate it.

If some of the proposed supplementary methods of assessment, such as course work, self assessment or peer assessment, are adopted, other problems of security and public confidence might arise. In some countries the collective judgment of peers and others may be acceptable for describing the accomplishments of individuals. Ine one country, however, it has been found necessary to call out the army to help deliver the examination papers, lock the papers in the police station overnight and station a policeman at the examination hall in order to avoid possible breaches of security. The need for such rigid precautions arises from the high premium that is placed on a school certificate, particularly in countries where such certification is the only means by which the gateway to future progress and prosperity might be attained. Public and governmental expectations of what should constitute security and what is expected of examinations all go to play a very important role in what form security precautions should take. Since selection by merit is generally considered to be preferable to patronage, some system of security seems to be one of the prices that must be paid to ensure the objectivity of a programme by which an external agency undertakes to measure achievement and certify its results.

Staffing and training

Public examining demands expertise and professionalism on the part of the administrators, examiners and examination board staff. These qualities may come in part as a result of experience - which is, in effect, informal in-service training - but should also be inculcated by carefully compiled programmes of training. The permanent staff of an examinations council, for example, need to be trained in the techniques of educational measurement, curriculum development and business management. Temporary staff, and in particular chief examiners and markers, also need training, despite the undoubtedly high costs involved in training these groups which have a considerable wastage rate. Among other temporary staff, the needs of supervisors and invigilators should not be neglected; councils rely on them for the efficient conduct of their examinations yet appoint them frequently on minimal evidence of competence, with uneven results.

A newly established examinations council can usefully look to longer established bodies for its initial key personnel through a series of secondments. Concurrently its own staff, professional and executive, should undertake attachments and study tours to the older bodies. The seconded staff can supplement these arrangements by conducting in-service training programmes. In this way expertise can be developed quickly using the comparative experience of one or more existing councils. Many aid agencies in the past have shown their willingness to assist with such training programmes. Both governments and foundations have been of material help, while international agencies such as Unesco have also participated in a more limited manner. The recently established Commonwealth Fund for Technical Co-operation could provide an additional useful source of assistance, particularly in those circumstances where examining bodies in developing countries wished to benefit by each others' experience.

The duties and responsibilities of examinations councils compare with those of major business and industrial concerns, yet their staff and salary structure rarely reflects this. Rather are their terms conditioned by those pertaining in the public service (and not every country has adopted the system of one Commonwealth member where the senior civil servant within a Ministry draws a salary three times that of the Minister!). If top quality staff at all levels are to be attracted and retained they should be rewarded in terms

of salary, training opportunities, a promotional structure and, upon occasion, public recognition of their service to the nation.

A matter of particular concern is the training of examiners. These are not permanent employees of examining boards yet upon them depends much of a board's reputation. No criteria exist by which potentially good examiners can be identified, so that training for this group is indispensible if the best interests of the candidates and the education system are to be served. Chief examiners and setters of examination questions, too, require specific training. The fact that an individual has served efficiently at the level of examiner should not be assumed to imply that he will necessarily perform as effectively in the higher posts which call for a different range of attributes and abilities.

The whole area of training offers expanding opportunities for mutual assistance among examining authorities. The first need, therefore, is for information to be collected, collated and distributed indicating the range of training facilities available in each examinations council. Regional meetings and workshops make it possible for more staff to benefit from comparative experience. Study and Research Fellowships could give form to attachments and exchange. Consideration might usefully be given to the concept of a Commonwealth standing conference on public examinations meeting at intervals to discuss matters of general concern and to devise solutions to specific problems and serviced by a small continuation group. Without seeking to impose conformity to a single pattern on all member countries, such a permanent point of reference could provide very valuable assistance.

The Contribution of a Research Unit to the Effective Operation of an Examinations Council

The essential purpose of a research unit is to help to improve the efficiency of the organisation which sponsors its activities. Experience in a number of countries has demonstrated that this objective is usually best achieved when the research unit is constituted as an integral part of the examinations council.

The primary function of a research unit, then, is to provide the examining body with sufficient information to make it possible for decisions to be taken with regard to amending and improving existing practices. Research with short-term implications is likely to include ongoing assessments of the reliability and validity of current examinations and the devising and trials of better tests. The research unit should also act as a centre for consultation and advice for those engaged in the administrative and other departments of the council as well as to the committees and working parties through which the council functions. In addition, the research unit should devote some of its resources to activities related to the longer term operations of the council. A research unit should be able to take the initiative in defining the need for some projects and should not merely respond to requests and instructions. Its work, however, should be undertaken always as a service to its parent body. The research unit should not seek to have any policy-making function, this remaining the prerogative of the controlling authority of the examining body.

The research unit can make a particular contribution by conducting continuing evaluations of the effectiveness of the council's operation and of the curricula on which the examinations are based. In England, for example, where a number of examining bodies offer similar examinations, a marked drop

in the number of candidates applying to one board and a corresponding rise in applications to another may provide a crude indication of a fault or inconsistency, or of public disenchantment. Where only one examining body exists such evidence does not appear, which reinforces the need for the council to keep abreast of public opinion and make positive efforts to provide full information about its activities.

Not all examining councils at present have set up research units although the establishment and maintenance of an effective research unit need not be an unduly expensive proposition. As a proportion of the total expenditure of an examinations council it may indeed be very modest, perhaps in the region of one or two per cent. This is a small price to pay for an operation which can affect directly the level of efficiency of the examinations system, and, through that system, the education system at large. The effectiveness of a research unit however, depends on an intelligent and flexible deployment of staff so that the projects upon which they are engaged are those of most practical relevance to the functioning of the council.

Future Developments and Examinations Councils

Patterns of education and employment are changing more rapidly today than ever before. Less formal and less institutionalised education appears to be the trend for the coming decade. With this there will be coupled the concept of lifelong learning, recurrent education, retraining and upgrading. Increased mobility of labour is likely to call for internationally recognisable qualifications and standards. Examinations councils cannot stand aside from the mainstream of development. Realism requires that they should accept that their role is likely to alter very considerably, involving basic reorganisation and restructuring to meet the evolving needs.

The essential question for the future seems to be whether there will be more examinations or fewer, carrying greater prestige or less. It may be that the question is answered differently in different areas, although the increasing interchange of people among countries and the increasing interdependence of groups of countries point in the direction of agreements between countries on the means of recording academic and technical proficiency and of assessing potential.

Examinations exist essentially to serve the needs of the public. With all their imperfections, externally-controlled examinations still provide at present the most generally acceptable means of assessment and of determining the selection for a limited number of available opportunities. While they continue to serve these purposes it is essential that they develop examination techniques and administrative structures suited to current needs and that they remain responsive to the need for change.

Among the areas of future activity, that of establishing equivalences among examinations appears likely to assume increasing importance. Although the percentage of those qualifying in any examination who will need to use it internationally is likely to decrease, the absolute numbers will certainly increase. Political factors, professional self-defence and other considerations introduce an undoubted sensitivity into the whole question of equivalences but the issue cannot be avoided. Perhaps new tests or methods of assuring comparability will have to be developed by the examinations councils. It may be that a separate examination will have to be designed, possibly using the International Baccalaureate as a model, for those individuals requiring an internationally valid qualification.

On the other hand, unnecessary standardisation among examinations, especially on an international level,can lead to an academic imperialism which could easily prove more stultifying and deleterious than the better known political and economic imperialisms. While examinations and examinations councils continue to exist - and the realities of the situation seem to indicate that little decrease can be anticipated in many countries in the foreseeable future - their major function will consist in achieving a recognised currency for their products while limiting to a minimum any undesirable constraints on programmes of education and training.

IV. COMMONWEALTH CO-OPERATION IN THE FIELD OF EXAMINATIONS

The area of public examinations offers singular opportunities for functional co-operation in the Commonwealth. From the search to resolve common problems by mutual endeavour there could emerge new approaches and techniques which would be of benefit to all. This is not to advocate in any way a principle of constraining international conformity but rather to encourage a diversity which would serve the needs of each country or region while acting as a stimulus or guide to others. The geographical spread of the Commonwealth and the many variations among member countries should not preclude useful cooperative effort both in the area of improved examination techniques and of improved examination administration.

In general terms it may be said that public examinations assume a greater importance in the educational systems of Britain and the Commonwealth countries of Africa, Asia and the Caribbean than in some other Commonwealth countries. To some extent their importance has lessened during recent years in Australia, New Zealand and the Commonwealth countries of the Pacific region.

Against this background, Commonwealth co-operation should be designed to:

a) further the reform and development of examinations (including composite examinations) relative to curriculum, educational and social objectives;

b) assist in the ongoing development of examinations organisations; and

c) provide information and guidance on the changing role of examinations in an education system;

d) consider procedures for admission and access to higher education;

e) investigate principles on which examination certificates may be accepted internationally.

Programmes of co-operation should be developed for the short term, medium term and long term, so that early action can be taken to assist with short-term needs while planning continues for controlled change over a longer period. A number of agencies have been actively co-operating for several years, but on a bilateral and largely ad hoc empirical basis. The time is now appropriate for these arrangements to be considered overall and a rational structured programme devised in which all can join.

Means by which Commonwealth co-operation should be effected include:

a) the assembly and distribution of relevant information, where appropriate by the Commonwealth Secretariat;

b) meetings, seminars, workshops and conferences;

c) the provision of training and study opportunities for professional and technical personnel;

d) the promotion of applied research;

e) the provision of technical assistance.

a) Information

The Commonwealth Secretariat offers one of the most appropriate points of reference for information and could act as a functional clearing-house for information with regard to all aspects of examinations. (In this connection, it must be appreciated that information can be disseminated only if it is received, so that if the programme is to be successful, those engaged in the field of examinations must be prepared to supply information both on a regular basis and in response to specific requests.)

Information exchange should be given priority in the development of Commonwealth cooperation in the field of public examinations and should include:

i) Publications

- directories of examinations boards, councils and other bodies; directories of training facilities and of resource personnel available (including those in the developing countries); directories of ongoing and recent research;

- comparative studies of examinations organisation and procedure;

- a regular journal, with original material and abstracts from other publications. (This publication might be made available under the Commonwealth Book Development Programme's proposed Exchange Voucher System.)

ii) Personal contracts, for which the Commonwealth Secretariat could act as a point of reference where individuals are not already known to each other.

iii) Direct exchanges of information between organisations and individuals. This network would grow as a result of the forementioned information activities which would increase mutual awareness of possible sources of information.

b) Meetings

The value of meetings which are organised with a specific educative or training purpose cannot be overestimated since they provide both an immediate return and the opportunity to build an ongoing informal information system and a more formalised work programme. Meetings related to public examinations in the Commonwealth context could usefully include:

i) Commonwealth and regional working parties, specialist workshops and training centres;

ii) A sequential series of regional seminars which might lead to

a) A Commonwealth Conference on Public Examinations;

b) A Commonwealth Standing Conference on Public Examinations

The concept of a Standing Conference merits further consideration in depth in order to define in detail its potential role and contribution. In principle, the idea of a periodic meeting on a Commonwealth basis of those involved in the development and administration of public examinations to discuss major issues of general concern has much to recommend it. In practice, for it to serve successfully the objects for which it is designed, much thought would be necessary to determine the frequency of its meetings, the composition of its members, the nature of its agenda and the precise means by which continuity would be ensured between meetings.

c) Training and Study Opportunities for Professional and Technical Personnel

While some opportunities for training exist for senior researchers and test developers, little provision has yet been made for the initial and further training of professional staff engaged in administration or for supporting staff in either category. To meet these needs, Commonwealth programmes could be established, to include:

i) Links and exchanges
More use could be made of continuing links among examining bodies, providing opportunities for in-service training and mutual assistance.

ii) Training for examiners and other temporary staff
The dependence of examinations bodies on large numbers of professional and supportive staff who are not full-time employees reinforces the need to ensure that they are adequately trained. This implies that a supply of well-trained teachers is available from when examinations councils may make their selection; adequate systems of teacher education, therefore are a basic requirement for good examining. The absence of criteria whereby good examiners can be identified in advance makes their training especially important. Other training needs include provision for introducing newly appointed Chief Examiners and Supervisors to their roles.

iii) Attachments and Short Training Courses
Links, exchanges and attachments have proved of considerable value but leave the individual trainee with no formal recognition of his further education and training. Such recognition would enhance his professional standing and also allow employers to relate his achievement to established staffing and salary structures. The situation might be alleviated by an adaptation of the suggested Commonwealth Diploma in Educational Studies to the needs of examinations staff. This would provide for the accumulation of credits for approved courses and attachments leading to the eventual award of a Commonwealth Diploma in Educational Studies.

iv) Professional Training Courses for Administrators
Courses for administrators leading to qualifications equivalent to those now available to researchers and test developers would both enhance the efficiency of the examinations authority and give recognition to the essential function of the administrator. A pilot programme should be established by an examinations council in conjunction with a university which would provide a course for examinations administrators leading to a qualification such as the M.Ed., the university being responsible for the theoretical component and the examinations council providing the field work component. As a further development of this concept similar joint courses could be devised for teacher educators and others involved in various ways with public examinations.

v) Commonwealth Study Fellowships might be made available to support candidates for jointly organised courses (such as a joint Master of Education degree) who may follow part of their course in a Commonwealth country other than their own.

d) Applied Research in the Field of Public Examinations

While the contribution of existing research is recognised, the need still exists for the promotion of research projects designed to meet the known needs of those responsible for public examinations. In many cases, comparative studies and co-operative research on a regional or Commonwealth basis could be of particular value. Among the areas in which research might be undertaken, following a survey which would clarify and determine the precise issues, there may be included:

i) the effects of examinations and testing on

- the individual
- the education system
- the employment situation
- the society;

ii) improvement in the areas of

- prediction
- guidance
- measurement in the affective domain
- performance testing

iii) the role of testing in the transition from secondary to higher education and in the professions, industry and commerce;

iv) the use of common materials by more than one examining body;

v) means for rationalising the number, nature and length of public examinations both inside and outside the formal educational sector;

vi) means by which controlled change in examinations may be brought about while ensuring continuity in the education and training of each individual.

Research in many of these areas should be undertaken on a collaborative intra-Commonwealth basis. Small international (and, where appropriate, inter-disciplinary) groups in teams of five or six could be designated to work on specific projects with closely defined parameters for predetermined periods of not more than two years. The groups would meet together at the commencement and conclusion of the project, but would work for the period of the project at their home bases, maintaining contact through the project leader. Such a concept would provide the vehicle for the conduct of multi-disciplinary applied research with the opportunity for comparative studies and the consequent setting of the problem against a wider background.

e) Technical assistance

One problem facing examinations authorities in the developing countries is the lack of information regarding likely sources of technical assistance additional to those of long standing. The Commonwealth Secretariat should act as a point of reference and a clearing-house for information regarding likely sources of funds and technical assistance. In particular, efforts should be made to promote further development of the concept of mutual assistance among the member countries of the Commonwealth, using the resources of the Commonwealth Fund for Technical Cooperation where appropriate.

SPEECHES AT THE OPENING CEREMONY

Mr Vincent Chukwuemeka Ike
Registrar
West African Examinations Council

Mr. James Eedle
Commonwealth Secretariat

Lt. Col. P.K. Nkegbe
Commissioner for Education, Culture and Sports
Republic of Ghana

Address

by

Mr. V. Chukwuemeka Ike,
Registrar,
West African Examinations Council.

Commissioner for Education, Sport and Culture, Your Excellencies, Ladies and Gentlemen:

When I was a schoolboy I used to look at my atlas and see the spread of countries round the globe. From that time until very recently I have thought of Australia as being at the other end of the world. As we began to make the arrangements for this Seminar, however, I discovered that there are countries further away from West Africa than Australia. Some of us here today have come from Australia, and some even from beyond Australia, while some like me have had to cover only a short flight of stairs from the second floor of this building to this Conference hall. We represent the developed Commonwealth as well as the developing Commonwealth. We come from big countries and small, we represent all the regions of the Commonwealth, including Europe; the Caribbean; South Asia; South East Asia; the Pacific; East, Central and Southern Africa; and West Africa. Some of the participants are the nominees of Governments or of their organisation - they are the people who tend to be blamed for everything that goes wrong with the educational system. Also here, though, there are selected individuals and others involved in examining at international, regional and national levels. Some of us represent the consumers of examinations - pupils, teachers, parents and employers; some represent the teachers who produce the guinea pigs for the new procedures developed by examinations councils; some of us here, I understand, regard external examinations as an unfortunate and undesirable appendage of education; some of us are university dons, including curriculum or planning experts who from their research centres seek to diagnose the ailments of the public examinations system.

The West African Examinations Council, which I represent, offered to play host to the Seminar and to do so as part of the activities to mark the 21st anniversary of the Council's foundation. In the developing Commonwealth we are described as the largest and the oldest regional examinations council. Having been set up to determine what examinations are in the public interest and to conduct such examinations and award diplomas and certificates on them, there is hardly any level of human endeavour in which our examinations do not feature. We do, however, recognise that age and size are not necessarily synonymous with efficiency or proficiency. We are as well aware that the Council cannot rest satisfied with its established procedures. At 21, we are only just cutting our umbilical cords and emerging into other worlds'. Rather we regard our coming of age as a time for serious self appraisal, conscious of the fact that the public we serve is becoming less gullible than it used to be, and that we owe a great deal to that public.

When we proposed to the Commonwealth Secretariat to conduct a Commonwealth Conference on public examinations it was because we envisaged that such a Conference would be of immense benefit to us as an aid to our reappraisal of our role and our methods. We come to the Seminar to make

whatever humble contribution we can, but more importantly to learn from the experiences of our colleagues in other parts of the Commonwealth whose problems may, or may not, be closely similar to ours. I am sure that even the representatives of the oldest examining boards present here share the attitude that the old have a lot to learn from the young, bearing in mind that no country or organisation can claim to have evolved the ideal system of education. It is by continuous experimentation that we approach the ideal.

We are grateful to the Commonwealth Secretariat for convening this Seminar and to the Commonwealth Fund for Technical Co-operation for providing funds to enable many of the participants to attend. We are grateful to the Government of Ghana for allowing the Seminar to be held in its territory and to you, Commissioner, for accepting to open this formally at extremely short notice. We, the participants, wish to do our best to achieve the purpose of the Seminar and I hope each of us, through sharing in the wealth of experience assembled here, will leave the Seminar wiser and more capable.

Address

by

Mr. J.H. Eedle,
Commonwealth Secretariat.

Commissioner for Education, Sport and Culture, Mr. Chairman, Your Excellencies, Ladies and Gentlemen:

May I first of all apologise for the absence of the Assistant Commonwealth Secretary-General, Dr. James Maraj, who has been prevented by illness from coming here today. He telephoned on Thursday afternoon to apologise and to ask that the meeting should continue in its original form in his absence. We in the Secretariat are most grateful to Mr. Ike, Registrar of the West African Examinations Council, that he has at short notice been able to take over as Chairman of the meeting. I am grateful, too, that Dr. Maraj found it possible to send another member of the Commonwealth Secretariat staff to help out; Miss Elodie Bissessar, for many years the Principal of the Government Training College in Trinidad, will be a valuable asset to us in our work.

We are particularly grateful to the West African Examinations Council that they should have taken the initiative in proposing a planning meeting on public examinations. We are happy, too, that the Government of Ghana was agreeable to the meeting being situated here, the home of the oldest and largest international examining council in the developing countries of the Commonwealth. Nor would the meeting have been possible without funds from the Commonwealth Fund for Technical Co-operation, a multilateral fund into which all Commonwealth Governments pay in order to promote development in the emerging Commonwealth countries. On my own behalf, Sir, may I say how glad I am to be back in Accra where I spent three very happy years indeed. I am always happy to return from time to time and renew my friendships. And so to the substance of the meeting; why are we here and why are we here now?

At the Fifth Commonwealth Education Conference which took place in Canberra just two years ago, considerable concern about the whole nature, form and effects of examinations was expressed and the Commonwealth Secretariat was asked to do something about it. We have not had an opportunity to concentrate in this area until now, when the initiative taken by the WAEC has made it possible for us to enter this field. I think that it is a very interesting comment and an indication of the general concern that nobody who was invited to this meeting refused to come. All the countries, all the individuals who were asked to be here have arrived with the exception of two, whom I am afraid are caught up in an airline strike in India; we hope that they will be here later. The whole question of examinations is a matter of deep concern to Governments and to individuals throughout the Commonwealth, both in the rich countries and the poor countries. As you heard earlier from Mr. Ike, within the Commonwealth we have a population of nearly 900 million and about half of them are under the age of 25; in some of our countries a quarter of the population is under the age of five. Virtually all these people come within the orbit of examinations as candidates, teachers, parents, employers, administrators or government officers. Not infrequently the same individual plays more than one role.

We should bear in mind that many governments are spending up to a quarter of their annual recurrent revenue on formal educational systems in which it is not unusual for half the children to drop out before the end and for only half of the age group to be in the schools in the first place. Not very long ago it was reported that in India one quarter of the budget was spent on children who died before the age of 16. When we talk about education, therefore, we are talking about the effect of a very considerable proportion of a country's wealth. Governments throughout the Commonwealth are under pressure, particularly from parents who see education as a means of giving their children a quality of life that they themselves have not been able to achieve. And yet education, formal education, school education, is giving rise to increasing disillusion. As more people gain more qualifications, the threshold of competence rises; you need a higher education qualification now to obtain a particular sort of job than you did ten years ago, not because the demands of the job have increased, but because more people are available with higher qualifications from whom employers may choose. Investing in your children's education now, therefore, does not give the same returns as it did even ten years ago. We are, I think, subject to what we might call "academic inflation", in that you need more qualifications to buy the same amount of employment. Education is seen by many people as the means to qualify, to get a job, and if there is no job at the end, this can give rise to extremely articulate and intelligent frustration. As we have said in one of our reports on youth and development, education in many countries may open a window on the world while leaving the door firmly shut.

The Heads of Commonwealth Governments at their meeting in 1969 and again in 1971 asked the Commonwealth Secretariat to investigate the whole relationship between education and employment opportunities. We organised a number of regional meetings in Africa, the Caribbean, Asia and the Pacific, Malta and Cyprus. Eventually, last month in Lusaka,we brought together representatives at Ministerial level from all Commonwealth countries. They decided to implement a Commonwealth Youth Programme. In this programme we are thinking of the needs of youth not only in the sense of recreation but also in the sense of preparing young people for the conditions which are likely to obtain in their working life. And I think that here it is very important to remember, Sir, that the children of ten years of age whom we now see around are going to be members of the national work force until the year 2025. We are not talking about an indefinite future, we are talking about children who are already in primary school or, in some cases, who have already failed to find places in primary school. It is their future we are looking at.

We are beginning to realise that education and training alone are not enough, that even technical education or vocational education will not of themselves create employment, that they need to be linked with an integrated development plan, an integrated programme which will prepare people for such employment opportunities as are likely to exist. One of our countries, Sir, it has been said, started a course for sign painters; there are now enough sign painters to put a sign on every tree in the forest, and they don't need that number of sign painters. What we are here for is to see how better forms of selection, testing, measurement and production can be brought to the service of Governments and peoples in order to make the maximum use of the manpower which is available. When we talk about public examinations, we are thinking not only of school examinations, but also of trade testing, of examinations in commerce and industry, of public service commissions, of professional examinations. We are not here in order to conduct a programme of academic research. We do not intend to be a talking-shop but a more strategic planning

meeting. In order to be able to advise governments and other institutions we must seek to define programmes that can be implemented in the context of conditions as they are and not as we would like them to be.

The members of this meeting, Sir, are here in their individual capacities, they are here as professionals and not as government delegates. We hope that one advantage of this will be to inspire perhaps a greater degree of frankness than might be obtained if they had to defend particular policies and situations. The Report of this meeting will not carry the names of those making particular points. We hope this, too, Sir, will encourage frankness in our discussion.

What will happen to the Report when it is completed? We hope that it will not be filed away and forgotten. In accordance with Commonwealth Secretariat practice it will be circulated to all our member governments. It will be laid before the Commonwealth Specialist Conference on Teacher Education which takes place in Nairobi next month and we hope in the near future to begin to implement some of the recommendations. It will also go before the Sixth Commonwealth Education Conference which is to take place in Jamaica in a year's time. I should perhaps stress here that it is not in any way intended that the Secretariat should duplicate the activities of other agencies. We are not the rivals of any other agencies, particularly the United Nations and its specialised agencies, with whom we co-operate very closely and whose observer we are particularly pleased to see here today.

We are indeed glad to be here in association with the 21st Anniversary Celebrations of the WAEC. We hope in the course of our work to demonstrate how international co-operation can supplement and reinforce those aims of self-reliance which characterize not only Ghana but an increasing number of developing countries in the Commonwealth. As I think the Chairman of the National Redemption Council said over the weekend, Sir, "self reliance need not mean isolation". No country today remains unaffected by events and situations beyond its boundaries. No country, I believe, can any longer expect to solve its national problems nationally. I hope, and I know that in this I am speaking for the Commonwealth Secretary-General, that this meeting on a topic of deep concern to all of us anxious for the future health and development of all our members may serve to inspire mutual help and self-help for the benefit of all.

Opening Address

by

Lt. Col. P.K. Nkegbe,
Commissioner for Education, Culture and Sports,
Republic of Ghana.

Mr. Chairman, Distinguished Participants, Ladies and Gentlemen:

It is an honour and a great pleasure to have been invited to deliver the opening address to this Commonwealth Planning Seminar on Public Examinations. On behalf of the Chairman of the National Redemption Council and the Government of Ghana, and on my own behalf, I wish to welcome you all to this important Seminar. It is my sincere hope that your formal deliberations will not only be successful but will also permit of opportunities for informal discussion, which, I believe, is a very valuable concomitant of a seminar such as this. I also hope that you will all enjoy your rather short stay in Ghana, and that you will be able to make fruitful and rewarding contacts in and out of the hall of the Seminar.

I deem it my privileged duty to extend an especial welcome to our distinguished participants who have come from outside Ghana. They are, one and all, persons of outstanding merit in the field of education. I am particularly happy to note that one or two of their number have had a long association with the West African Examinations Council and did play a significant and germinal role in the formative years of the Council. It is indeed a cause for deep satisfaction to me that, in spite of the over-burdened work schedules of our guest participants, they have been able to accept the invitation of the Commonwealth Secretariat to make available to this Seminar the benefit of their rich store of expertise and experience.

I would also like to express my appreciation of what must undoubtedly have been the enormous preparatory work put in by the Commonwealth Secretariat and the West African Examinations Council in making possible this august assembly of educationists. The decision taken by the Commonwealth Secretariat to promote this Seminar and the kind consent of the Commonwealth Fund for Technical Assistance to fund this Seminar - in spite of its exiguous resources, are, to me, further recognition of the potential contribution which the Commonwealth can make in the attempts of member countries to resolve some of the major problems facing up today.

A meeting of this nature, with our Commonwealth colleagues, is important, not only because it provides an excellent opportunity for mutual consultation and co-operation in a field of endeavour which has far-reaching consequences for all countries, but it also helps to promote goodwill, mutual trust and confidence among Commonwealth countries. It is my earnest hope that whatever the varying political and economic patterns that may evolve with time, the Commonwealth link, as a viable dimension of functional utility, co-operation and inter-dependence, will remain as something special. It is also my hope that this link will continue to stand, as an example and as a monument, to all, to the realistic recognition that the best hope for the future of mankind resides in mutual assistance and co-operation across the frontiers of geography, race and persuasion.

I am happy to note that this Seminar represents yet another manifestation of the already existing and fruitful inter-continental dialogue and co-operation between our examining councils here in Africa. I am confident that efforts in this desirable direction will increase to the mutual advantage of all of us.

I do wish to use this occasion to express deep appreciation for the support and assistance which our examining councils have been generously given by sources and agencies outside the Commonwealth. I should like here to thank the United States Agency for International Development, the American Institutes for Research and the Ford Foundation for the assistance which they have given to the building, within our examining councils, of research institutions capable of carrying out large-scale test development and research, and for the support which they have given to projects for the research and development necessary to introduce large-scale objective-testing programmes for manpower selection and for the assessment of educational achievement.

These examples of international co-operation and support in this vital aspect of education as, indeed, in other fields of educational endeavour, reinforce our conviction that with the phenomenal expansion of the educational enterprise and its attendant problems, the burden of research has become so heavy that the path of wisdom lies in the sharing of this burden, on an increasing scale, among countries in the educational common market, for the mutual benefit of all.

In this light, we are particularly happy to welcome this Seminar for the further opportunity it affords for international co-operation in educational research; for the opportunity it affords to educational experts from various countries to meet together to train a lens with a wide angle of vision and critical acuity on pressing educational problems; and for the real promise it holds forth for the development of significant educational change that will bring our systems and content of education into much closer harmony with the demands of today and the socio-economic imperatives that can be expected in the near future.

We, in this country, are currently engaged in a search for educational reforms that will have greater meaning and relevance to our task of national reconstruction. What is happening here on the educational front is a reflection of what is happening concurrently in almost every country in the world. The role which should be played by constant test research and development for the construction, not only of more refined and discriminating instruments of assessment, but, more importantly, of innovative evaluative procedures in support of changes in educational objectives, changes in educational content, and shifts of emphasis in instructional goals and methods, is self-evident and crucial. And the role which administratively effective and research-oriented examining bodies should play in the provision of this kind of support to effect meaningful educational change is of the first and critical importance.

We therefore feel greatly encouraged to note the efforts being made by our examining council to re-organise their administrative structures to achieve optimum efficiency and effectiveness. We also feel a sense of satisfaction to note that even though the load of public examinations everywhere is ever-increasing, the re-organisational efforts of our examining bodies have been producing remarkable dividends. It is our confident hope that they

will continue, in the future, to provide the opportunities for educational development and advance into new areas in response to changing needs, and that their efforts in the direction of community involvement and consultancy activities will continue to register greater impact in the service of education.

The outcome of this Seminar, the objective of which is to prepare the frame-work for a possible sequential series of Commonwealth regional training seminars, should be of inestimable value to the efforts of our examining bodies to become more effective not only in the administration of public examinations, but also in the achievement of educational goals.

This is a Planning Seminar on public examinations; and it is unique in being the first of its kind in Commonwealth educational circles. Its terms of reference pertain to very crucial issues relating to the whole field of public examinations. This Seminar is the first step which, depending to a very great extent on the results of your deliberations here, will not only lead to a comprehensive Commonwealth Conference on Public Examinations, but is capable of having very far-reaching, and even revolutionary, impact on educational change and modernisation. I am confident, Mr. Chairman, that the wealth of experience and expertise at the disposal of this Seminar will be used constructively to make this first step a historic step.

I am informed, Mr. Chairman, that you are all here at this Seminar in a private capacity without "official" constraints. This is as should be. I am confident, therefore, that you are going to face the issues before your honestly and squarely through a free and frank exchange of ideas and experiences. I wish to express my sincere wishes for the success of this Seminar and look forward to hearing about your deliberations.

APPENDICES

SEMINAR ARRANGEMENTS

This Seminar, which was held in Accra from 12 to 16 March 1973, was designed to bring together a small group of experts from all parts of the Commonwealth to determine strategies for further action in the field of Commonwealth countries.

The Seminar was attended by nearly 40 participants, representing more than 20 countries and regional groupings. Also present were observers from four major international bodies with special interest in the field of public examinations.

The initiative for the meeting came from the West African Examinations Council, the oldest and largest international examinations council in the Commonwealth. The Commonwealth Secretariat was particularly glad to be able to join with the Council in organising the Seminar as part of the 21st anniversary celebrations of the Council.

The Seminar was honoured by the presence of Lt. Col. J.K. Nkogbu, Commissioner for Education, Culture and Sports, at the opening ceremony. The full text of his address is included in this report.

The Commonwealth Secretariat wishes to record its gratitude to the Government of the Republic of Ghana who permitted the Seminar to take place in Accra and to the many officers of the West African Examinations Council working under the direction of the Council's Liaison Officer, the Rev. J.E. Ebe-Arthur, whose enthusiasm and hard work enabled the meeting to go forward with maximum efficiency. A particular tribute should be paid to the Registrar of the West African Examinations Council, Mr. V. Chukwuemeka Ike, who took over as Chairman of the Seminar at very short notice and to whose confident control much of the success of the meeting was due.

Finally, the organisers of the Seminar wish to acknowledge the assistance given by the Commonwealth Fund for Technical Co-operation which made the meeting possible.

Appendix 2

PARTICIPANTS

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Mr. A.A.K. Tse, West African Examinations Council
Dr. L.S. Skurnik, West African Examinations Council

Liaison Officer

Mr. J.E. Ebe-Arthur,
West African Examinations Council.

Appendix 3

LIST OF SEMINAR DOCUMENTS

Information

CPPE(73) INF/1	Preliminary information for delegates
INF/2 (Revised)	Revised list of participants (as at 27 February 1973)

General

CPPE(73) GEN/1	Draft agenda
GEN/2	Draft timetable
GEN/3	Preliminary list of documents (as at 9 March 1973)

Working Papers

CPPE(73) WP/1	Outline working paper
WP/2	Suggested allocation of sessions and associated documentation
WP/3	Guide to the documentation

Background Papers

CPPE(73) BP/1	A.D.C. Peterson:	The International Baccalaureate.
BP/2	S.A. Akeju:	The Place of Research and Evaluation in Public Examinations.
BP/3	V.C. Ike:	A Survey of Training Needs related to the Effective Operation of an Examinations Council.
BP/4	L.S. Skurnik:	Item Banking.
BP/5	D.S. Anderson:	The Social Context of Examinations
BP/6	B. Premaratne:	The Examinations Scene in Sri Lanka (Ceylon) with particular reference to the problems connected with the examination of pre-vocational subjects.
BP/7	T.S. Wyatt:	The Development of Regional Examining Bodies.
BP/8	B.P. Kiwanuka:	The Development of the East African Examinations Council
BP/9	Unesco:	Unesco's Activities in the Field of Examinations.
BP/10	G.M. Forrest:	The Contribution of a Research Unit to the Effective Functioning of an Examinations Council.
BP/11	W.C.O.T.P.:	The Actual and Potential Role of Teachers' Organisations in the Development of Examination Techniques and the Administration of Examinations.
BP/12	A. Symonds:	Establishment of the Caribbean Examinations Council.

BP/13	R.O.W. Fletcher:	The Purpose, Scope and Structure of Public Examinations Councils in the Third World Commonwealth.
BP/14	S.M.S. Chari:	Public Examinations and Curriculum.
BP/15	T. Boatin:	The Role of a Regional Examinations Council.
BP/16	C.O. Agbenyega:	Some Aptitude Tests in Anglophone West Africa.
BP/17	J. Deakin:	Trends and Problems.
BP/18	Ng Fook Kah:	The Development of Examination Techniques for Technical Subjects.
BP/19	A.B. Junid:	The Development of an Examination System in Malaysia, with some reference to the Curriculum development of a programme of guidance for schools.
BP/20	L.S. Skurnik:	The Effects of Examinations.
BP/21	B. Somade:	The Role of a Regional Examinations Council.

Background Material

West African Examinations Council. Milestones in the Council's History and The West African Examinations Council Illustrated by Diagrams

Commonwealth Secretariat. Examinations at Secondary Level (1970)

International Baccalaureate Office. General Guide to the International Baccalaureate, Examination Sessions 1974 - 1975 - 1976

Joint Matriculation Board. Occasional Publications

OP29. R. Christopher: The Work of the Joint Matriculation Board (1969)

OP30. Examining in Advanced Level Science Subjects of the G.C.E. (1970)

OP32.	G.M. Forrest, G.A. Smith, M. Helen Brown:	General Studies (Advanced) and Academic Aptitude (1970)
OP34.	G.M. Forrest, G.A. Smith	Standards in Subjects at the Ordinary Level of the G.C.E. June 1971 (1972)

Joint Matriculation Board
(University Entrance Requirements Department) — Overseas Qualifications, 1971

PART II

SELECTED DOCUMENTS

THE AIMS AND EFFECTS OF EXAMINATIONS

Summary of Papers

D.M. McIntosh: Examinations, notes the purpose of examinations and sets out both their strengths and weaknesses. An appeal is made for a sense of proportion to be maintained and it is suggested that a variety of assessment methods be employed to gain a true picture of an individual's ability or attainment. These methods are teachers' assessments, external tests of the objective type and essay type examinations to measure other aspects of ability and achievement not measured by the objective test.

D.S. Anderson: The Social Context of Examinations, places examinations in context and traces their development from the Book of Judges and Imperial China. He finds that defects in examinations lead to an excess of rote learning, distortions in curricula and teaching and psychological distress. Examinations are judged to be out of line with the aims of education and society, but they may be used as instruments of social engineering to redress the balance. A number of radical suggestions are made to highlight the bad effects of examinations and stimulate the reader to consider ways and means of developing an examination system which will be beneficial for education and society as well as for the candidate.

L.S. Skurnik: The Effects of Examinations, lists both good and bad effects of examinations upon pupils, teachers, school systems and nations as a whole. He suggests that the effects of examinations can be dramatic and lasting and argues that many of the criticisms directed at examinations are misdirected since it is the misuse of examination results that is at the heart of the controversy. Examinations are faulted because they are on occasion inadequately constructed, seldom evaluated after the event and are required to serve too many purposes beyond those for which they are intended. Their effectiveness as quality control devices is outlined.

R.O.W. Fletcher: Purpose, Scope and Structure of Public Examinations Councils in the Third World, considers the role and organization of examinations and the organizations that administer them. Examinations are perceived as a significant part of the educational and social environment and should therefore be designed and used in the most constructive ways possible to enhance the dignity of the individual and help fulfill the human ideal of "equality and not identity." There should be a greater cultural identity between the education and social system with the examination system which is employed.

EXAMINATIONS

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Examinations have a determining influence on careers, and accordingly they arouse emotional attitudes: they have been referred to both as "the central nervous system of education" and as "a millstone round the necks of the schools." Such reactions arise partly because examination results are used without sufficient thought to their validity and partly because many examinations are not constructed with clearly defined objectives. Despite the early researches which revealed the extent of the unreliability of examination marks, only recently have steps been taken to produce the improvements which are so necessary in any system of large-scale examining. For example, the pass/fail examination is a weak measuring instrument because all measurements of human ability are approximate and to use an examination to distinguish between a pupil who scores 50 and is awarded a "pass" and another who scores 49 and is awarded a "fail" assumes a degree of accuracy which is beyond the resources of a written examination.

A very large subjective element enters all aspects of examinations. The selection of questions involves the sampling of sections of a syllabus on which the examinee is tested: the sampling depends entirely on the views of the examiner. Pupils have sat examinations in which they have "spotted" certain questions and, accordingly, found the examination easy, whereas others have had the experience in which much of their hard work has gone for naught because the sample has been drawn from areas of the syllabus on which they had not concentrated their attention. A subjective element is also involved in the allocation of marks. For example, a group of teachers or students when given no guidance will award a wide variety of marks to an arithmetic question in which the pupil takes down one figure wrongly but works the sum out correctly: the different marks indicate different value judgements.

Examinations have a wide range of purposes. The following are the most common:

(a) attainment : standards and objectives must be clearly defined and the examinees should be given some indication of the standards which they are expected to attain.

(b) diagnosis : such tests or examinations attempt to find out what the pupil does not know. For example, a diagnostic test in arithmetic may show that a pupil has a specific weakness: many young children have difficulty with zeros and when such weaknesses are revealed by a specially constructed test they can be corrected.

(c) prediction : most of the examinations at the end of secondary school are used to predict the success with which a pupil will engage in a course of higher education. Many such examinations have not been specially constructed for this

'objective, and it is merely assumed that they have this value although investigations have shown that the relationship between success in higher education and secondary shcool examination results is not high.

(d) motivation : the knowledge that a specific standard has to be achieved by a certain time gives purpose to teaching and to learning. Teachers interested in their pupils who are attempting to gain admission to university will strive hard to ensure that the pupils gain the necessary entrance qualifications, and the pupils for their part have a clearly defined goal which channels their energies.

(e) selection : selecting a number of pupils for a particular course of study, where the purpose of the examination is to ensure that pupils who are chosen have the ability and the knowledge which will enable them to undertake a particular further course of study. When a restricted number of candidates have to be selected from a group, it is assumed that the examination can make the fine distinction between the candidates at the border line.

(f) a teaching instrument : too often, once the examination marks are issued, no further work is done on what has been written. On the other hand, examinations or tests of some nature should be a regular feature of classroom work. These need not be formal examinations but tests to check whether the learning experiences created by the teacher have been effective. In all teaching situations, the teachers should have clearly defined objectives. Following the exposure of the taught to a learning experience the teacher must attempt to assess the success with which the objectives have been achieved. The assessment will have two purposes: first, to ensure that the learning experience is effective, and secondly, to gain some insight into the ability and attainments of the taught.

One of the weaknesses of examinations is that they tend to be used for a wide variety of purposes. Examinations at the end of secondary school courses are used for entrance qualifications to a large variety of professions, which select these examinations merely because they are available. It has often been suggested that different professions should set their own examinations, but this would place the schools in an impossible situation whereby they would require to prepare students for a very wide variety of examinations. National external examinations such as the GCE in England and the SCE in Scotland are used for entrance qualifications for many courses in higher education and while they were orginally intended for university entrance they now are used by a multiplicity of institutions providing higher education: it is doubtful whether they can have a high predictive value for all institutions.

An examination should test the objectives of a specified course of study, and these objectives should be clearly defined. In the case of schools, teachers should create the learning experiences which enable pupils to attain the stated objectives and the examination should provide a measure of the effectiveness of the learning experience. The knowledge of facts is essential in any course, but too many examinations rely heavily on memorisation. In an examination on statistics or mathematics pupils are allowed to use mathematical tables, but there seems no good reason why they

should not also be allowed any books which they use in the classroom. The memorisation of a formula is of little importance in life outside the shcool: it is the ability to use the formula which is of real significance.

Objectives have been classified by Bloom in his widely known work "Taxonomy of Educational Objectives"* and it is possible to analyse examinations showing the percentage of each category which have been tested by the examinations. The categories are:

(a) information
(b) understanding
(c) application
(d) analysis
(e) synthesis
(f) evaluation

These are in what is known as a hierarchical order: each category cannot be carried out without skill in the previous categories, for example, understanding is not possible without information and, similarly, application cannot be carried out without information and, similarly, application cannot be carried out without information and understanding.

Too great reliance is often placed on examination marks: as has been indicated the pass/fail examination provides an example of an assumption of the accuracy which it is assumed examinations posses. Much research has been conducted to show the unreliability of examination marks. Pupils sitting similar examinations at intervals often show a degree of unreliability which is difficult to understand. The lack of consistency in examination marks may be due to three factors:

(a) the unreliability of the marking: research has shown that the same examiner can award different marks to the same pupils after an interval of time. In one investigation 14 examiners were asked to re-mark 15 history scripts some 12 to 19 months after the first time, having kept no record of their previous marks. The examiners awarded not only numerical marks but also the verdict of failure or pass or credit. It was found that in 92 cases out of 210 the individual examiners gave a different verdict on the second occasion from the verdict awarded on the first occasion.

(b) the unreliability of the examination: questions in any examination can deal with only a sample of the syllabus which has been studied. If the sample is not representative of the syllabus as a whole the examinees may not do themselves justice. When a teacher can make an accurate forecast of the type of question likely to appear in an examination, his pupils will probably gain marks unrepresentative of their ability. To give consistent results an examination should be of the same order of difficulty to all examinees of comparable ability.

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* Bloom, B.S. (ed): Taxonomy of Educational Objectives, Handbook 1: Cognitive Domain, David McKay & Co., Inc., New York, 1956.

(c) the unreliability of the examinee: few individuals can consistently reach the same standard in any activity: all have their good and bad days. Some are more consistent than others and it is for this reason that a decision on a pupil's future should not be based on the result of a single examination. Ill health, or nervous tension, may also cause an examinee to do badly in an examination.

One technique which has been successfully developed to overcome the unreliability of examinations is the objective test. "The Battle of Bannockburn was fought in - 1413 1143 1314 1134 - underline the correct answer." Questions of this type have only one correct answer and thus the mark is likely to be the same no matter who corrects the paper. A large number of such questions make up a test and therefore a much wider sample of the syllabus can be studied. Such tests have some obvious disadvantages in that they cannot test a pupil's ability to select data and arrange it in an orderly and logical order. The construction of such tests also is a much more laborious and time consuming operation than an essay type of examination.

The most important factor in determing success or failure in examinations is motivation. Where pupils have a strong desire to succeed they are more likely to do well: where they have little interest in the result the standard achieved will be low. Care has to be taken, however, to make sure that there is no over-anxiety on the part of the examinees, otherwise they become upset and do themselves less than justice. One of the causes of uneven performance by examinees is the undue proportion of an examination dependent on memorisation: too many examinations cannot be answered without remembering information. For example, the following question is typical of some examinations - "How many balls of $1\frac{3}{4}$" radius can be made from 539 cubic inches of metal?" Examinees may be capable of answering this question, but cannot remember the formula for the volume of a sphere. Outside the examination room, anyone who had forgotten such a formula would simply turn to a book for the answer. The present explosion of knowledge makes memorisation more and more unprofitable since much information becomes rapidly out of date. To find out how to use facts is much more important than remembering them, and examinations should reflect this change in emphasis.

It cannot be too strongly emphasised that all assessment of human ability is approximate, hence the more reliable and valid information about an individual which can be ingathered, the more any assessment is likely to give a true measure of the individual's ability or attainment. The result of a single examination should never be used as a means of assessment. Three components ought to be used:

(a) teachers' assessments : the pupil's record over a number of years will give a rating which should be fairly reliable. Teachers standards, however, vary according to the teacher's experience, hence some form of external measure is necessary to scale the assessments on a uniform standard.

(b) external tests of objective type : these give a reliable measure of a pupil's ability in a clearly defined syllabus.

(c) essay type examinations : these measure other aspects of achievement and ability than those generally measured by the objective test.

Examinations are not the same thing as the day of judgement: and they are certainly not the Alpha and Omega of education, nevertheless some form of assessment is essential if teaching is to be effective and the potential ability of individuals is to be developed: the ruler is unlikely to be discarded because it cannot measure to 1/1000th of an inch.

THE SOCIAL CONTEXT OF EXAMINATIONS

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In countries with differentiated occupational structures examinations are a link between school and society. The purpose of this paper is to discuss ways in which the societal uses to which external examinations are put frustrate educational objectives. In the final section I shall have a little to say about possibilities for a reconciliation. First, however, it will be of use to review briefly the several functions which examinations serve.

I

Within schools tests are used as an incentive to get children to work. The extent to which teachers in traditional schools rely on examinations to motivate their pupils may be gauged from the extent of the opposition when abolition is opposed. Informal testing, which can be conducted in a variety of ways, can also provide useful feed-back to learner and teacher and help diagnose strengths and weaknesses. Unfortunately the vast amount of information which is available from formal testing is rarely used to assist pupils improve their learning, but only for classification. Grades are used to regulate the progress of pupils from one stage of a subject to the next, from one class to the next and to successive institutions.

In some places the collective results are used as a means of assessing teachers; for example as evidence for promotion. Schools too are judged by the examination performance of their pupils at external examinations, and some of the more prestigeous independent schools advertise by discreet reference to results. The implied claim that good examination results are attributable to the quality of teaching in a school is of dubious validity. Recent sociological studies by Coleman in USA, Douglas in Britain and Keeves in Australia of the relative contributions of home environment and of schooling indicate that the former contributes most to the outcome. (1) Further evidence is the failure of performance-contracting in USA where private educational agencies, using the latest teaching techniques, contracted to produce specified gains on standardized tests. The contractors are going out of business. (2) It seems very possible therefore that the good results of particular schools are more a function of input than of differences in teaching. Later we shall note that examination results are only moderately accurate in predicting the future performance of an individual.

The most obvious social use of examinations is to maintain standards or determine a minimum standard necessary for the performance of a task. The test for a motor driving licence is an example. Motor authorities deem it necessary that before a driver is safe to go on the roads he should know the highway code, and be able to demonstrate elementary skill driving in traffic, parking, etc. The test is not used to limit the number of licensed drivers, but solely as a means of quantity control. Tests for admission to the skilled trades and the professions serve a similar function of ensuring that the applicant possesses the minimum skill necessary for his avocation. There is no doubt that the most valid examinations of capability are those which are direct tests of the relevant skills: actually driving the motor car rather than knowing the theory of driving for example. Examinations for admission to the higher public sevice and to the professions tend, however, to be indirect. The tests might contain a great deal of theory, or even completely unrelated subjects. Up until the Second World War admission to the upper echelons of

the British Colonial Service required a mastery of the classics, with emphasis on form rather than content. The connection with the requirements of the task is obscure, unless the self-discipline needed to master Latin and Greek developed in the learner those stern moral qualities necessary for the efficient administration of a tropical empire.

The second major social use of examinations is for selection and manpower direction. Where there is an excess of qualified applicants examinations not only determine the minimum standard but also an order-of-merit list from the top of which the requisite number is chosen. This is a situation which bedevils admissions to universities and the prestigeous professional occupations. It is not a new problem however. The Book of Judges tells how Gideon used a vocational selection test to produce a manageable strike-force from an excess of keen parisans:

> "And the Lord said unto Gideon, 'the people are yet too many; bring them down unto the water, and I will try them for thee there .... every one that lappeth of the water with his tongue, as a dog lappeth, him shalt thou set by himself; likewise every one that boweth down upon his knees to drink.' ..And the Lord said unto Gideon,' by the three hundred men that lapped will I save you.' "

In modern industrialized societies and in societies which are converting to this model, educational qualifications are the major means by which parents seek to enhance the life-chances of their children. Democratization of education is removing the rigidity in social structure which under feudalism and in newly established societies was maintained from one generation to the next. For a place at the top the possession of skill is becoming more important than the inheritance of position or capital. The pressure on schools and universities is enormous and examinations are used not just to control quality but to limit the numbers who get into the academic stream of secondary education. There is a further limitation on the number who get to college and university and who graduate into the most desired jobs.

Although the intensity of the competition is new the use of formal examinations as an instrument of social engineering has a long history. For 1500 years Imperial China conducted competitive entry into the bureaucracy using formal tests of learning in a classical, literary and moralistic curriculum. (3) In recent times the number of candidates was as high as two million but the number gaining admission to the upper classes was very small indeed. The Chinese were responsible for introducing mass, written, simultaneous examinations; techniques which were not adopted in the west until the nineteenth century. Initially the Chinese examinations were direct, the candidates being tested in skills relevant to the administrative role to which they aspired. Gradually the practical components were dropped in favour of asking the candidate to describe the skills and later still the test became examinations of literacy and classical knowledge. As a means of administering a social competition they worked. The handful selected from the multitude of applicants had sufficient wit and intelligence to carry out their administrative tasks with acceptable efficiency. The system is an example of what sociologists call "sponsored mobility." The existing social order is secured and the position of the elite is maintained, while the administrative strata is replenished with a sprinkling of children from the lower orders who have been specially socialized in elite values.

Educational theory must be related to the social and economic realities

of the times. Universal schooling has helped raise expectations beyond the capacity of society to satisfy them. There has to be some restraint.In 1930s it was "if we are all educated, who will sweep the streets?" Again this is not a modern phenomenon. In the sixteenth century Richard Mulcaster wrote:

> "There must be a 'restraint', and all may not pass on to learning who throng thitherward, by cause of the inconveniences which may ensue by want of preferment for such a multitude and by defeating other trades of their necessarie travellours. Our next labour therefore must be how to handle this restraint, that the tide overflow not the common with too great a spring of bookish people, if ye crie, 'come who will' or ring out 'all in'. (4).

Modern societies prescribe "all in" for primary and secondary schooling and beyong that it is increasingly "come who will." Examinations are the tool of social restraint, and as such carry a tremendous burden as universal schooling pushes up ever increasing waves of educated, able and ambitious children. Examination results determine the occupation, status and income of an individual for the rest of his life. Those parents already well-placed urge their children to greater efforts less they lose their place in the hierarchy. Even Ivan Illich cannot envisage a society free of examinations. Like Mulcaster, Illich acknowledges that although large numbers may aspire to high prestige and well paid occupations, everyone cannot be allowed to. There will have to be tests of preparedness, for example, to limit the number who can be permitted to become nuclear physicists.

Alongside their functional role examinations have ritual significance. In any society, traditional or industrial, young people are initiated into adult roles by tests of competence with which is associated a good deal of anxiety and perhaps some suffering. The interest generated not only in the candidate, but in friends, relatives and mere acquaintances as the results are published is like the excitement of a tribal initiation ceremony. Within a college or university, examinations constitute a 'rite de passage' symbolizing progress to higher status and inducing in the survivors a greater sense of cohesion and belonging. I mention this aspect because it helps explain the resistance of examinations to attempts at reform, despite long-standing evidence of the damage they do to education. Those of us who survived and have achieved positions of some eminence in the world of education or administration are inclined to have a certain emotional investment in the means which led to our success.

So far we have discussed the two sets of uses of examinations. In education they provide an incentive for pupils to learn, they can be a means for feeding back the results of learning and they are used to regulate the progress of students through successive stages of school. Their societal functions are to help maintain standards, to preserve social structure and to prepare individuals for roles in that structure. Now we need to look at their effect on education.

II

The two essential defects of examinations are that they do not test the right things and that they have become ends in themselves - the tail that wags the educational dog. All the incentives are for teachers to teach for the

examination. Pupils and parents want good marks and if possible the 'scholarship' which is awarded to those with very top marks; the headmaster wants good results to enhance the prestige of his school; and the teacher with the best examination record is the one who will be promoted.

Since exams test what they can test best, that is, categorical knowledge, rote learning is favoured. Using their commonsense students study past examination papers for clues about the content and orientation of a course of study. These papers and a knowledge of what is amenable to a three-hour examination help determine what should be studied and what parts of a course may safely be neglected. Other clues are found in the timing of examinations and rate of progress of the lecture-course. A noticeable speeding up in the third term is taken as a good indication that some topics have to be covered because they are 'on the paper'. Strategies vary with the individual, with the subject and with the skill of the examiner. Such variations affect not only the amount of work a student does but also his willingness and freedom to engage in intellectual work, whether or not it is considered examinable. Since examinations questions are a sample of the complete course and all topics cannot be covered in three hours there is a strong temptation to take a punt by concentrating on topics which will be covered and concentrate on these. Furthermore, there can be a positive anti-intellectual incentive. In 'The Advancement of Spencer Button', Brian James describes how a teacher responds to the incentive of an external exam:

> "That class had never realized before what "English" really meant. They could practically repeat the whole of "The Merchant of Venice" by heart. The very word "character" set them ticking off "traits" to the number of sixty for Shylock and twenty for old Gobbo. They could draw maps and charts and graphs of the very innermost soul of Antonio, and they could reckon to the last grain the very weight of Bassanio's love for Portia. All the parts of the play were taken to pieces and laid out for inspection; then they could put the parts together again with no parts left over. They dug out every figure of speech and examined it under a microscope. They knew every allusion, and had opinions about the Elizabethan use of every word in that play. They knew Shakespeare's mind - far better than he did himself - when he wrote that play. They worked through all the past papers in which "The Merchant of Venice" had appeared, and wrote reams and reams upon them, and then re-wrote their answers, and filled books with model answers, and imitated them. They certainly knew "The Merchant of Venice" and they longed for the time when they could tell Shakespeare, and all who peddled him, to go to hell and stay there.
>
> " They got an entirely new slant on poetry, too, and found things in Wordsworth that would surely have greatly surprised that simple poet.
>
> " When the examination results were published eventually, Spencer reaped a rich reward. Of the thirty-four boys in 3C, 33 got A's in English....." (5).

As an incentive to learning examinations are not highly efficient. There

is no question about the threat of a test causing students to work. The trouble is that traditional written examinations seem to deal best with that part of the curriculum that will be forgotten first. Anyone who doubts this should try retesting after three months. Modern psychology has demonstrated that the quality of learning is related to intrinsic motivation. Plato put it simply that enforced learning will not stay in the mind.

Finally there can be undesirable behaviourable consequences from competitive examinations. One of these is psychological stress, which in extreme cases can lead to suicide. A certain amount of anxiety is a stimulus to effort; beyond a certain level, however, and still well short of psychological break-down, anxiety becomes counter-productive and actually inhibits useful learning. There is also an effect on human relations in the class. Generally as pressure increases there is a break-up of group activity and even anti-social behaviour such as the keeping of information from competitors. In one case with which I am familiar the students realized that only a fixed proportion would be passed; that is they were competing against each other, not just against a standard. The response of some students was to seek out the weaker brethren and encourage them not to drop out so the proportion of failures would be maintained.

As the nature of professional work changes competitive examinations may even be disfunctional. There are clear trends for professional services to be provided by teams rather than individuals; for example, group practices in medicine and law, and team-teaching in education. In science and technology problems are being solved by groups rather than one brilliant individual. Yet in education at secondary school or university the emphasis is on individual effort, and this is reinforced by competitive examinations, the prospect of which destroys any incentive for pupils to collaborate in learning and problem-solving.

III

It should be obvious from the first part of this paper that, short of a spiritual revolution, society will continue to sift and select individuals for the more desired places in the social order. If one sort of test is abolished another will take its place. What then can be done to make examinations more consistent with the aims of education? Three possibilities are to abolish competitive examinations altogether, or to devise tests which insulate the learning process in schools from the pressures of the social market place, or to so construct examinations that they induce exactly those learning behaviours that the educationalist has specified.

The elimination of competitive tests is not as unrealistic as it may first sound. A distinction must be made between a competition in which an individual pits himself against a standard and an interpersonal competition for a limited number of places in a quota. In the second case all candidates may be of an adequate standard but only a few are chosen. Given that there will always be occupations and courses where access must be limited, cannot the prize be awarded other than by more stringent testing of performance on the qualifying examination?

The means must of course be socially acceptable. In times past access to higher education has been restricted to a wealthy elite; today in most countries children of the better-off retain an advantage in the competition for places but there are some signs of reaction. There are even a few instances

of preference being given to those starting from behind scratch in the qualifications race. The point is that discrimination which less than a generation ago would have been considered outrageous is now becoming socially acceptable in the name of equality of opportunity. The effect is to mute a little the effects of competitive entry. A second method is to institute an additional hurdle, not an academic one. A common example, which has operated in a number of countries, is the preference given to ex-servicemen. More recent and constructive are the programmes where preference is given to young students who have worked in voluntary programmes, or to mature applicants. Such schemes will not alter the levels of academic performance too much one way or the other. They do have the virtue of diversifying the range of life experiences represented in the intake. This could well be an advantage in the public-service professions like medicine and law.

Placing additional obstacles on the path may lessen the one-to-one connection between what goes on in school and the prize of admission to the professions, but the competition remains, except in the unlikely event of the surplus of qualified applicants being deterred by those obstacles. There remains another means which in theory eliminates all inter-personal competition. If there is an excess of applicants who have met the qualifying tests, select the required number by lot. The ancient Chinese allocated the final positions in their system according to a ballot. More recently Australia found a lottery to be a more or less socially acceptable means of determining a negative award - conscription for military service - and educational planners in at least two European countries are considering the method for admission of qualified students to university.

The second possibility for protecting schools is to construct tests which are not related to particular syllabuses. The best known examples are the Scholastic Aptitude Tests devised by the Educational Testing Service and which form the main means of regulating transition from secondary school to college in the USA. The tests are sometimes supplemented by reports from the candidates' school and by interview. Research reports give these tests about the same predictive validity as is common for the descriptive examinations used in most Commonwealth countries. Secondary schools in the United States are certainly freer of the examination pressures which dominate elsewhere, and this must be in part due to entrance tests which are not related to particular curricula. On the other hand a far larger proportion of the U.S. age group goes to college and much of the competitive pressure is displaced onto higher education.

In Australia, concern with examination pressures and the desire of some universities to experiment with new admission methods led to the Tertiary Education Entrance Project. (6) The series comprises up to nine hours of testing premised on the assumption that there are basic concepts common to a number of subjects and that achievement in these can be tested without demanding specific knowledge of the minutiae of a topic. Trial runs have been carried out for three years using several versions of the tests. Preliminary results are that university performance is not predicted as well by TEEP as by external examinations of the descriptive sort or by internal school tests. Work is in hand on a short version of TEEP which could be used in conjunction with school reports as a means of determining university admission. This result needs to be viewed in the context of the predictive values of various types of tests. The consensus of literally thousands of studies made in Commonwealth countries and in the USA is that the best predictors are achievement tests similar in nature to the criterion test of academic performance. Tests of general ability or of developed ability do not do quite as well, but are better than tests of specific ability. Tests of attributes of

personality or of motivation, and ratings from interviews are least effective. Because all the different sorts of predictors are inter-correlated the gain obtained from multiple predictors is small and rarely worth the effort of adding anything to achievement tests. (7) And even the best predictors do not consistently account for much more than one quarter of the variance in the criterion. These results apply to the relation between tests taken only one year apart. Predictions are weaker for longer periods. It is easy to verify how little the classification based on examination results corresponds to the contributions made by individuals in later life.

An alternative to generalized achievement tests as a means of freeing schools from the pressures of external examinations is to give schools the responsibility of conducting the exams internally. Where results must be comparable, adjustments may be made using information from moderating tests. In New Zealand, where the method has been used for many years, liaison officers keep the schools informed of their relative standards, and an external examination is available for those who fail to gain accreditation and wish to persist with their application. (8)

However, shifting the burden onto the schools does not necessary solve the problem because the social competition remains. In Queensland the Radford reforms led to abolition of the external examination at the end of the sixth form. Higher educational authorities, still needing to administer the competition for places, seized on the results from internal tests conducted at the end of each semester in the final two years. Students now cram for four examinations instead of one! Nonetheless, the potential for more precise testing of educational objectives exists in the new system; and if a moderating external test is introduced which can also be used as a second chance by those who fail their school tests, then teaching in school will be less constrained.

The third approach is to construct examinations which test exactly those attributes which have been specified in the curriculum objectives. This means using direct examinations. The effects of competition are not avoided. They are capitalized on by using the pressure which examinations exert on the method and content of schooling. If exams wag the educational dog then let it be the right dog. The extreme form of this view is that we will never alter teaching until we have altered examinations. They are instruments of reform.

It is generallly appreciated that direct testing is more valid than indirect and that, providing reliability is maintained, predictions are more accurate. What is sometimes not understood is that under competitive pressure direct tests induce learning behaviour which is closer to educational objectives, while indirect tests produce the opposite effect. Indirect tests are used because they are easier to measure; they are also usually easier to teach. So, when the pressure is on the teacher and his students find it easier to concentrate their efforts, not on the objectives of the course but on those capacities which the examiner assumes will indicate attainment of the objectives, the greater the pressure the greater the shift real objectives.

The trick is to devise an examination in which only those who have been properly educated can do well. This may be a straightforward enough task if the aim is to produce a competent car-driver, or a warrior who keeps his eyes about him when lapping from a brook. In education, the task is much more challenging and I am not convinced that the Spencer Buttons are yet defeated. (Despite a great deal of discussion there is very little research evidence about the effects which different sorts of examinations have on students' learning.) The recent surge forward in the theory and practice of the

curriculum opens new possibilities for the construction of tests which embody precise educational objectives. It should be noted, however, that many of the techniques for direct testing are more suited to internal examining. Even where direct testing proves to be effective many of the consequences of competition remain. In the foreseeable future there will be more able applicants than there are places at the top. The course of true education in schools will gain an extra degree of protection from the social market-place if examinations are released from some of the burden of allocating prized places.

FOOTNOTES

1. James S. Coleman, et al, Equality of Educational Opportunity, U.S. Govt. Printing Office, 1966; J.W.B. Douglas, The Home and the School, MacGibbon and Kee, 1964; John Keeves, Home Environment and School Performance, Australian Council of Educational Research, 1972.

2. H.J. Eysenck. "Performance Contracting: the Theory that Failed", Times Educational Supplement, 19th February, 1973

3. Ssu-Yu Teng. "Chinese Influence on the Western Examination System", Harvard Journal of Asiatic Studies, Vol. 7. 1943.

4. From positions, ch. xxxvii, 1581, quoted by Norman Morris, " A Historian's View of Examinations" in Stephen Wiseman (ed), Examinations and English Education, Manchester University Press, 1961.

5. Brian James. The Advancement of Spencer Button

6. TEEP tests have been constructed by the Australian Council for Educational Research at the request of the Commonwealth Government. Evaluation is carried out by those universities using the series. A summary of the main research reported from the Australian Capital Territory, Queensland, Tasmania and Western Australia on the relationship between TEEP series A, matriculation and university performance is contained in Tertiary Education Entrance Project, Department of Education and Science, Canberra, 1971.

7. The correlation coefficient is a greatly over-used and sometimes abused statistic in the evaluation of entrance examinations. It compresses into one cypher information from the entire range of the distributions. The Admissions Officer is usually interested only in discriminating between potential success and failure among candidates in the region of the cut-off point for admission. He can be seriously misled if, for example, the nature of the relationship varies from linearity at the extremes. In the first instance it is better to compare proportions who pass and who fail on the criterion either side of the cut-off, as determined by the various predictors.

8. G.W. Parkyn. Success and Failure at the University: Vol 1 - Academic Performance and the Entrance Standard, New Zealand Council for Educational Research, 1959.

THE EFFECTS OF EXAMINATIONS

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National examinations can produce a considerable effect, both good and bad, upon a nation, its teachers and its pupils. It should be helpful to summarize both the advantages and dangers of such examinations and for this we can turn to the classic summary of arguments contained in a British report published in 1911 and which is still relevant today.

"(1) The good effects of examinations on the pupils are (a) that they make him work up to time by requiring him to reach a stated degree of knowledge by a fixed date: (b) that they incite him to get his knowledge into reproducible form and to lessen the risk of vagueness; (c) that they make him work at parts of a study which, though important, may be uninteresting or repugnant to him personally; (d) that they train the power of getting up a subject for a definite purpose, even though it may not appear necessary to remember it afterwards - a training which is useful for parts of the professional duty of the lawyer, the administrator, the journalist, and the man of business; (e) that in some cases they encourage a certain steadiness of work over a long period of time; and (f) that they enable the pupil to measure his real attainment (i) by the standard required by outside examiners, (ii) by comparison with the attainments of his fellow pupils, and (iii) by comparison with the attainments of his contemporaries in other schools.

On the other hand, examinations may have a bad effect upon the pupil's mind (a) by setting a premium on the power of merely reproducing other people's ideas and other people's methods of presentment, thus diverting energy from the creative process; (b) by rewarding evanescent forms of knowledge; (c) by favouring a somewhat passive type of mind; (d) by giving an undue advantage to those who, in answering questions on paper, can cleverly make the best use of, perhaps, slender attainments; (e) by inducing the pupil, in his preparation for an examination, to aim rather at absorbing information imparted to him by the teacher than at forming an independent judgment upon the subjects in which he receives instruction; and (f) by stimulating the competitive (and, at its worst, a mercenary) spirit in the acquisition of knowledge.

(2) The good effects of well-conducted examinations upon the teacher are (a) that they induce him to treat his subject thoroughly; (b) that they make him so arrange his lessons as to cover with intellectual thoroughness a prescribed course of study within appointed limits of time; (c) that they impel him to pay attention not

only to his best pupils, but also to the backward and the slower amongst those who are being prepared for the examination; and (d) that they make him acquainted with the standard which other teachers and their pupils are able to reach in the same subject in other places of education. On the other hand, the effects of examinations on the teacher are bad (a) in so far as they constrain him to watch the examiner's foibles and to note his idiosyncrasies (or the tradition of the examination) in order that he may arm his pupils with the kind of knowledge required for dealing successfully with the questions that will probably be put to them; (b) in so far as they limit the freedom of the teacher in choosing the way in which he shall treat his subject; (c) in so far as they encourage him to take upon himself work which had better be left to the largely unaided efforts of his pupils, causing him to impart information to them in too digested a form or to select for them groups of facts or aspects of the subject which each pupil should properly be left to collect or envisage for himself; (d) in so far as they predispose the teacher to overvalue among his pupils that type of mental development which secures success in examinations; (e) in so far as they make it the teacher's interest to excel in the purely examinable side of his professional work and divert his attention from those parts of education which cannot be tested by the process of examination." (1)

It is obvious that the strength and weaknesses of examinations described are not inherent to all national examinations. Some burdensome effects can be relieved by recognizing the need to use more than one examination to serve the many uses for which such results are employed. School-based tests, rankings of pupils by teachers, periodic assessments and a careful combining of marks with full regard for the statistical attributes of the scores can do much to increase effectiveness. Many of the disadvantages can also be minimized by careful control and use of the results of the assessments.

The impact of examinations upon national development is an issue upon which too little scholarship has been devoted. Although not everyone would agree, we may say, in brief, that the good effects upon a nation are:

(a) the establishment and maintenance of educational standards;
(b) the encouragement of learning at all levels of society;
(c) the identification, recognition and use of talent according to merit and efficiency by scientific means;
(d) the reduction of patronage and bribery;
(e) the development of skills for current and future national requirements;
(f) the development, revision and stabilization of curriculae;
(g) the encouragement of democracy by equalizing opportunity for employment and advancement and the efficient allocation and use of national resources;
(h) the stabilization of government and society.

On the other hand, the bad effects of examinations upon a nation may be:

(a) the development and perpetuation of inadequate or false standards of education;
(b) the discouragement of learning through failure experience;
(c) the identification, recognition and use of measurable but irrelevant or wrong talents;
(d) the increase of mediocrity and inactivity among civil servants;
(e) the development of skills unnecessary for national development;
(f) the development and perpetuation of irrelevant or wrong curricula;
(g) the maintenance of inequality of opportunity by assessing and certifying achievements available to few;
(h) the misuse of national resources;
(i) the disintegration of government and society by replacing established traditions and practices with new ones.

Whatever else may be said about examinations, it cannot be denied that the effects of an examination system can be dramatic and lasting, for good or ill upon a nation and its citizens. Examples are legion of the chaos and confusion and, in the extreme,open combat arising over the establishment, conduct or results of some public examinations or another. In 1965 Japanese students took to arms over the use of a national examination for selection to university. The new examination was ultimately withdrawn but not before the students had caused great damage to property and riots which led to the loss of life.

Petitions, letters, strikes and boycotts are but a few of the unintended by-products of examinations held in the name of justice for all. It can be argued that many of the criticisms levelled against examinations are misdirected since it is the use of the results that is the heart of the controversy. However the examiners are seldom blameless and can often be faulted at least for failing to understand and explain the weaknesses as well as strengths of their efforts. The unfortunate truth is that examinations often fail to achieve their purpose because they are required to serve too many purposes, because they are inadequately constructed and because seldom they are too subjected to careful evaluation after the event to find out how they worked in practice.

External examinations can exert such quality control restrictions upon the classroom that teaching can become entirely a matter of preparation for the examination. The advantages of this control are:

1. Instruction becomes more uniform in different schools nominally teaching the same subject. Although a standardized curriculum is required, individual schools and teachers tend to neglect or emphasize particular topics. Examinations have the effect of forcing teachers to teach what the course planners have deemed to be important.

2. Weaknesses in the curriculum are revealed. If certain skills are not acquired as expected, the curriculum planners and the teachers can reconsider the curriculum as well as consider methods for improving teaching.

3. Schools and teachers not developing adequate standards of performance of the pupils are readily identified, and the causes can be investigated.

4. More accurate grading standards are applied which are fair for all pupils. Marks awarded to pupils at different schools represent the same degree of achievement.

5. Teachers and pupils are motivated by a rivalry based on a fair contest (examination) which applies the same rules to all competitors. Those who fail to show adequate proficiency at certain tasks are directed to restudy those aspects (provided, of course, that the marked scripts are returned to the candidates).

6. Quality control is obtained which allows the schod system to 'rebuild' those pupils below standard and reject those who are hopelessly inadequate.

The main complaints against the use of examinations as quality control devices is that they discourage teachers from introducing material to their classes which is not covered by the examination. Pupils have been known to object to the introduction of such material on the grounds that their time is being wasted and their success at the examination is being put to risk. External examinations are also likely to emphasize those skills and abilities which can be more easily measured by pencil and paper exercises. Attitudes, interests, and behaviour which are less examinable under controlled conditions are likely to be neglected. Opponents of external examinations argue that the main function of examinations is to improve the educational programme. They would have examinations set at the beginning of the term so that a factual basis can be used for planning the ensuing school work. The difference between the two points of view is a matter of whether the main emphasis of educators shall be placed upon diagnosis, pupils guidance and curriculum planning or upon final achievement and certification of accompliment. The issue is inevitably resolved by the location of the balance of power in the educational system. Where the Central Government is in charge, quality control systems are found. Where teachers are in possession of substantial power and influence, then the administrative control of examinations and their uses will be largely located in the school.

Reference:

1. Cited in Secondary School Examinations other than the G.C.E., London, HMSO, 1960.

PURPOSE SCOPE AND STRUCTURE OF PUBLIC EXAMINATIONS COUNCILS IN THE THIRD WORLD COMMONWEALTH

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1. Purpose, Design and Functionality

"The art of sailing governs the art of shipbuilding." So did Thomas Aquinas (1) summarise and express the inter-relationship between purpose, design and functionality.

Purpose determines design, while design in turn is influenced by the requirements of function and the need to facilitate functionality. It is impossible to achieve optimum design without a thorough examination of functionality as well as of purpose.

Thus, for any consideration of the role, function and organisation of public examinations bodies, the basic pre-requisite is an examination into their purpose, structure, and functionality.

2. The Purpose of Examinations

Of fundamental importance in any discussion of public examinations systems or examinations bodies is an assessment of the purpose of examinations - as well as the effectiveness of particular examinations, and the relevance of each within the context of its role in the social complex.

It is being suggested with increasing frequency and loudness that examinations are irrelevant in the contemporary world - particularly in the Third World of today.

Such assertions are without foundation. Indeed, they indicate a lack of understanding as to what an examination really is, as well as a misconception of the notion of relevance.

A single test of short duration need not serve as a complete examination. Nor need an examination comprise a set of similar and homogeneous tests.

Tests are an inherent feature of human development. They are an integral part of growth. Mere survival is but the successful negotiation of tests. Thus, the subjection of oneself to a test is in a sense instinctive. Further, on the level of living as opposed to surviving, growth is seen to be a progression of the successful completion of sequential tests. Hence, life itself may well be regarded as one sustained examination infinite in scope and in the variety of its component tests.

The basic question, therefore, is not as to the relevance of examinations. It is in respect of the relevance of a particular examination within the context of its specific purpose and the consonance of such purpose with the requirements of the society whose interests prompted the design of the particular examination.

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(1) Aquinas: III Contra Gentes

There are many aspects of examinations. However, only the more important ones will be discussed in this paper; since the purpose of this discussion is to provide the basis for an enunciation of a concept for the role and functionality of Public Examinations Councils in the contemporary Third World Commonwealth.

Attention is directed first to the property of assessment and its operation.

School examinations are usually classified into two types on the basis of their capability of assessing attainment or aptitude. There is certainly a third type - the objective of which is the evaluation of ingenuity and originality.

Basic to all of these types of examination is the feature of the recognition of potential. Thus, it would appear that the fundamental purpose of examinations is really the estimation of potential.

This is not surprising. Nor is it anything but proper. For, in so far as examinations are a social institution, they must serve the society in a variety of ways; and in the best interests of the society they should function not as valves regulating inlet and output, but as an agency of optimisation of the contributions from the individual members of the society towards the collective welfare. This they should do through selective development in any particular respect - potential being the product of aptitude and inclination.

Within such a context, the response of the individual to stress is undoubtedly worthy of assessment; and indeed is properly a subject for testing. It is certainly in the best interests of the community as it is of the individual - whose personal development is so dependent on self-knowledge - to be aware of the nature and extent of the stress factor in personal performance. To understand and subsequently to control or minimise the debilitating effects of stress is in any respect a most worthwhile aim. So also is the utilisation of the enhancement effect of stress. Moreover, of particular interest to the individual,and the society, should be the harnessing of the creative impulses that are generated by the stimulus of excitation which derives from the reaction to external stress.

3. Examinations as an Instrument of Education

The problem of the conception and formulation of a philosophy of education is circumscribed by the bounds of national philosophy; since education involves both the individual and the society, and aims to modify the natural development of each individual in respect of his potentialities and predispositions as well as within the context of the modification of the society as a whole. Thus, there has been from the earliest introduction of formal education in various societies and cultures a continuing debate as to the purpose of education and hence on the postulation of a philosophy of education that is generally acceptable - particularly against the background of its instrumentality in respect of the modification of natural development.

It is understandable and, indeed, proper that a society's concept of education is peculiar to that society; and that national philosophies of education reflect national characteristics and national aspirations. However, the quintessence of education must find accommodation in any particular national educational philosophy; and the notion of education as conceived by

John Stuart Mill (1) must surely be so regarded. His conception of education he expressed when he said "not only does it include whatever we do for ourselves and whatever is done for us by others, for the express purpose of bringing us somewhat nearer to the perfection of our nature ; it does more: in its largest acceptation, it comprehends even the indirect effects produced on character and on the human faculties, by things of which the direct purposes are quite different; by laws, by forms of government, by the industrial arts, by modes of social life; nay even by physical facts not dependent on human will, by climate, soil, and local position. Whatever helps to shape the human being; to make the individual what he is, or hinder him from being what he is not - is part of his education."

Within the framework of such a concept of education, examinations are clearly identifiable as constituting a significant part of the process of education.

The notion of examinations being an inherent feature of life, as described earlier, certainly provides substantiation of the claim that examinations are an instrument of education. However, in as much as the acceptance of challenge and the subjecting of one's self to test is instinctive, in the interests of survival, the development induced by such examinations is natural; and ought probably not to be considered as deriving from education. None the less, it is precisely because of the natural inclination and instinct towards the subjection of one's self to tests, that examinations afford such a powerful means of education - that is, an instrument for the modification of natural development.

The role of examinations in the educational process extends to levels more sophisticated than confidence-building and gradual progression.

Examinations provide an effective means of developing discipline of thought and expression. They may also serve the purpose of the development of perspective. Indeed, they can provide an introduction to the development of scholarship, as well as test it.

4. The Examination Process

The nature and scope of any examination are determined by the specific purposes of the particular test.

Thus, in the formulation of public examinations, particularly school examinations, it is imperative that cognisance be taken of the cultural aspects of examinations.

For example, it is particularly important to recognise, and to understand the fullness of the society's conception of such ideas as uniqueness on the part of an individual, achievement as a measure of the realisation of potential, attainment as an index of superiority, fulfilment and its dependence on peformance, competition, collaboration, and failure.

It is such notions and the related values which constitute a part of the culture that underlie the educational philosophy of the society; and determine the acceptability of educational practice within it. Consequently, those are

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(1) J.S. Mill, Education

the considerations that should provide in significant measure the purpose which prompts the design of any examination system.

5. The Spectrum of the Methodology of Examinations

Any process of examination inherently involves communication; and, indeed, the effectiveness of the examination depends entirely in the first instance on the degree of success of the communication from the examiners to the examinees. Hence, for the examination to serve its real purpose, it is essential first to ensure that there is genuine communication to the candidate. He or she must know and understand exactly what is being asked of him or her; and so should have no doubt as to the expected nature of his or her response.

To this purpose, the means of communication should ideally be such as is normal within the society. Thus, the proper use of appropriate idiomatic expression is of the utmost importance.

The medium of expression is equally important in the context of complete communication.

Consequently, the nature and style of the offering of the examination should vary with the dependence of cross cultural influences on the growth and development of the individual within the society.

As for the candidates, the examination tests their ability to communicate. Indeed, it does this more effectively than it tests potential - either by way of attainment, aptitude, or originality.

In this context, it is of particular interest to note that from the viewpoint of the society there cannot be equality among its members in respect of the ability of expression of thought and the effectiveness of communicating with others.

This aspect of examinations should, therefore, be used for specific purposes - and used consciously.

The immediate objective of school examinations is really the assessment of the degree of benefit gained by the candidate from the pursuit of the curriculum.

Accordingly, a single end-of-course test is inadequate. Moreover, while it may effectively evaluate ingenuity and originality, it provides only an approximation - and a vastly variable one at that - of the extent of attainment or the degree of aptitude; since the performances of candidates in such tests are unavoidably and unascertainably influenced by the sense of occasion and the attendant emotional stress.

Further, the real aim of education seeks to produce happy, useful, purposeful citizens - persons who are integrated into the society and who find fulfilment within the society. Their fulfilment stems from their contribution to the society as well as from the benefits they derive from their fellows and the society as a whole.

In this sense, the curriculum is to provide the means of developing the potential for good citizenship.

Thus, the fundamental question in respect of school examinations is not whether they can test this particular potential, but how best it might be assessed.

There are essentially three aspects of the potential for good citizenship. These are: social consciousness, social relationship, and the contribution to the society through a particular job-function or professional practice. The nature of the work-function depends to a very large extent on aptitude and motivation; and it is the business of the school system to provide for the identification of aptitude as well as to promote motivation.

The fundamental question, then, is how is the potential for good citizenship best assessed.

The answer lies in the purposeful selection of techniques of testing from among the various aspects of the methodology of examinations.

It is suggested here - as a general principle - that the school examinations should comprise:

(i) an assessment, over the duration of the course, of social response;

(ii) periodic tests, both with and without the use of reference material, to be completed in a specified and reasonably short period of time;

(iii) a test or tests involving no specific restrictions as to time or reference material.

It must be noted that the proposed outline is offered as a general principle. For specific examinations, the structure of the examination would depend on the relative weights given to the component tests. And, it is the level of development of the candidates that would determine the appropriate weighting factors.

6. The Current Situation in respect of School Examinations in the Third World Commonwealth

There is one experience which has been shared by the nation-states of the Third World Commonwealth.

The effect of this experience is reflected in the stunning similarity of their secondary school examinations. The similarity is stunning because of the striking differences in the cultures of the societies involved. It reflects the extent of cultural dominance which derived from the imperial relationship, and which has in no significant manner left its imprint on these societies.

In areas of the Third World Commonwealth where there are no Public Examinations Councils, there is still little alternative to the examinations of such authorities as the Cambridge Examinations Syndicate and its counterparts in Britain.

However, the countries of West Africa, the Sudan, East Africa, Malaya, to a limited extent India, and more recently Cyprus and the Commonwealth Caribbean have instituted either regional or national Public Examinations Councils.

To what purpose these Councils?

The most remarkable feature of all of these Councils is their having been designed for a sub-culture within the societies they ought to serve.

In each case, the Council was initially conceived of as an agency of direct replacement for the Cambridge Examinations Syndicate. The musicians were changed. Not so the music. The theme, composition and style were maintained.

With such a conception, it is not surprising that the notion of take-over has been the same in each case. The idea was merely to substitute local examiners for expatriate ones.

Nor is it surprising that the advice given by the Cambridge Examinations Syndicate in each case has been such as it was. There are two reasons for that. The first is to be found in the context of the specific requests made of the Syndicate. The second is due to the inadequacy of the Syndicate and its experts in respect of their functionality in strange environments, and their lack of sensitivity towards the cultural parameters of education and examinations in societies different from their own.

Consequently, there is now an urgent need for new perspectives in respect of the Examinations Councils in the Third World Commonwealth. The need is for the recognition of cultural identity, the service of such identity, and the perception that on a universal basis the human ideal is that of equality and not identity.

7. Professionalism and Public Examinations

The West African Examinations Council is unique among the examinations councils of the Third World Commonwealth.

Its uniqueness is due to its concern - in addition to that for the usual secondary school examinations - with examinations for secondary school entrance, teacher training colleges, and the public services.

In these respects, it has set an example that is worth following. However, it might do more.

The challenge to be met by public examinations councils in the Third World Commonwealth includes the servicing of professionalism. For, one of the most striking needs in the countries concerned is the need to foster a genuine sense of professionalism and the establishment of acceptable norms of professional practice. The need is greatest in respect of the persons whose functions are those of the executive secretary, stenographer, engineering technician, scientific laboratory technician, and the craftsman.

8. A Concept for the Role and Functionality of Public Examinations Councils in the Third World Commonwealth

On the basis of the fundamental educational objectives, in the interests of national dignity, and towards the service of national aspirations, a concept is enunciated here for the role and functionality of Public Examinations Councils in the Third World Commonwealth.

Each Council should aim to serve its entire society.

It should do so in respect of every aspect of education which is within its competence, and which comes properly within the ambit of its authority.

It should be responsible for the conduct of all school examinations. It should cater also for professional certification where this is not clearly regulated. Further, it should be sensitive to the needs of the various professional organisations; and should, on request, service those needs.

The demands of such a role are clearly great. The problems they pose are commensurately large. However, the difficulties are not insurmountable.

Indeed, the challenge is not merely that of finding solutions to the problems. The challenge is directed towards the harnessing of the national resources, and the constructive use of the national energy.

The challenge brings with it a great opportunity - the opportunity for the assertion of national identity, total participation in the service of the nation, and a life based on dignity, mutual respect, complementarity and brotherhood.

It is in such a setting that the purpose, role, and functionality of Public Examinations Councils in the Third World Commonwealth should be seen.

EXAMINATIONS COUNCILS

Summary of Papers

T.S. Wyatt: The Development of Regional Examining Bodies, traces the developments in the Commonwealth since 1945 and outlines the progressive local take-over of responsibility for the School Certificate and GCE examinations. The author, who played a significant role throughout this process, detects certain common elements in the diversity of organizations which have emerged. An advisory body, linked to an English Examination Board, initially modifies syllabuses and subsequently organizes a regional examining body which appoints staff and initiates their training in cooperation with the English Board. Local examiners are recruited and trained and the handing-over process is largely completed although cooperative efforts may go on for a long period thereafter. Massive efforts have been required on both sides and the processes have been evolved "partly from first principles and partly through trial and error." A number of problems of mutual interest are highlighted and cooperation for their solution is urged.

J. Deakin: Trends and Problems, describes the process and some of the problems associated with the establishment of a local or regional examinations council. The author, who was the last British Registrar of the West African Examinations Council, has probably consulted with the founders of more examining bodies in the Commonwealth than any other individual and brings a unique perspective to their problems. His paper touches on a variety of common difficulties and renders succinct advice on what needs to be done.

T. Boatin: The Role of a Regional Examinations Council, describes some of the factors which are important to an examinations council from the perspective of the West African Examinations Council. He refutes some of the oft-heard criticisms of regional examination bodies and points out that the WAEC has "transcended political, economic, cultural and other boundries because the Council has kept its eyes on its role in the building of a nation. That role is purely and simply educational."

The West African Examinations Council Illustrated by Diagrams, describes the structure and function of the Council and its committees. Operating procedures in the administration and conduct of an examination are outlined and some figures on examinations are given to illustrate the scale of operations in Ghana.

West African Examinations Council: Milestones in the Council's History, gives details of some of the significant developments that took place over the twenty-one years of the Council's existence. The nature of the milestones gives some flavour of the priority of interests in West Africa in the evolution of the WAEC.

B.P. Kiwanuke: The East African Examinations Council and The Development of the East African Examinations Council, traces, in a pair of papers, how three Commonwealth countries have moved to assume greater control of their examinations. The first paper reviews the first couple of years of the Council's work and the second covers the past five years of operation. The EAEC aims to develop examinations appropriate to East Africa and has structured its organization to encourage representative opinion to be voiced at all levels. The administrative and committee structure is described and illustrated and a number of expanding responsibilities and administrative problems are discussed.

B. Somade: The Role of a Regional Examinations Council, reports the need for examining bodies to review their role and function to satisfy the needs of the future. The purpose and function of current syllabuses and examinations is questioned and suggestions are made for modernizing the assessment processes.

V. Chukwuemeka Ike: A Survey of Training Needs Related to the Effective Operation of an Examinations Council, describes the large variety of activities in which examinations council staff become engaged, and for which they should be trained. These functions include syllabus development, production of examination papers, introduction of different methods of examining, guidance test production, conduct and administration of examinations, test evaluation and fixing of standards, educational and examinations research, training and other related activities. Professionalism needs to be fostered by training permanent staff in techniques of educational measurement and in techniques of management. Temporary staff such as examiners, markers and others would also benefit from training in new methods of examining, test construction and marking. Colleges of education should make all of their students acquainted with basic examining techniques. Most examinations councils would benefit from assistance in the provision of training.

The World Confederation of Organisations of the Teaching Profession: The Actual and Potential Role of Teachers' Organisations in the Development of Examination Techniques and the Administration of Examinations, says that examination techniques and administration belong to teachers. It is argued that since the majority of examiners are practising teachers and the administrators and planners enjoy a background in education, teacher organisations should have greater participation in examinations councils.

G.M. Forrest: The Contribution of a Research Unit to the Effective Functioning of an Examinations Council derives from its supplying information, based on evidence, upon which decisions can be made. Research projects must be relevant to the needs of the examining body and the report of results must be lucid. It is argued that the research unit should be based within the examinations council and subject to its overall control, yet independant in the technical and research aspects of its work. The functions of the research unit are to provide the council with research evidence which may contribute to: policy decisions, committee work, improvement in examining activities and long-term effects of examinations. Research staff should be professionally trained in research techniques and have had some teaching experience. Although data processing equipment is helpful, a great deal of useful work can be accomplished with the minimum of equipment.

S.A. Akeju: The Place of Research and Evaluation in Public Examinations, notes the scale of examinations in West Africa and the ambivalent attitude of the consumer - belief in their importance coupled with suspicion of their fallibility. Examinations serve to maintain standards, stimulate educational efforts, assist in administration and promote social mobility. Examinations should be evaluated in terms of their purpose, objectivity, reliability and validity; judgements which are best accomplished through research and evaluation. Research can assist in: solving problems of measurement in the non-cognitive domain, devising improved tests of problem-solving, translating broad policies of education into examinable terms, assessing the influence of public examinations on teaching and curriculum measuring educational change and growth, investigating the influence of cultural

background on a candidate's performance, and improving the validity of examinations.

B. Premaratne: The Examinations Scene in Sri Lanka (Ceylon), is one of central control which was started during World War Two and was effectively completed about ten years ago. The Department of Examinations organizes more than one hundred examinations annually, the bulk of which are arranged on behalf of schools. The Curriculum Development Department of the Ministry of Education cooperates with the Examinations Department in effecting radical changes in the educational system. The reforms are being carried out as part of a national programme of socio-economic development. A National Certificate of General Education (NCGE) has been developed to replace the GCE-O level examinations. The syllabus for the NCGE will include a substantial element of pre-vocational studies. Substantial changes in examining arrangements are anticipated and with progressive decentralization of the NCGE new procedures for testing and large-scale training of teachers and administrators will have to be developed to introduce the new system.

A.B. Junid: The Development of an Examinations System in Malaysia, occurred during the past twenty years, largely for the primary and lower secondary school level. (Upper and post-secondary examining is conducted in collaboration with external bodies). The local examinations are designed to improve the quality of education in the schools and results are used for the guidance of pupils, teachers and education authorities. Selection and streaming has been discontinued and the emphasis has shifted to providing a comprehensive education to every school child.

G.K. Iyer: Guidance and Counselling in Maylasian Secondary Schools, describes the aims and problems of a guidance service in the school system in Maylasia. A systematic programme of activities is arranged to inform the pupil of the various prospects open to him upon completion of his formal secondary education. Limitations in resources inhibit the effectiveness of the programme.

A. Symonds: Establishment of the Caribbean Examinations Council, reviews the needs of this recently established body which will conduct examinations in fifteen widely separated and different countries. The Council has not had the benefit of large-scale preliminary work and so must undertake basic research concurrently with the administration of examinations. Research will be undertaken by the Council's staff in association with the universities in the region; some research may be commissioned from the universities. The Council's immediate needs are for administrative and professional staff and for training opportunities. Curriculum committees will seek means of developing suitable syllabuses. Security is not expected to present undue difficulties and teachers will be invited to participate in the setting and marking of the examinations. The Council looks forward to cooperation with the longer-established examining bodies in the Commonwealth.

J.W. Taylor: The South Pacific Commission Educational Testing Programme, reports some of the problems encountered in developing a testing programme for a territory which covers about one-third of the world's surface. The difficulty in communications and travel among the scattered island communities adds to the problem of selection of pupils for the restricted number of places in secondary education. A battery of tests is being developed to facilitate selection.

A.D.C. Peterson: The International Baccalaureate, outlines the origins and purpose of the IB: to provide an internationally valid university entrance qualification through a flexible, non-national curriculum and to experiment with curriculum construction and examination techniques. The major problems are reviewed and possible solution suggested. The problems include ensuring a balance between general education and specialization, stimulating good teaching, providing adequate criteria for university selectors, facilitating world-wide administration of the examination. Possible solutions include flexibility in syllabuses, new approaches to language examining, the use of objective tests, using batteries of tests, utilizing new technologies, continuous assessments and balanced teams of examiners.

UNESCO: UNESCO's Activities in the Field of Examinations, have largely been concerned with equivalences. In recent years assistance has been given to facilitate the comparison and recognition of courses and awards. The underlying purpose has been to ease the international mobility of students and qualified personnle. Unesco's studies and publications in the field are listed. While Unesco's general policy is towards lifelong education, current educational needs have to be met and the present role of examinations is recognized, especially in areas such as curriculim reform. The function of examinations in enabling each individual to realize his full potential is acknowledged.

THE DEVELOPMENT OF REGIONAL EXAMINING BODIES

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This contribution reflects the experience of a connection of nearly thirty years with the development of regional examining bodies but inevitably it presents events and problems as they have been seen from one standpoint only. Because of this and because the subject is so large that it cannot be covered fully in a relatively short space the picture must be incomplete and it is hoped that the papers presented by the various bodies themselves will fill in the more important gaps. It needs to be mentioned also that only bodies which have been established since 1945 are mentioned here. During the eighty or so years preceding that date India had already instituted its own system of examinations, as had other countries (Australia, Canada, Ceylon, South Africa) where the examinations of English boards had previously been taken.

The story begins then in 1945, when the University of Cambridge Local Examinations Syndicate established its Advisory Committee for Overseas Examinations and issued a statement emphasizing the importance which the Syndicate attached to the appointment in every area in which its examinations were taken of a local organization on which the school teachers would be strongly represented, and expressing the hope that with the institution of such committees the practice of arranging for the setting and marking locally of certain papers would be extended. The next significant steps were taken in 1947-48 when the then Secretary of the Syndicate, Mr. J.L. Brereton, visited West Africa to prepare for the coming adaptation of examinations to new conditions overseas, and in 1949-50 when the late Director of the Institute of Education of London University, Dr. G.B.Jeffery also went to West Africa to advise on a proposal that "there should be instituted a West African Examinations Council", a course which he recommended in his Report of 29 March 1952 to the Secretary of State for the Colonies. Thereafter the Cambridge and London examining boards conferred with a view to harmonizing their policy on overseas examinations and the subsequent course of events in West Africa owed much to the friendly collaboration between Mr. Brereton and Dr. Jeffery and between the boards of their two universities.

In January 1953 Mr. Brereton went to Khartoum for consultations about the foundation of a Sudan Examinations Council and in the following March the West African Examinations Council held its first meeting. With reference to both the Sudan and West Africa the Cambridge Syndicate commented; "The establishment of these local examinations councils should serve a valuable immediate purpose in ensuring that examinations conducted from the United Kingdom suit local needs; in course of time they should enable local examinations to establish themselves without loss of confidence or lowering of standards." The chronological sequence of the more important development of the succeeding years is very briefly as follows:

1954-55 Establishment of the Malayan Examinations Board in Singapore under the auspices of the University of Malaya.

1955 Introduction of the West African School Certificate (W.A.S.C.) conducted jointly by Cambridge and the West African Examinations Council (W.A.E.C), and of the Sudan School Certificate under the joint control of Cambridge and the Sudan Examinations

Council. This conversion of the Cambridge S.C. examination into examinations for particular areas, conducted in partnership with the local body, was a step entirely without precedent in overseas examinations.

1957 Introduction of the Federation of Malaya Certificate of Education, conducted by Cambridge in co-operation with the Ministry of Education of the Federation. This examination was the same as that for the Cambridge School Certificate, but under somewhat different regulations. The title was changed later to Malaysia Certificate of Education (M.C.E.).

1958 Establishment of the Council for the Indian School Certificate Examination by Cambridge in co-operation with the Inter-State Board for Anglo-Indian Education in furtherance of the Syndicate's policy" of ensuring that their examinations become adapted to the educational needs of the countries where they are taken, and with a view to the ultimate control of the examinations by bodies within those countries."

The Higher School Certificate examination in Malaya was conducted jointly by Cambridge and the University of Malaya, by agreement between the two universities.

1959 Training of W.A.E.C. examiners by Cambridge commenced in the larger subjects, the papers in African languages having been set and marked locally for some time past.

1960 W.A.E.C. introduced its own School Certificate in Ghana, where a change in the dates of the school year had made it impossible to hold the joint W.A.S.C. examination at the same time as in Nigeria.

1962 The first residential course for the training of potential W.A.E.C. examiners was held at Ibadan; this was another noteworthy advance, made necessary by the discovery of the deficiencies of "on the job" training on a large scale.

Introduction of the Federation of Malaya Certificate of Education in the medium of Malay.

1963 Dissolution of the Sudan Examinations Council and its replacement by an Examinations Committee of the Ministry of Education which assumed responsibility for the Sudan School Certificate: Cambridge continued to send permanent staff and examiners to attend the awards for some years.

Introduction of the Indian School Certificate Examination.

1964 W.A.E.C. and Cambridge shared joint responsibility for the award of the W.A.S.C. and the award was transferred from Cambridge to Lagos.

1965 Commencement of training prospective W.A.E.C. examiners by London in preparation for the takeover by W.A.E.C. of the London G.C.E. Advanced level examination in Ghana, Sierra Leone and the Gambia.

1966 Assumption by W.A.E.C. of responsibility for the W.A.S.C. in Nigeria, Cambridge continuing to provide administrative staff and examiners to assist in the award.

Papers set and answered in the medium of Malay introduced in the H.S.C. examination in Malaysia.

1967 Establishment of the East African Examinations Council (E.A.E.C.) following a report by the Deputy Secretary of Cambridge.

Commencement of training of W.A.E.C. examiners in subjects of the H.S.C. examination in Nigeria.

Commencement of marking of papers of the Indian School Certificate examination in India by examiners previously trained there.

1968 Assumption of responsibility in Malaysia for much of the pre-examination administrative work for the M.C.E. examination in the medium of Malay.

First examination for the East African Certificate of Education and School Certificate conducted jointly by Cambridge and E.A.E.C. These two bodies also became jointly responsible for the H.S.C. and G.C.E. (Advanced level) examination in East Africa.

1969 Commencement of training of examiners for E.A.C.E. and H.S.C./G.C.E. in East Africa, and subsequent marking there of certain papers in both examinations.

1970 Introduction of the East African Advanced Certificate of Education controlled jointly by E.A.E.C. and Cambridge.

1971 Introduction of joint responsibility by W.A.E.C. and Cambridge for the H.S.C. examination in Nigeria.W.A.E.C. took over responsibility for the issue of results.

Introduction by the Singapore Ministry of Education and Cambridge of the Singapore-Cambridge G.C.E. Ordinary level examination conducted in four language media - English, Chinese, Malay and Tamil.

1972 Assumption of responsibility by the Malaysian Ministry of Education for the Malaysia Certificate of Education in the medium of Malay.

Establishment of the Caribbean Examinations Council.

The programme for the immediate future includes the takeover by W.A.E.C. of the H.S.C and G.C.E. Advanced level examinations for schools in West Africa in 1973, by E.A.E.C. of the East African examinations at both levels in 1974, and by the Malaysian Ministry of Education of the Malaysia Certificate of Education in the medium of English, also in 1974. It is understood that examinations councils have been or are to be set up in

Botswana, Lesotho and Swaziland, and in the South East Pacific, while the Associated Examining Board is assisting in the establishment of local examinations in Malawi and has undertaken to do so also in Rhodesia.

The examining bodies referred to above show considerable variety and diversity in their size, their constitutions, their functions and the circumstances in which they operate. Some are large and others are small; some are organs of Ministries, others are independent statutory bodies; some are international in character while some others operate only within one country. Some may be concerned only with school examinations at what may conveniently be termed Ordinary and Advanced levels while others conduct, or will conduct, also examinations at lower levels than these as well as technical examinations and other non-school examinations. Most have a monopoly of school examinations in the area of their jurisdiction but one is a single body among many others in the same country.

Whatever the diversity which has emerged, however, certain features have, very broadly speaking,been common in the development of those bodies which have taken over, or will be taking over, the examinations of an English board. The first step has usually been the establishment of an advisory body representing the various educational interests in the country or area concerned, to advise the English board on any modifications which may be necessary to meet the local needs, whether in general regulations or in syllabuses. In the first instance the initiative in syllabus reform was taken in England but later the local bodies began to draft their own schemes. The syllabuses which were first modified in this way were those in which the local needs differed between the various areas, e.g. in History and Geography.

The second development has been the institution of the regional examining body and the appointment of the nucleus of its permanent staff, followed by the training of this nucleus in the complex administrative routines of an examination; this training has been carried out with the assistance of the English board either in Cambridge or in London or by advisers sent out from Cambridge for the purpose and it has continued over a period of years as the regional body has expanded. When the initial staff has been trained, the regional body has begun to take over administrative work, usually in the pre-examination routines and in the distribution of results, which had previously been carried out by Ministries of Education or other local authorities. At a suitable point the examination has been re-named in order to indicate the partnership between the regional body and Cambridge and to facilitate further changes which might be desired.

Thereafter has come the recruitment and training of examiners in preparation for the takeover of papers and subjects by the regional body; the first subjects chosen for this purpose have tended to be those in which problems were least likely to arise, e.g. in the field of mathematics and the sciences where there is the least likelihood of divergences of individual judgments between the examiners. The procedure has normally been for experienced examiners to go out from England to conduct courses for selected trainees who, after instruction in the techniques of assessment and in the details of the marking scheme, have marked photographic copies of scripts from a previous examination; the assessments have been studied, discrepancies have been noted and discussed, and at the end of the course the trainees have been graded according to their suitability for employment. This procedure has been built up over the years and alternative methods have been employed to meet particular circumstances. When a panel of suitable

examiners has been established, a senior examiner from Cambridge or London has been sent to take charge of their marking in an actual examination or, where numbers are comparatively small, the examiners have gone to England to mark under a Chief Examiner of the English board. Thereafter, the most suitable members of the panel have been chosen for appointment as Chief Examiners or Team Leaders and these have received further instruction in the techniques of fixing standards and in awarding procedures. The last stage has been the gaining of experience by the regional body's Chief Examiners. in the setting of question papers and the making of marking schemes, and the transfer of the fixing of standards and the award to the regional body with the help of administrative staff and/or examiners from the English board.

Concurrently the regional body has increasingly taken over the administration of the examinations and the modification or replacement of syllabuses has continued, the regional body proposing its own initiatives and the English board transmitting its experience of past and present developments in the U.K. Finally when the administrative work and the examining in the majority of the subjects have been handed over to the regional examining body the latter has assumed sole responsibility for the examination although the English board may have continued and in fact has continued to give such assistance as has been desired and found practicable whether in further training, the temporary loan of staff and examiners, or in examining in some subjects on behalf of the regional body.

The processes which have been briefly described above have involved massive efforts from both sides and generous financial assistance from external sources to the regional bodies. Hundreds of visits both ways have been made by examiners and by administrative and executive staff, hundreds more examiners have been trained, and committees at both ends have been continuously employed on syllabus development. These processes have been evolved partly from first principles and partly through trial and error; techniques have been improved over the period and valuable lessons have been learned. So much for the past. But what of the future? Is it likely that the situations and problems of the coming years will be such that the previous patterns will need to be modified either drastically or in part? Certain questions can be asked even if the answers may not be clear at this stage, if the possible answers may be different in different parts of the world, and if the questions may not be equally relevant to all regional bodies.

In the first place, will social and economic pressures make it desirable to introduce a public examination certified by the regional body at a lower level than the present School Certificate/G.C.E. Ordinary level? The present system, taken over from the English boards, has corresponded to educational approaches which are now appearing outmoded in the U.K. Until some fifty years ago the English boards had an examination for the Junior School Certificate which was needed at a time when the School Certificate was the normal school-leaving examination. When sixth forms were commonly developed and the Higher School Certificate was instituted to meet their requirements the élitist conception of education required that once this highest rung on the examination ladder had been added the lowest, in the shape of the Junior Examination, should be dispensed with. A similar development occurred in 1952 when, despite the protests of the examining boards, the minimum requirement for the certification of a subject was raised from the S.C. subject pass to the G.C.E. Ordinary level pass (equivalent to S.C. pass-with-credit) which by definition only some 50% of the population of the selective secondary schools of that time could hope to attain.

In the previous year the H.S.C. subsidiary subjects had been abolished, leaving the new G.C.E. Advanced level pass as the only rewarding examination objective for the sixth-form - another unwise decision which has led to undesirable results. The wheel has now swung full circle and in these more egalitarian days it has been found necessary to establish a new examination, pitched below G.C.E. Ordinary level, for the academically less able pupils and there is at present discussion of a similar examination, below G.C.E. Advanced level, for the sixth form. In their intention these examinations should be different in nature from the more academic G.C.E. Will a similar development occur also, for the same or different reasons, in other countries than the U.K.?

This question leads to another - the optimum size and structure of an examining body. A large body can benefit from the economies of scale. This is not axiomatic since the Council for the Indian School Certificate Examinations, which is among the smallest of those mentioned in this paper, is so far as the author is aware the only one which meets its costs (apart from exceptional expenses such as those arising from training courses for examiners) from the fees paid by schools and candidates, in spite of the fact that its schools are dispersed throughout a very large country. It remains true, however, that in general the larger the body the smaller are the overhead costs of examining per candidate provided that the scheme of examination is not too diversely complicated and that the administration is efficient. A smaller body on the other hand may find it more easy to maintain essential contact with its schools although experience shows that it is difficult for a small organization to maintain examination standards, particularly if its operations are confined to a single country or a single class of schools or candidates. Against this, a larger body may have difficulty in reconciling proper educational objections with the administrative desiderata for examining scores of thousands of candidates. The problems which face each body will be different. Will a time come when for administrative if for no other reasons a very large international body may find it desirable to establish separate organizations in each of its participating countries, with the international body remaining responsible for policy and for co-ordinating the activities of its various divisions? A distant analogy might be the role of the Schools Council in its relations with the U.K. examining boards. A large body operating within a single country might similarly be led to consider whether separate divisions should be established to conduct different ranges of examinations, these divisions still to be responsible to the same overall control.

The constant large increases in the numbers of candidates for the existing examinations seem likely to continue in the future and the problems will be magnified if additional examinations are introduced. The quality of examinations, like that of all other human activities, depends basically on the people who conduct them. It is of the essence of an examining body, with its grave responsibilities, that errors which can lead to the loss of public confidence should not be made. For this reason it is necessary that an expanding body should be able to attract and train well qualified staff and then to retain them, since in an occupation where the same duties generally recur only once or twice in the year ability alone is not a sufficient substitute for experience. The same applies in equal measure to examiners. There is no doubt that the difficulties of supplying an adequate number of efficient examiners were underestimated in the early years after 1950, particularly in relation to the rapidly rising tide of entries. Since then objective tests have been introduced which, apart from their intrinsic merits, reduce the need for traditional tests and examiners and very

substantial progress has been made in the training of examiners of the traditional kind. The task ahead is still very great, however, as may be instanced by the estimated need for some 1,800 additional examiners in E. Africa and 1,500 in Malaysia to complete the takeover programmes scheduled for 1974. Since there are limitations both to the use of objective tests and to the methods hitherto employed in training examiners there is an urgent need to tackle the problem at its root, as has been emphasized on more than one occasion in the past, by including training in methods of assessment in the programme of preparation for the teaching profession. This should include training not only in the principles of assessment but also in the methods appropriate to the subject which the intending teacher is to teach. In-service courses might also be organized for practising teachers. Such training would benefit the service rendered to education by the examining bodies and also that rendered by the teachers; many teachers have testified to the insight which the experience of examining has given them through the need to give objective consideration to the aims and methods of teaching their subjects. Although careful co-ordination with other authorities would be required the examining bodies could play an important part in the organizing of courses and the provision of instruction.

The future role of the research units of examining bodies may also need consideration in relation to that of other organizations. It can be accepted that the first duty of a research unit should be to evaluate the methods of assessment employed by its parent body, to seek means of improving them, and to explore new avenues. In the U.K. the research units also play a leading part in the scrutinies of standards which are continuously under investigation; for various reasons great stress is laid on the maintenance of standards from year to year within the subjects of a board, between the different subjects of the board, and between the subjects of all the boards. At the same time research into examinations is initiated and/or conducted by other organizations including the Schools Council, the National Foundation for Educational Research and universities. A difficulty arises here in that research conducted by boards into their own examinations may sometimes be considered suspect since the boards may be thought to be acting as judges in their own cause. On the other hand, it is only the boards which possess the necessary data and, sometimes, the experience and knowledge necessary for interpreting it. A further question which arises is whether research units should undertake tasks broader than those which have been mentioned, by giving attention to fields which are not being tended by others. These fields may be of great importance for general educational policy as well as for examinations. Examples which may be quoted from the U.K. are the reliability of Mode 3 examining, a method which has been widely recommended but does not appear to have been adequately investigated, and the effect of various methods of teaching and of the comprehensive reorganization of schools on the attainment of the pupils concerned.

A final question to which the seminar will no doubt address itself is the extent to which the examining bodies of the Commonwealth can give assistance to each other. For many years there has been close and constant communication and contact between the U.K. boards on both policy and practice, mainly through the monthly meetings of their principal administrative officers. This co-operation has proved to be of the greatest value in many ways; information is exchanged, the experience of one board is put at the service of another, and the burden on individual boards can be lightened since projects can be carried out in common and work of interest to all can be shared out, each board in turn undertaking a particular

responsibility on behalf of all. An organization of this kind can of course be mounted with comparatively little difficulty in the U.K. because of the fundamental similarity between the boards and between their problems, and because of the ease of communications. The idea that an organization of some kind should be provided for mutual aid on a Commonwealth-wide basis is attractive. It will remain to be seen whether the problems are too diverse and the obstacles too great to permit of such a development, or whether there is sufficient community of interest and common ground for the idea to be pursued further. At a minimum there might be justification for the establishment of a centre for the dissemination of information and advice.

TRENDS AND PROBLEMS

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1. The development of local or regional examining boards

The most notable trend in recent years has been the development of local or regional examining boards, established to assume responsibility for the secondary schoool leaving examinations (i.e. the School Certificate or GCE 'O' and 'A' level examinations). The largest and perhaps best known board is the West African Examinations Council, which has been in existence for twenty years although, in fact, the University of Cambridge Local Examinations Syndicate was engaged in handing over responsibility for the School Certificate Examination to an authority in the Sudan before the West African Examinations Council existed.

The West African Examinations Council has for some years exercised full responsibility for the conduct of the School Certificate/'O' Level Examination. Because that responsibility was taken over from the Cambridge Syndicate on a gradual programme, which involved training a very large number of examiners, and because the Syndicate continues to take an interest in the affairs of the Council, the West African School Certificate/'O' Level Examination is recognised in most countries where the Cambridge certificates are recognized.

The Malaysian Examinations Syndicate, the East African Examinations Council and the Council for the Indian School Certificate Examinations are all at present working in collaboration with the Syndicate to take over responsibility for the School Certificate/'O' Level Examination, and the Caribbean Examinations Council (very long in the process of gestation) has recently been established to undertake a similar responsibility. Malawi is being helped by the Associated Examining Board to assume responsibility for its School Certificate Examination and other areas (e.g. the South Pacific, and Botswana, Lesotho and Swaziland) have aspirations of a similar nature.

The desire for academic independence at the School Certificate level is a natural corollary of political independence and of the establishment in developing countries of universities which award their own degrees. Although the general pattern is that teachers and others engaged in education in developing countries have no serious complaints about the Cambridge examinations which are taken in most of them (apart from the long period which inevitably has to elapse between the examination and the issue of the results) it is usually felt that a locally controlled examination would be more readily adaptable to the local needs. As this feeling grows, even in countries or regions which do not produce a sufficient number of fifth formers to make the establishment of a local or regional examination a sound financial proposition, at fees of the same order of magnitude as those charged by the Syndicate, consideration is given to the possibility of establishing local or regional boards despite the financial and other difficulties. For example, I was recently commissioned by the University of Botswana, Lesotho and Swaziland to carry out a survey of the possibility of establishing a local examination under the aegis of the University of Botswana, Lesotho and Swaziland Examining Board which at present conducts a Form III Examination. At the end

of last year I undertook a similar mission in the South Pacific. In neither of these regions is there, or will there in the immediately foreseeable future be a sufficient number of candidates to spread the overhead costs in a way such that an examining board could be self supporting from the modest fees which can be charged to candidates. Yet is was evident that there was a body of responsible opinion in favour of change and that there was sufficient enthusiasm at the political level to make it likely that government subventions would be forthcoming.

Finance is not the only constraint. When the number of candidates is small it is difficult to establish and maintain sound and stable standards because little reliance can be placed upon statistics. Moreover, even if reliance could be placed on statistics there is always a danger of falling standards when educational systems expand rapidly.

One sometimes wonders how long certain regional boards will last. One knows, for example, that it took a very long time to secure the agreement of all the countries concerned in the establishment of the Caribbean Examinations Council and that although Tanzania still supports the East African Examinations Council it does not use that Council's secondary leaving examinations. I got the impression from many people I met in Botswana and Swaziland that they would prefer, in an ideal world, to run their own national shows, although they recognized that with such small numbers the only way they could dispense with examinations from overseas would be to cooperate on a regional basis.

Although one of the most valid reasons for establishing regional or local boards is that the existence of such boards should make it possible to bring about radical change in the curriculum where environmental factors make such change desirable, it does not always follow - despite the existence of, often elaborate, consultative machinery - that the changes brought about command the support of the majority of the teachers. Possibly the lack of indigenous graduates with long experience in the classroom makes it too easy for university personnel to dominate the subject panels and committees concerned. It may be that the geographical factors make it difficult to establish adequately representative fora. But whatever the reasons, it does happen that local boards sometimes produce syllabuses which are too demanding or too far ahead of their time. For example: the West African Examinations Council has run into difficulty with an advanced level syllabus in chemistry and with the ordinary syllabus in French; and the teachers in Botswana, Lesotho and Swaziland said almost to a man (or woman) that the syllabuses for the Cambridge Overseas Certificate were, in general, much more satisfactory than the local syllabuses for the Form III Examination.

One would think that local or regional boards responsive to the needs of their social and economic environment would introduce new studies such as horticulture, agriculture, animal husbandry, but there is little evidence of this. The general trend seems to be to follow the conventional British elitist academic pattern.

One difficult problem which confronts countries or regions which exist to establish their own secondary leaving examinations is that of securing international recognition; even where local universities exist which have an extensive range of faculties, it is almost always necessary for some students to be sent abroad to study in specialised fields, and in any case professional and general public opinion invariably appears to demand that any local examination shall be so conducted that it enjoys the same prestige as the

metropolitan examination which it replaces. It follows almost inevitably from this that any local examinations must be conducted in collaboration with an experienced overseas body for an initial period and that training must be provided for markers, chief examiners and moderators. There are eight GCE boards in Britain but of these only three (the Cambridge Syndicate, the Associated Examining Board, and the London University School Examinations Department) have any worthwhile experience of examining overseas. In fact London University has confined itself mostly to examining private candidates, who in general have to take whatever syllabuses are provided for British candidates, whilst the Associated Examining Board has not so far had to deal with the problems which arise when very large numbers of candidates in overseas countries are to be examined and a large number of local examiners have to be trained. It follows from these facts that not all areas which wish to receive the assistance of British boards to enable them to develop their own examinations can be helped at any given time. Thus, for example, because of its existing commitments to other areas, the Cambridge Examinations Syndicate was unable to meet a request from Malawi a few years ago for assistance with the development of the Malawi School Certificate Examination and Malawi therefore had to seek the help of the Associated Examining Board. The provision of help of this nature makes very great demands on the host boards. It might be argued that the answer would be for them to recruit more staff so that they could provide help from all developing countries which need it, but work of this nature cannot be entrusted to new members of staff and must fall on old hands, who are limited in number and who have other commitments. The Associated Examining Board, for example, has found that its programme of collaboration with Malawi is exceedingly demanding of senior staff time: so much so that it will be unable to contemplate any further commitments overseas until the commitment to Malawi has been discharged.

Another problem which has arisen in connection with the establishment of local or regional examining boards is the scope of their activities. The West African Examinations Council was often looked upon as one of the wonders of the examining world and it is indeed remarkable that this body has been able to conduct examinations in practically all fields and at all levels short of a university degree in four countries. But this has been achieved at considerable cost in men and money. A prodigious amount of paper circulates among the members of the Council and one wonders whether progress in some fields would not have been quicker had the work-load been less diverse. I understand that the East African Examinations Council was at one time in great difficulty administratively and I wonder whether this was because the Council succumbed to pressure to attempt to assume responsibility for examining in technical subjects at the same time as it was trying to take over responsibility for the 'O' and 'A' level examinations. Since there is a limit to the span of effective management, however competent the top management may be, I think new boards would do well to restrict the scope of their aspirations and not to ramify until they have successfully assumed responsibility for their major commitment, which is generally the secondary school leaving examinations.

2. The introduction of assessment by candidates' teachers as part of or to replace external external examinations.

The movement to introduce internal assessment of one kind or another (including continuous assessment) which has been gaining pace in some of the older Commonwealth countries in recent years is beginning to make itself felt in some of the less developed countries. Internal assessment has

replaced secondary school leaving examinations in some states of Australia; in New Zealand it has (under the name of "accreditation") virtually replaced the University Entrance Examination although the external examination is available for those who want it, presumably as a safeguard against arbitrariness on the part of heads; and it is well established in many of the CSE Boards in Britain.

There is considerable interest in Fiji in using internal assessment for part of the Form IV Examination (which is used for the purpose of certification of leavers and for the selection of entrants to Form V). It is understood that in the Bahamas it is intended to introduce a secondary leaving certificate based on school assessment at the Form V level. Considerable interest in internal assessment exists elsewhere in the Commonwealth, although these are the only cases in developing countries known to the writer where internal assessment appears to be on the point of being adopted as part of public examinations.

The introduction of internal assessment, whether by the "continuous assessment" or by the evaluation of course work, of project work or practical work, presents certain problems. These are admirably dealt with in the Fijian context in a report recently prepared by Mr. J.A. Winterbottam, Secretary to the North Regional Examination Board, of which copies are available for perusal during the conference.

The main problems are:

(a) It is not in every society that there will be a sufficient degree of confidence in the impartiality and expertise of teachers. Where, for example, there are strong racial or tribal divisions within a country, the game could be thought not to be straight even though in reality it might be. In any case even in cohesive communities the public would, very probably, doubt whether certification was on a common standard unless there were careful external moderation of the school assessments.

(b) In countries where a large proportion of the members of the teaching profession is poorly qualified and of limited experience, the introduction of internal assessment, especially in the upper secondary school, must be tackled with caution and must be preceded by training.

(c) The use of internal assessment is likely to cost considerably more than the traditional centrally set examinations. It is noteworthy that the fees charged by the CSE Boards in England per subject are roughly double those charged by the GCE Boards; the fact that the CSE Boards are in most cases concerned with fewer candidates than the GCE Boards is, of course, also a factor contributing to their high costs.

3. Examinations at the Form III or Form IV Level

Because of the high cost of secondary education and the lack of graduate teachers, a number of countries have secondary schools which do not go beyond Form III or in some cases Form IV. Those countries find it necessary to provide an examination which leads to the issue of certificates of use to leavers seeking employment and the results of which are used to select those who are to go to the upper secondary school.

The need for such examinations is likely to continue to exist and may increase because although some countries wish more of their pupils to have the benefit of some sort of secondary education they do not all wish to take a high proportion of the age group up to GCE 'O' level and flood the labour market with more or less educated people for whom there is no suitable employment available. It is to be expected that an increasing attempt will be made to provide, on a wide scale, a few years of secondary education of a less academic and of a more "relevant" nature than that found in grammar schools. Where this happens the need for certification will exist and so, presumably, will the need for some selection technique to determine which pupils will go through the full secondary course.

Examinations at the Form III and IV level are generally unpopular as the teachers find that they have an inhibiting effect on the curriculum of the lower secondary school, and it sometimes happens that they are also unpopular because the syllabuses do not lead on in a logical way to those of the school certificate or GCE 'O' level examinations. It is surprising that this should be the case since the syllabuses are under local control, though it is inevitable that there should be some differences between the approach to the curriculum in the lower secondary school and that in the upper. If the need for the certification of leavers did not exist it might be possible to use other means to determine who goes on to the upper secondary school. Tests of scholastic aptitude supplemented by school assessments might be a better means of selection but these approaches bring their own problems: for example, although there is some evidence that it is not (as the purists once thought) impossible to use validly in one country tests of aptitude which have been found suitable in other similar countries, it is necessary to ensure that any imported tests do not present avoidable linguistic difficulties nor alien cultural content and most workers in this field would regard it as essential that material be prepared which of course raises security problems.

4. Examinations for Primary School Leavers

Most countries can provide secondary education only for a rather small proportion of the age group and therefore find it necessary to use examinations to select those pupils who wish to go into the secondary schools, which are almost all of the grammar school type. Many countries still find it necessary to issue a certificate for primary school leavers on the results of a centrally set examination even tough the economic value of such documents is rapidly diminishing as opportunities for post-primary education increase. In several cases the same examination is used for both purposes. In a few countries machine-marked objective tests of attainment, and occasionally, of aptitude are used; in others the arrangements are more primitive but even where sophisticated processing techniques are used and where some resource is had to psychometric knowledge in constructing the objective tests, it is not unusual to find rather poor examinations. For example, one particular weakness is the widespread use of history, or geography or so called "general' papers which require a pupil to have a store of snippets of unrelated and mostly useless information. The "back-wash" effects of such tests must be deplorable, yet it is frequently argued that such tests are necessary so that due attention may be given in the classroom to rudimentary geography, history and social studies. The mathematics tests, too, often leave much to be desired because of their undue emphasis on computation and their lack of attention to problem-solving ability.

Examinations for primary leavers are difficult to conduct fairly in developing countries even when expert knowledge is brought to bear because

the tests of attainment are almost as much tests of the child's teachers and home background as they are of the child's innate ability. This unfortunate fact was highlighted some years ago in Ghana where although the government of the day was dedicated to the cause of greater social and economic opportunity a perusal of the results of the secondary entrance examination showed clearly, every year, that the children who had been to certain fee paying preparatory schools, largely staffed by native speakers of English, occupied most of the first two or three hundred places and so they were sure of entry to the elite schools where they would obtain an excellent (and subsidized) secondary education.

The problems in this field are difficult, as one would presumably not wish to devise examinations which would in some way penalise pupils who had good teachers and came from prosperous English-speaking homes. Probably the most that can be done is to ensure that the examinations are reliable and valid and to use for secondary selection purposes only the results of those tests which are known to be reasonably good predictors of success in the secondary school: that is tests of verbal and mathematical ability and attainment. Research in older countries has indicated that teachers' forecasts are the best single predictor but it is unlikely that this will prove to be the case in countries where so many of the primary teachers are uneducated, undertrained and inexperienced. Moreover there is a question of public confidence to consider.

5. Examinations for Selection

The results of all the examinations discussed in the preceding sections are used to select pupils to go on to the next stage of education. The examinations are also used to motivate the teachers and children and as a basis for the issue of certificates. These aims are not necessarily always compatible. For example, it is difficult to compile an examination which is a fair test for the children of average ability and even of somewhat below average ability, to whom it is desired to issue certificates of attendance and of performance at some modest level, and also to select the most able fifteen or twenty per cent who are going on to higher things.

It is often found that there is not a very high correlation between the results of the GCE 'A' level examinations and results at a university, and, of course, not all that elite minority of an age group which enters a secondary school leaves it with distinction. The use of measures additional to conventional essay or objective tests of attainment, and the improvement of such tests, can do something to improve the situation, but it must be recognized that no examination provided for a growing child or a maturing adolescent can ever be a perfect predictor. The subject's personality is changing all the time.

6. The improvement of examining techniques

Where local or regional boards have been established to conduct the School Certificate or 'O' level examinations, the provision of appropriate training for markers and chief examiners results automatically from the links with the Cambridge Syndicate or the AEB. It is apparent, however, that at other levels the examining techniques employed leave much to be desired. There is a great deal of scope for training people to set papers, to draw up marking schemes, and to conduct coordination meetings.

Where objective tests are used or it is proposed that they be used, it is necessary to ensure that those concerned in their construction are trained in item writing and test construction. In some areas this training has been provided by American sources, for example, in West Africa the research unit of the WAEC has for many years received assistance in personnel and money from the USA and the Regional Testing Service which serves Malawi, Botswana, Lesotho and Swaziland is also assisted by USAID.

The possibilities of aid from British sources are discussed in section 9 of this report and will doubtless form an important topic of discussion at the conference.

7. Security

In most developing countries the security of examinations is frequently under attack. In some, it is apparent that there is a lack of attention to this matter, and it is surprising that there are so few irregularities. It is necessary to take strict security precautions at all stages from the drafting of the manuscript to the delivery of the sealed packet of papers to the examination hall. The West African Examinations Council has over the years built up elaborate techniques, although even these cannot prevent certain types of irregularity at centres and the most that can be done to deal with certain aspects of security is to set up moral barriers. The WAEC's security system will repay study by all concerned with examinations.

8. Examinations Branches of Ministries of Education

Most Ministries of Education have an examinations branch, responsible for conducting local examinations such as the secondary entrance and Form III examinations and for making arrangements for the conduct of imported examinations. In many countries which I have visited the post of officer-in-charge of the examinations branch is of far too low a status and the staff at the officer's disposal is inadequate both in number and in seniority. Too often there is a lack of professional knowledge. It is not, therefore, surprising, that certain locally set examinations leave much to be desired. There is a widespread need for training in both the professional and the administrative aspects of examinations. Investment in such training would pay dividends quickly in terms of better examinations and would lay a foundation for the development of local or regional examining boards later on.

9. External aid for the development of examinations

Hitherto, the main British sources of aid in the development of examinations has been the Overseas Development Administration (ODA), CEDO, and the British Council. These between them have not been able to make funds available on a scale adequate to provide for the multifarious needs of all the developing world and it is encouraging to learn that the Commonwealth Secretariat is likely to be able to find the funds for training on a considerable scale. O.D.A. has been concerned mainly with the provision of British chief examiners to conduct courses to train local markers. It first gave assistance in this matter to the West African Examinations Council in 1961 and continues to do so. It has also helped the East African Examinations Council, and the Malawi Examinations Board. It has also provided occasional consultants, e.g. it provided an officer experienced in organising examinations to work in the Caribbean for about a year on the problems involved in establishing a Caribbean Examinations Council and in conducting various examinations in Jamaica, and has provided a number of awards under the Commonwealth

Bursars (now Commonwealth Educational Study Fellowships Scheme) to enable people to study the theory and practice of examining in Britain.

The Council for Technical Education and Training for Overseas Countries (TETOC) has at its disposal funds granted by O.D.A. which can be used to assist the development of technical and commercial examinations. TETOC has assisted several countries by arranging for senior officers of the City and Guilds of London Institute and of the Royal Society of Arts to visit them with a view to modifying the syllabuses for the examinations which those bodies make available overseas to meet local needs.

CEDO has provided assistance for training examiners on a smaller scale and has approved a number of study visits to Britain for administrators and chief examiners. It has also provided consultancy for a number of countries or regions. The British Council has been mainly concerned with study visits.

There is a clear need to define the types of help needed and to consider how best the various potential donors could assist if asked. The conference in Accra provides a most welcome opportunity to plan the way ahead.

THE ROLE OF A REGIONAL EXAMINATIONS COUNCIL

T. Boatin
Senior Deputy Registrar
West African Examinations Council

In preparing a paper on such a subject it would be wise to adopt the teacher's dictum of starting with the 'known' and proceeding to the 'unknown', but on this occasion I would not attempt to explore the unknown. Any such attempt would be sheer presumption on my part for two reasons: first, because I know very little about what is going on in other regional examinations councils; and secondly, because there will be amongst us authorities who are well qualified to reveal to us what I refer to as the 'unknown'.

We in West Africa know of a few regional examinations councils in other parts of the world. We know, for example, of the East African Examinations Council, - our counterparts from that area having visited us on two occasions to study our procedure and compare notes on the many and diverse problems facing us -, an examinations council in the Carribean, the writer having corresponded with one of the officers involved in it, a delegation from there also having paid us a visit in Accra. From the list of invited participants I find that a South Pacific Examinations Council is either being established or has been established. There may be some such other bodies in the Commonwealth operating either as we of the West African Examinations Council are operating or doing so with some modifications. As we hear very little or nothing about them either directly or indirectly through bulletins or annual reports that one may lay hands on in a library, it would be unwise in dealing with such a serious topic to speculate or assume what is going on without facts and, perhaps, figures to substantiate what one states.

Here I would like to say, if I may, that one of the most important things that a seminar of this sort is sure to achieve is the creation of an avenue for the interchange of ideas and experience in the field of public examinations, either conducted on a regional or international or purely national basis. We shall, I hope, in the course of this seminar, learn a great deal about the efforts and experiences and achievements, and, perhaps, even failures in the experiments that we have been carrying out, and it is hoped that after this planning seminar there will be a steady flow of literature and interchange of ideas among the examining boards of the countries represented so that we may acquaint ourselves with the problems that exist in one another's examinations council and seek solutions to them in a concerted and co-ordinated way and not in isolation. The subject of examinations is so paramount in the educational world that no one country, whether developed or developing, can grapple with it alone and hope to achieve entirely satisfying results.

After this rather long preamble, perhaps I should restate the topic of this paper, namely, the "Role of a Regional Examinations Council" and I would add, "with special reference to the West African Examinations Council".

One would, first of all, like to know the circumstances that led to the setting up of this Council, and what role it was intended to play in the educational development of the former British Territories of West Africa. Then, one would go on to examine the role it has played, and it is still playing, how far it may have succeeded or failed, and whether it is in the

best interest of the countries that the Council serves to continue to play the role either in its present form or in a modified form or whether, in fact, it has outlived the function it was originally meant to perform, having fulfilled the aspirations of those whose vision led to its establishment and, if so, whether there is any justification in perpetuating it in its present or in a modified form. The West African Examinations Council is 21 years old this month and questions such as those I have only touched upon have been in the minds of many educationists who hold divergent views on all forms of examinations, whether they be "external" or "school" or for selection to jobs or higher institutions or for mere certification.

Here, one must introduce the name of the late Dr. G.B. Jeffery who was, in October 1949, invited by the British Secretary of State for the Colonies to visit West Africa to study and advise on "a proposal that there should be instituted A West African Schools Examinations Council". After a three months' tour, visiting the Gambia, Sierra Leone, the Gold Coast and Nigeria, he submitted a report, since known as the Jeffery Report, strongly supporting the proposal for a West African Examinations Council. The report published in March 1950 was adopted by the four West African Governments and an Ordinance establishing the Council as a Corporate Body was drafted by the West African Inter-Territorial Secretariat in consultation with the Governments and was first passed by the Legislative Assembley of the Gold Coast in December 1951 as the West African Examinations Council Ordinance No.40 of 1951, and later made effective by enactments by the Governments of Nigeria, Sierra Leone and the Gambia.

Functions of the West African Examinations Council

The Act spelt out what the Council was appointed or expected to do. Parts of the functions which have a direct bearing on the topic under discussion are as follows:-

(a) "to review and consider annually the examinations to be held in West Africa, for the purpose of furthering the public interest in West Africa;"

(b)(i) "to conduct such examinations as the Council may think appropriate to the purpose of the Act and to award certificates and diplomas on the results of the examinations conducted;"

(ii) ".....that no examination shall be conducted in West Africa having a lower standard than any examination of equal status conducted under the provisions of the Act;"

The Council has conducted two categories of examinations; namely, National and International examinations. The National ones include the Middle School Leaving Certificate Examination (Ghana) or the First School Leaving Certificate (Nigeria), the Form 111 Examination in Sierra Leone, Civil Service examinations, Teachers' examinations for entry into Training Colleges and for certification at the end of the final year course, and the Common or Selective Entrance examination. These examinations are based on syllabuses prepared by the appropriate bodies in the different territories in line with the policy of education or recruitment in those territories. Nevertheless, for the Common Entrance examination in Ghana, like its counterparts in Nigeria, Sierra Leone and the Gambia, though serving a national purpose, the Council has always aimed at a common standard, a standard which is acceptable in the four countries for selection to secondary

schools. Thus, a candidate who qualifies to be considered for selection into a secondary school in Ghana is deemed to have qualified for entry into any of the secondary schools in the other territories.

The international examinations, which in fact determine more than anything else the inter-nationality or regionality of the Council's activities, are the School Certificate/G.C.E. and the H.S.C./G.C.E. 'A' Level examinations. The same syllabuses, prepared by international panels comprising specialists in their fields from the four territories, and approved by the Council are used for setting question papers for the examinations which are taken by candidates in those territories. Certification is an internationnal exercise and the certificates awarded are recognised and accepted without question as minimun requirements for entrance to the higher institutions not only at home but also abroad.

This has not only meant a continuous, tireless and painstaking exercise, involving school-masters and university lecturers, in the modification of syllabuses prepared by the Cambridge Syndicate and the School Examinations Department of the University of London for examinations meant for candidates in Britain, and in some cases drawing up new syllabuses to suit the needs and in conformity with the aspirations of the peoples in this vast West African region, but it has also meant that the scrutiny of the administration, the content of the syllabuses and the qualifications and experiences of those who do the actual examining for the West African Examinations Council, by overseas examining bodies and higher institutions has yielded good results. On the condition for recognition Dr. Jeffery has this to say: "Recognition is accorded to examinations on their established record over a period of years for efficient and scrupulously impartial administration, for the quality and standing of the examiners, and for the standard maintained in practice". Having fulfilled those conditions the West Afrcian Examinations Council has played its role very well indeed.

With the achievement of a common and acceptable standard of certification at the pre-university level in English-speaking West Africa (except Liberia) the West African Examinations Council has also achieved one of its immediate, though indirect objects; namely, to help and encourage West African Schools, by means of examinations, to improve and consolidate their work up to the School Certificate/GCE level, and to go on beyond that to the H.S.C./G.C.E. 'A' level. It is heartening to observe that during this period of 21 years the number of secondary schools presenting candidates for SC/G.C.E. and H.S.C./G.C.E.'A' Level in Ghana, for example, has increased from 24 to 214 and 6 to 52 respectively. As a result, a student who holds the H.S.C. or G.C.E. 'A' Level certificate with the requisite number of passes and quality of grades awarded by the West African Examinations Council has no difficulty in securing a place overseas where there is a vacancy. This is by no means achievement within a space of twenty-one years. One wonders whether, working in isolation, each of the four territories in question would have attained so much in so short a time.

Having, without doubt, achieved the desired measure of recognition outside West Africa, through dint of hard and devoted work by all who have had a hand in this gigantic and, in many ways, unique educational experiment, and granted the assurance that there will be no sliding back or even relenting of effort in maintaining the standard reached, the question that some educationists now pose is - Is it any longer necessary or desirable to continue to work under the huge umbrella of a regional council, as the West African Examinations Council? Some even doubt whether what they spitefully term

a colonialist or neo-colonialist organisation was necessary. These questions obviously need careful and serious examination and will undoubtedly be given due attention during the seminar.

However, whether a regional examinations council is the best instrument or not for achieving the objectives referred to above, some factors will need consideration, as they will determine how broadly or narrowly the concept of a regional grouping can be accepted and implemented. These are:

1. The Stage of Development

The stage of development that a region has reached in its objective, assuming that the objective is as stated in the preceding paragraph, can be a determining factor. Obviously, there is a great advantage in a group of countries joining together during the early stages of such an experiment to achieve its goal. There certainly is a lot to gain in the exchange of ideas internationally. Equally important, where owing to the paucity of higher institutions in an area, students who desire or are fitted to enter upon university studies abroad have a better chance of gaining admission overseas with a certificate signed by a responsible regional body. But where the standard in the universities in a country is recognised and respected, and those universities can accommodate the deserving students from the secondary schools, then the fear that unless examinations are administered and conducted on a regional scale the products of the secondary schools may not gain entrance to higher institutions does not arise. As an adjoint one may ask, "What is the percentage of those who leave secondary schools to go to universities, in any year, any way?"

II. Size of the Region

The size of the region or countries in the region should be an important factor. Whereas Nigeria, for example, with its huge population, its facilities, and experience in examining, and its universities keeping an eye on the standards achieved in schools and insisting on the minimum entry requirements, can say that it no longer needs the West African Examinations Council umbrella to pursue its objectives, our sister country, The Gambia, could not for various reasons take that stand. A regional examinations council is essential in this case if The Gambia is not to go back to the Cambridge Local Examinations Syndicate for its examinations, and at the same time lose the knowledge and experience it has gained, by association with its sister countries, in the drawing up of syllabuses, and examining, to mention only two of the benefits.

III. Communications

Communications can plague the work of a regional examinations council to such an extent as to disrupt its administration completely. Means of communication leave much to be desired in many developing countries, and where communications are bad over a large region they affect the programme of work, and in the final analysis, the timing of the issue of results and certificates goes out of gear. With the discontinuation of the despatch of scripts from West Africa to London and Cambridge a great deal of time and money has been saved. One might go a step further to say also that time and money would be saved if scripts had not to be sent from one country to another in West Africa for marking. Obviously there is a time when such movements of scripts are inevitable, but the time should surely come when these should no longer be necessary.

IV. Finance

The cost of examining on a regional basis and financial implications have engaged the thoughts of many critics of the present set-up in West Africa. It must be admitted that the cost of drawing up syllabuses, involving transportation of specialists from one country to another in the region, the cost of international meetings of the various committees of the Council, the cost of transporting large numbers of examiners from one country to another and the movement of staff - all these have been a great drain on the resources of the Council but one has got to weigh this expenditure against the great benefits that the four countries in the West African set-up have derived through this association.

Financial implications resulting from different currencies in the region must be carefully considered in any regional set-up. Devaluations can cause havoc. At the moment Ghanian members of the international staff of the West African Examinations Council serving in Accra are paid salaries at the exchange rate of ¢2.86 to £N, the Nigerian pound being used as a basis for the payment of salaries, whereas their counterparts (including non-Ghanaians in Ghana) serving in the other territories enjoy a conversion rate of ¢3.90 to £N. Such a situation is untenable and cannot make for that contentment and harmony which should characterise work in a regional organisation, such as a regional examinations council.

V. Terms and Conditions of Service

It is most important that the Terms and Conditions of Service of the international staff or staff appointed by a committee representing the countries that form a regional examinations council should be identical as far as practicable in the participating countries. In short, a regional examinations council should have for its staff Terms and Conditions of Service which are not particularly geared to the government of any one country or to what obtains in an institution in any one country. Although what obtains in the various governments or institutions may be used as a basis for that purpose the Terms and Conditions of Service should reflect the international or 'regional' nature of the organisation in such a way as not to be disturbed by changes, financial or otherwise, in any member country.

VI. National Aspirations

It is argued in some quarters that a regional examinations council makes it difficult for each country to pursue its own policy in education and can therefore stifle its objectives. Nothing could be farther from the truth. The West African Examinations Council does not impose its will on any of the four countries it serves. As has been mentioned earlier, the syllabuses for the international examinations are prepared by working parties and panels on which sit representatives of the various Ministries of Education. The government of any of the four territories can request the West African Examinations Council to conduct an examination based on its own syllabus with a bias on any aspect of its educational policy. The question as to whether a certificate awarded for such an examination will be recognised beyond the frontier of that country is another matter.

Finally, in advocating the setting up of a regional examinations council or pursuing an organisation of such a nature it must be made quite clear what its role is, or should be. A lot has already been said regarding what it is expected to do. Perhaps one should also say one thing that it is not expected to do. It is not expected to play the role of a political instrument bridging any gaps that there may be between the countries it serves, nor is it to play the part of a conciliator. This must be made quite clear at the very beginning. That is the only way to keep it clear of political manoeuvres and other interruptions. Often, reference is made by high-ranking politicians at inauguration meetings to the fact that in West Africa where fragmentation in many fields has taken place the West African Examinations Council is the only body that has stood the test of time in spite of national aspirations after the independence of the four former colonial territories. It is gratifying to hear that, but it must be stated that the Council's activities have transcended political, economic, cultural and other boundaries because the Council has kept its eyes on its role in the building of a nation. That role is purely and simply educational.

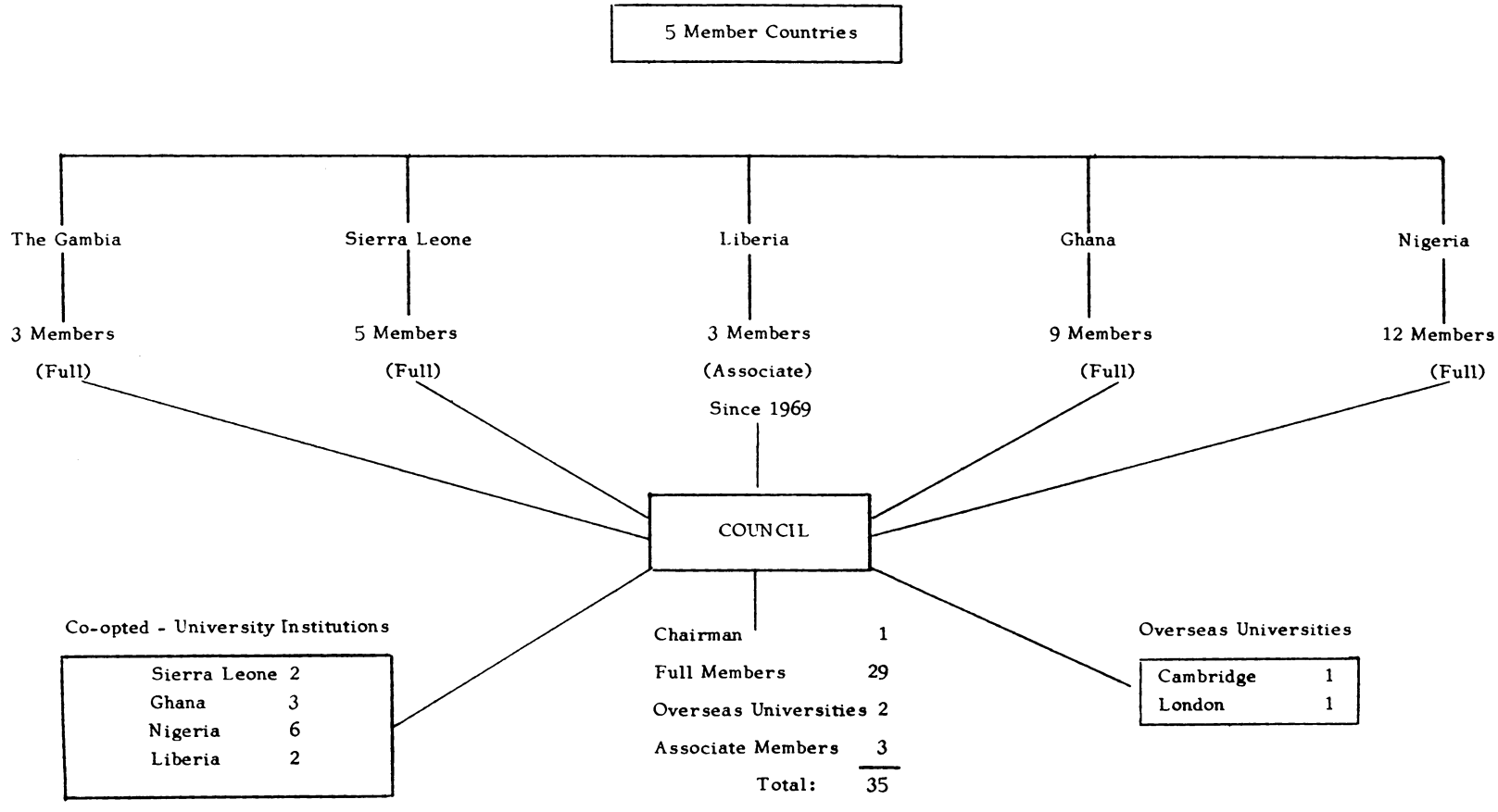
THE WEST AFRICAN EXAMINATIONS COUNCIL

ILLUSTRATED BY DIAGRAMS

DIAGRAM 1

THE WEST AFRICAN EXAMINATIONS COUNCIL:

HOW CONSTITUTED



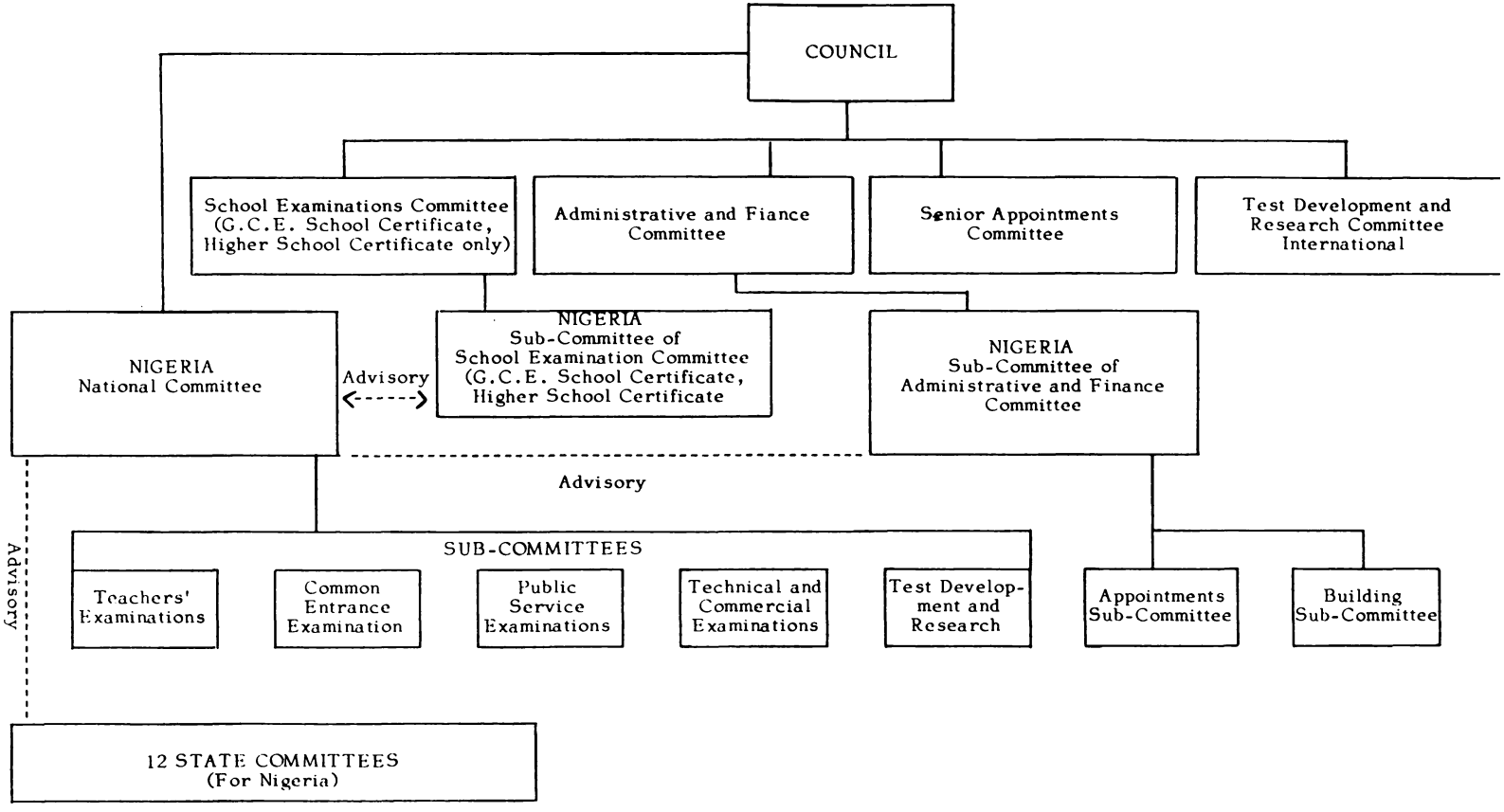
NOTE:

Revised constitution when enacted provides direct representation for University Institutions of member countries and for participation by other West African countries.

DIAGRAM 2

APPENDIX A

THE COMMITTEE STRUCTURE OF THE COUNCIL*



*The arrangements for The Gambia, Ghana and Sierra Leone follow this pattern except that there are no State Committees in those countries.

DIAGRAM 3

THE COUNCIL'S ADMINISTRATIVE STRUCTURE

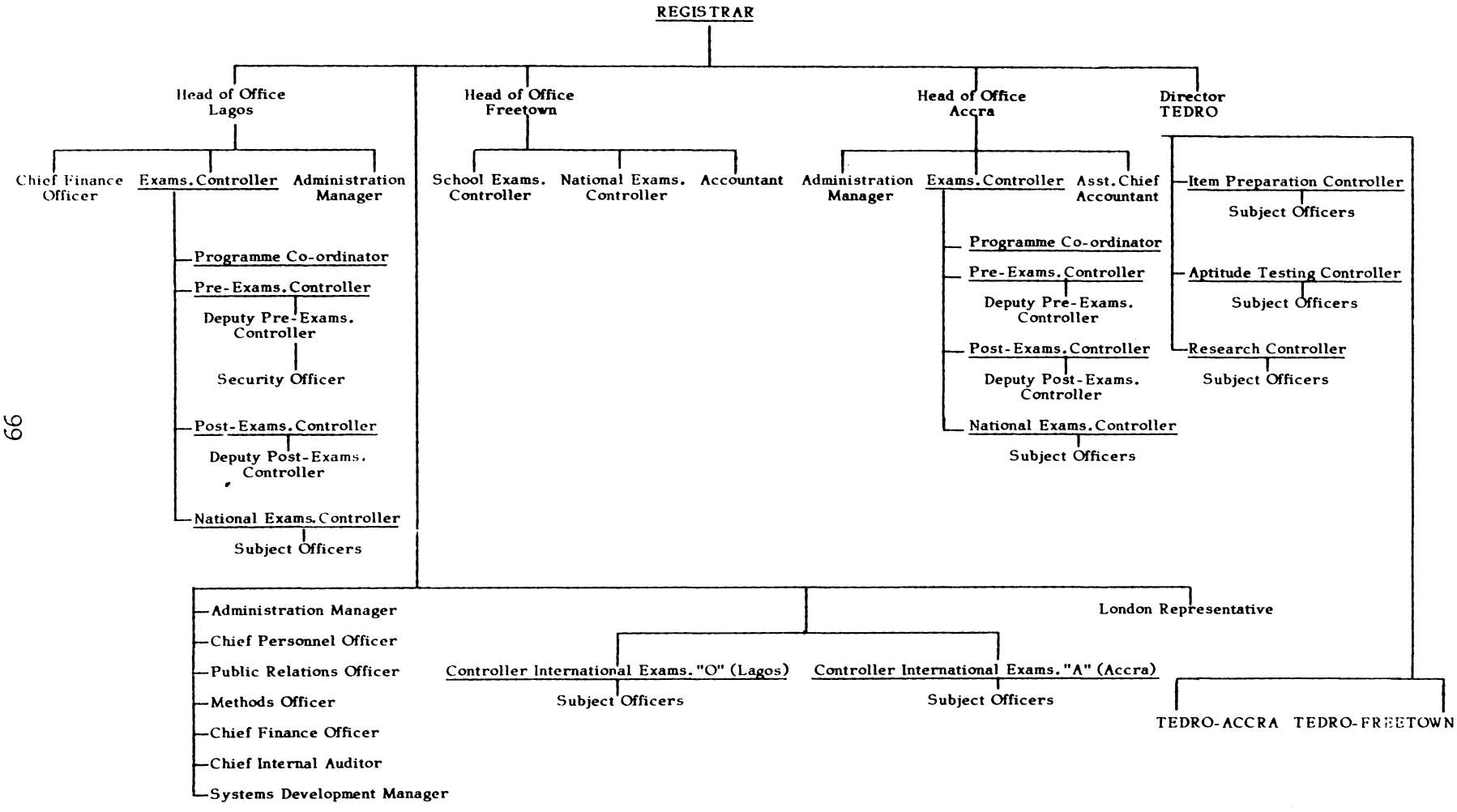


DIAGRAM 4

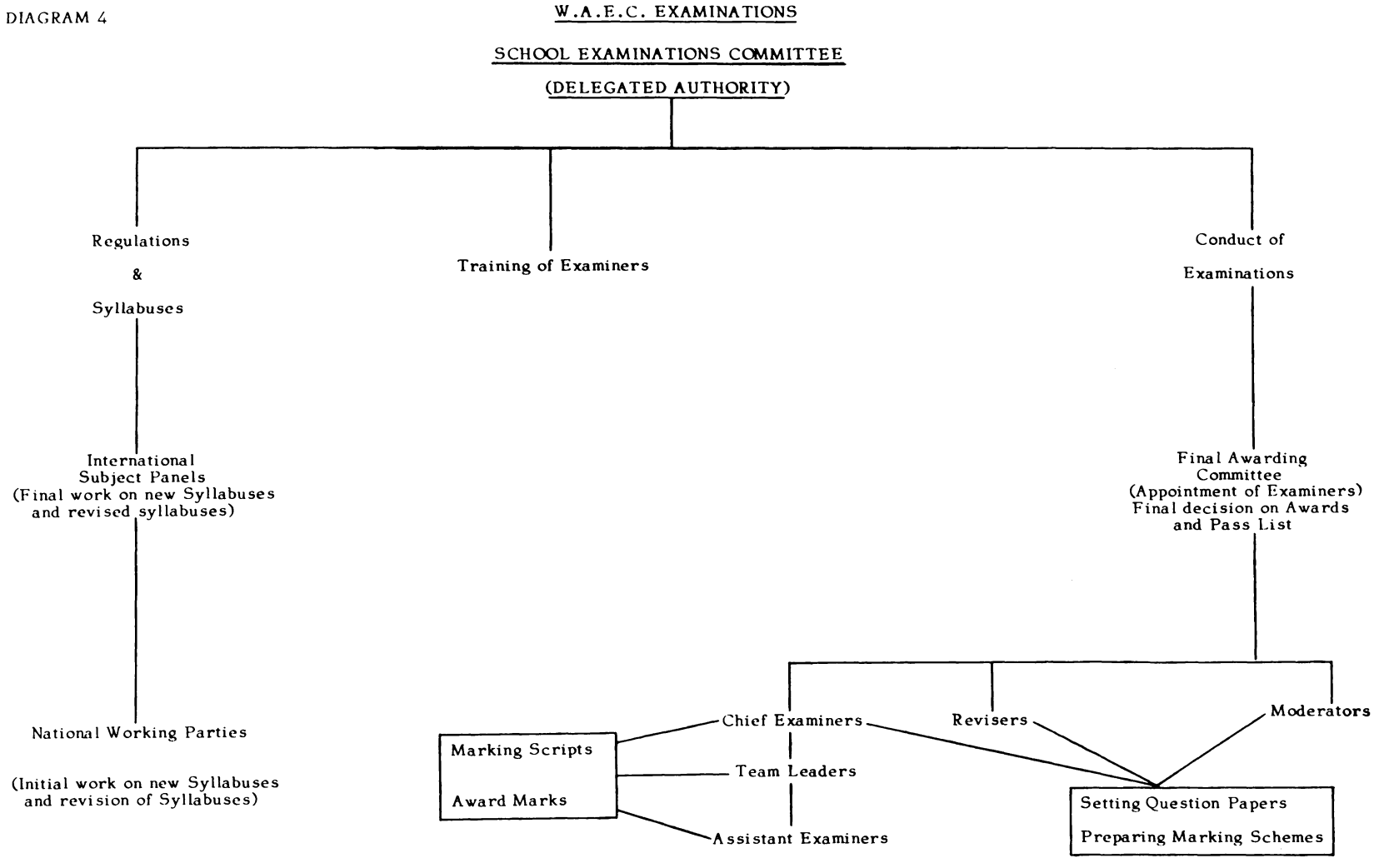

W.A.E.C. EXAMINATIONS
SCHOOL EXAMINATIONS COMMITTEE
(DELEGATED AUTHORITY)
Regulations & Syllabuses
Training of Examiners
Conduct of Examinations
International Subject Panels (Final work on new Syllabuses and revised syllabuses)
National Working Parties (Initial work on new Syllabuses and revision of Syllabuses)
Final Awarding Committee (Appointment of Examiners) Final decision on Awards and Pass List
Chief Examiners
Revisers
Moderators
Marking Scripts
Award Marks
Team Leaders
Assistant Examiners
Setting Question Papers
Preparing Marking Schemes

DIAGRAM 5

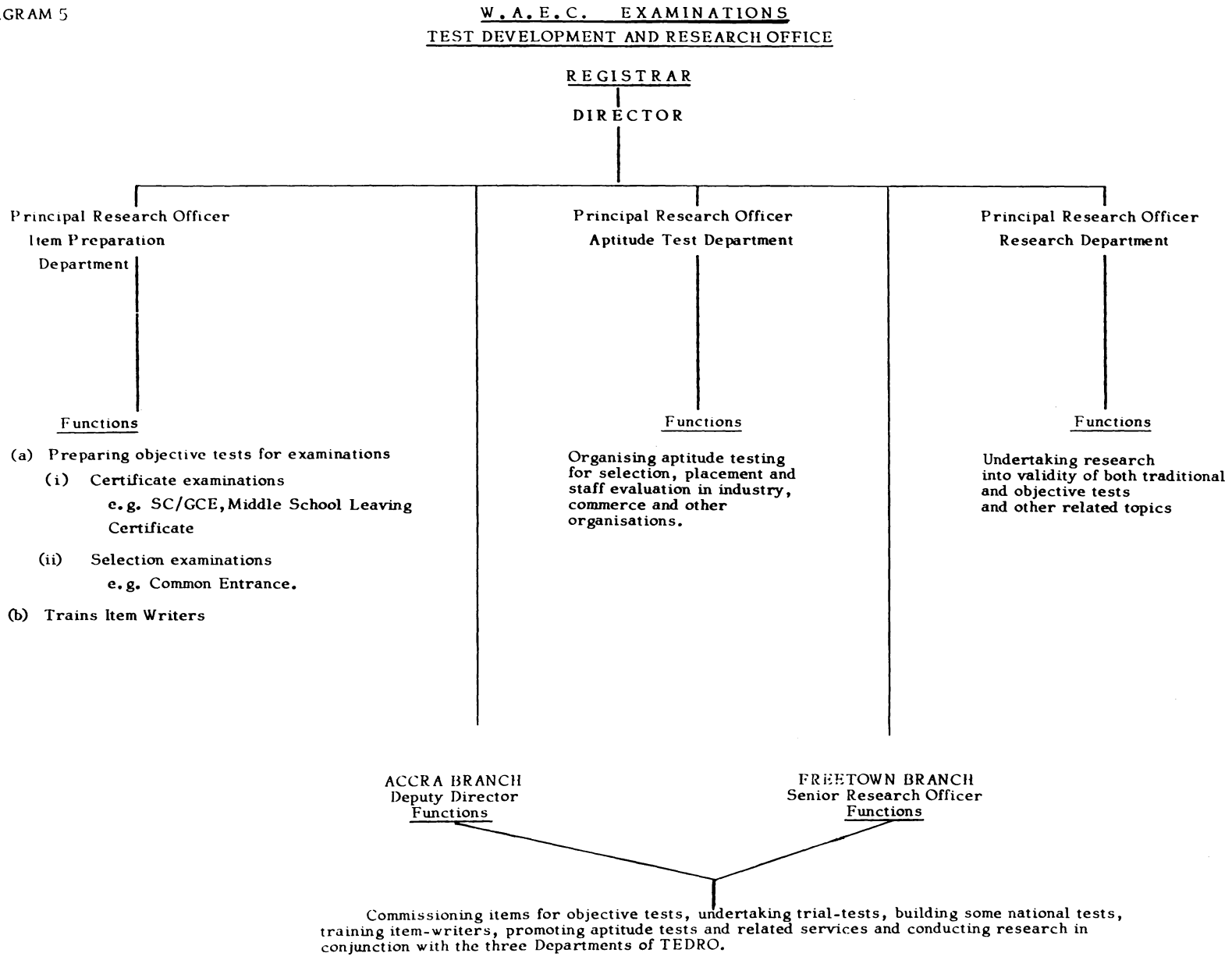

W.A.E.C. EXAMINATIONS
TEST DEVELOPMENT AND RESEARCH OFFICE
REGISTRAR
DIRECTOR
Principal Research Officer
Item Preparation
Department
Functions
(a) Preparing objective tests for examinations
(i) Certificate examinations
e.g. SC/GCE, Middle School Leaving Certificate
(ii) Selection examinations
e.g. Common Entrance.
(b) Trains Item Writers
Principal Research Officer
Aptitude Test Department
Functions
Organising aptitude testing for selection, placement and staff evaluation in industry, commerce and other organisations.
Principal Research Officer
Research Department
Functions
Undertaking research into validity of both traditional and objective tests and other related topics
ACCRA BRANCH
Deputy Director
Functions
FREETOWN BRANCH
Senior Research Officer
Functions
Commissioning items for objective tests, undertaking trial-tests, building some national tests, training item-writers, promoting aptitude tests and related services and conducting research in conjunction with the three Departments of TEDRO.

DIAGRAM 6

W.A.E.C. EXAMINATIONS

ADMINISTRATIVE NET-WORK FOR EXAMINATIONS

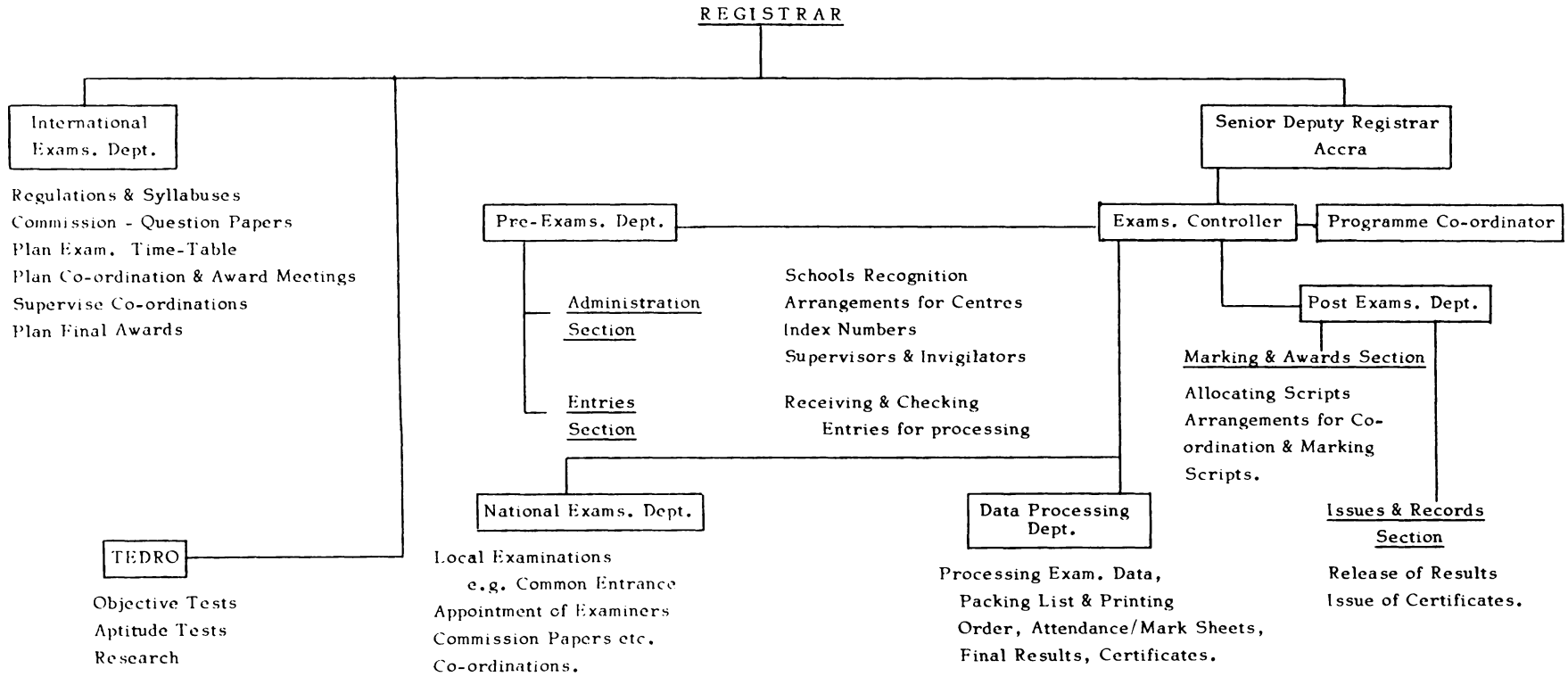


DIAGRAM 7

W.A.E.C. EXAMINATIONS

ADMINISTRATION AND CONDUCT OF EXAMINATIONS

PHASES OF OPERATIONS

Phase 1

i. Question Papers Commissioned with Marking Schemes.
ii. Exam. Time-Table Published.
iii. Time-Table for Co-ordination & Subject Award Meetings Planned.

Phase 2

i. Entries Received
ii. Index Nos. Allocated
iii. Centres Arranged
iv. Supervisors & Invigilators Appointed.

Phase 3

Data Processing (Computer)
i. Entries Processed
ii. Packing List & Printing Order Prepared
iii. Attendance Sheets
iv. Mark Sheets
v. Admission Notices

Phase 4

i. Dispatch of Admission Notices
ii. Time-Tables Dispatched
iii. Instructions to Supervisors dispatched
iv. Apportionment of Scripts Planned.

Phase 5

(Security)
i. Papers & Exam. Materials Received
ii. Papers etc. Dispatched to Centres.

Phase 6

i. Exams. Conducted
ii. Scripts Returned.

Phase 7

i. Scripts from centres Sorted
ii. Arrangements for Marking Sessions Finalised.
iii. Accommodation Arrangements for Examiners made.

Phase 8

Pre-Co-ordination Meetings
i. Chief Examiners & Team Leaders Assembled.
ii. Marking Scheme Reviewed
iii. Sample Scripts Marked

Phase 9

Main Co-ordination Meetings
i. Chief Examiners, Team Leaders & Asst. Examiners Assembled.
ii. Marking Schemes Explained
iii. Sample Scripts Marked
iv. All Scripts Marked
v. Marking Checked for Accuracy.

Phase 10

i. Checking of Additions & Transcripts of Examiners
ii. Marrying of Mark Sheets.

Phase 11

Data Processing
Marks Processed for Award Meetings

Phase 12

Mark Sheets Checked against Processed Marks for accuracy.

Phase 13

Subject Award Meetings
i. Chief Examiners, Moderators, Team Leaders Assembled
ii. Marks Scrutinised
iii. Grades Fixed
iv. Borderline Cases Reviewed
v. Irregularity Cases Reviewed
vi. Reports Submitted

Phase 14

Data Processing
i. Processing of Amended Marks
ii. Preparation of Grading Lists
iii. Results Printed.

Phase 15

Quality Control Checks
Printed Results Checked for Accuracy

Phase 16

i. Provisional Results Released.
ii. Irregularity Cases Withheld.

Phase 17

Final Awarding Committee Meeting Convened
i. Results Confirmed
ii. Irregularity Cases Reviewed
iii. Clemency Cases Reviewed.

Phase 18

i. Certificates Printed
ii. Certificates Issued.
iii. Post-Exam. Analyses.

DIAGRAM 8

EXAMINATIONS CONDUCTED ON W.A.E.C. SYLLABUSES IN GHANA

	Title	No. of Candidates GHANA		
A.	National Examinations			
1.	Common Entrance Examination for Secondary School Selection ..	74,531 (1971)		
2.	Middle School Leaving Certificate	90,238 (1971)		
3.	Teachers' Entrance Examination for Teacher Training Colleges Selection	40,069 (1971)		
4.	Teachers' Final Examinations	9,390 (1971)		
5.	Principal Teachers' Promotion Examination	590 (1971)		
6.	Senior Teachers' Promotion Examinations	3,390 (1971)		
7.	Public Service Examinations (All Grades)	562 (1970)		
8.	Ghana Business Certificate Examinations (School Certificate and Sixth-Form Level)	(O-Level) 224	(A-Level Part 1) 29	(A-Level Part 2) 27
9.	Graduates Selection Examination	118		
10.	TEDRO Aptitude Tests	8,512		
B.	International Examinations			
1.	School Certificate/G.C.E. Examination	17,539 (June 1971)		
2.	G.C.E. Advanced Level Examination	3,273 (June 1971)		

WEST AFRICAN EXAMINATIONS COUNCIL:

MILESTONES IN THE COUNCIL'S HISTORY

At the invitation of the British Secretary of State for the Colonies, Dr. G.B. Jeffery, F.R.S., Director of the Institute of Education, University of London, visited West Africa from December 1949 to March 1950 to study and advise on a proposal that there should be instituted a West African Schools Examinations Council to conduct such examinations as would be best suited to the needs of West Africa.

Set out Below in chronological order are Milestones in the Council's history since that visit which later led to the formation of the West African Examinations Council:

1950:	March	Dr. G.B. Jeffrey's Report recommending the establishment of a West African Examinations Council was published.
1951:	December	The Ordinance establishing the Council was first enacted by the Government of Ghana (then Gold Coast). This was followed by similar enactments by the Government of Nigeria, Sierra Leone and The Gambia in 1952.
1952:	March	The first Registrar of the Council, Mr. Kenneth Humphreys, appointed by the Secretary of State for the Colonies, arrived in Accra to take up his appointment.
1953:	February	The Accra Office moved from the buildings of the West African Inter-Territorial Secretariat to temporary buildings on Rowe Road near the former Department of Education.
	March	The First Annual Meeting of the Council was held in Accra under the Chairmanship of Mr. A.N. Galsworthy, CMG, Chief Secretary of the West African Inter-Territorial Council.
	May	The Council conducted its first examination, namely the Public Service Executive Competitive examination in May and in September. A third examination for promotion of executive officers to the Administrative Class was held in December.
	September	The Lagos Office was opened in Yaba.

	October/November ..	(i) The Council took over in Ghana the Common Entrance Examination for the selection of pupils into Secondary schools.
		(ii) The Council also conducted its first Sixth-Form Bursary Examination in Ghana.
1954:	March	(i) The Nigerian Qualifying Test in English Language was introduced for private candidates in Nigeria, to ensure that they attained a certain minimum standard of expression in English before attempting the Ordinary Level examination of the University of London.
		(ii) Subject panels were set up in the following subjects:- African Languages, Domestic Subjects, English, Geography and Science.
1955:	.. ..	The Council instituted experimental tests in Oral English for the School Certificate examination.
	December	(i) The Council in special relationship with the University of Cambridge Local Examinations Syndicate conducted in December for the first time the West African School Certificate Examination (WASC) in all four member countries. This marked the beginning of collaboration between the Council and the Cambridge Syndicate.
		(ii) The Council conducted the Nigerian Teachers' Certificate Grade II Examination.
1956:	November	Objective type questions in English, Arithmetic, Geography and History were tried out in a pilot scheme in Nigeria in November in selected primary schools. Objective tests with machine scoring of candidates' scripts were seen at that time as a solution to the problem of finding qualified examiners in sufficiently large numbers for an anticipated sharp rise in pupil population following expanding primary school programmes being pursued by the Governments of member countries.

1957:	.. ..	The first stage of the Council's mechanisation programme was completed by the installation of a Hollerith equipment in Accra comprising punches, verifiers, a tabulator, a reproducer, a sorter and an interpreter. A Punching Section was established in Lagos.
	November	The first Ghana Middle School Leaving Certificate examination was held by the Council.
1958:	July	The Freetown Office in Freetown, Sierra Leone and the London Office in the United Kingdom were opened.
1959:	November	Experimental trial tests in objective testing were carried out on a limited scale in Nigeria in the following subjects: English Language, Mathematics, Geography and Biology.
	December	The Council's Ordinance was amended by the Governments of the four member countries to make the Council an autonomous body with power to appoint its Chairman and the Registrar and to delegate certain powers to appropriate committees in member countries. Up to this time the Secretary of State for the Colonies had exercised the right of appointing the Chairman and the Registrar of the Council.
1960:	March	Mr. John Deakin was appointed Registrar in place of Mr. Kenneth Humphreys when the latter retired from the Council's service in March.
	June	Following the change to a September-August School year in Ghana and Sierra Leone, the Council introduced its own School Certificate Examination (WAEC/SC) which was taken in June for the first time in the two countries. Nigeria continued with the December School Certificate examination as also did The Gambia for a year. Work began on the Council's permanent office buildings in Accra and in Lagos.
1961:	March	The Council gave approval to a scheme proposed by the Registrar to conduct investigations into the use of Objective Tests in

		the School Certificate examination as supplementary to traditional essay type questions.
	December	The Permanent building of the Accra Office behind the Ridge Hospital was completed and was officially opened by the Minister of Education, Mr. Dowuona Hammond on 7 December.
1962:	March	The Council organised its first direct training course for 56 trainee examiners in English Language at Ibadan, Nigeria, in March. Hitherto examiners had been trained on the job.
	June	The University of London G.C.E. Advanced Level June examination replaced the Cambridge Syndicate H.S.C. December examination in Ghana, Sierra Leone and a year later in The Gambia.
		The new Lagos Office building was officially opened by the Federal Minister of Education.
1963:	January	It was decided to set up an Objective Testing Unit in Nigeria to improve the tests used for selection purposes and to develop Objective Tests to be used as part of the School Certificate Examination.
	March	Examiners' training courses were held in March for 134 trainees in English Language, English Literature, History and Bible Knowledge.
1964:	March	(i) Dr. Davidson Nicol, CMG., Principal of Fourah Bay College, Freetown, Sierra Leone, became the first West African to be elected Chairman of the Council.
		(ii) Discussions were begun on establishing the Council's own Advanced Level Examinations.
	June	The Nigeria Technical and Commercial Examinations Committee was inaugurated to commence planning syllabuses for the eventual take-over of technical and commercial examinations in Nigeria from overseas examining bodies such as the City and Guilds of London Institute and the Royal Society of Arts.

	September	The Nigeria Aptitude Testing Unit was set up in Nigeria with an autonomous governing body to continue development of work in aptitude testing which was started by Dr. Paul Schwarz, of USAID/AIR in 1960.
1965:	March	(i) In March the Council approved its revised Draft Constitution for submission to the Governments of the four member countries.

Proposed changes sought:

(a) direct representation on the Council of each University or University College in Member countries;

(b) admission to membership of any other West African country which wanted to join;

(c) establishment of the Administrative and Finance Committee as a statutory body;

(d) establishment of the office of Vice-Chairman.

(ii) The Council decided to introduce its own Advanced Level examination.

(iii) The Committee structure of the Council was reviewed and National Committees were set up to replace Local Committees which hitherto had represented local or national interests.

(iv) Mr. John Ayite Cronje was appointed Registrar to succeed Mr. John Deakin after the latter's retirement in September. Mr. Cronje was the first West African to hold the post.

	June	The Council's G.C.E. Ordinary Level examination on a single subject basis was taken for the first time in The Gambia, Ghana and Sierra Leone.
1966:	March	The Test Development and Research Office (TEDRO) was established by merging the Objective Testing Unit (OTU) and the Nigeria Aptitude Testing Unit (NATU) to undertake objective test development, establish aptitude testing services and carry out research into the Council's testing procedures.

	June	Multiple choice objective tests were introduced for the first time in the Council's School Certificate and G.C.E. Ordinary Level examinations in Biology, Chemistry, English Language, Mathematics and Physics as additions to the traditional essay type questions.
	December	The Council became fully responsible for the November/December West African School Certificate examinations. This brought to an end the collaboration with the Cambridge Syndicate which began in 1955. Collaboration for the H.S.C. examination however, continued.
1967:	April	A representative of the Government of the Republic of Liberia attended the 15th Annual Meeting of the Council as an observer.
	June	The Council began its own Advanced Level examining in the subjects Economics, Economic History and Government based on syllabuses developed by its International Panels.
		The permanent building of the Freetown Office on Tower Hill was officially opened.
	July	Work commenced on the third phase of the extensions to the Lagos Office which included a twelve-storey office block.
1968:	April	At the 16th Annual Meeting held in Bathurst, The Gambia, the Council decided to commission a survey of its organisational structure.
1969:	January	Implememtation of the recommendations for re-organising the Council's administrative structure was commenced.
	April	At the 17th Annual Meeting of the Council held in Lagos Dr. T. Adeoye Lambo, Vice-Chancellor of the University of Ibadan was unanimously elected Chairman of the Council to succeed Dr. Davidson Nicol who completed his term of office.
1970:	March	Liberia was formally represented at the 18th Annual Meeting of the Council held in Freetown as an associated member country by Hon. S.F. Dennis, Under-Secretary of Education for Instruction and Mrs. Bertha B. Azango, Director of Evaluation, Department of Education.

	June	The Council's Joint Examination for the School Certificate/General Certificate of Education was re-introduced in June for candidates in The Gambia, Ghana and Sierra Leone. The examination was re-named The Joint Examination for the School Certificate and General Certificate of Education of the West African Examinations Council in all member countries. The Council's revised Constitution was enacted by the Ghana Government.
1971:	March	(i) The 19th Annual Meeting of the Council was held in Liberia. This was the first time the Annual Meeting was held outside any of the original four member countries. (ii) Mr. V. Chukwuemeka Ike, Registrar of the University of Nigeria, Nsukka, was appointed Registrar of the Council to succeed Mr. J.A. Cronje following the latter's retirement.
	August	Mr. Ike assumed office at Headquarters, Accra.
	August/October	In Nigeria branch offices of the Council were opened in Kana, Kaduna and Enugu.
	September	Dr. T.A. Lambo resigned as Chairman of the Council on 30th September.
	November/December ..	In the November/December H.S.C./G.C.E. (Advanced Level) examination, the following papers were set by the Council: Chemistry, Economics, Economic History, Government, Mathematics, Biology and Physics. Other subjects were examined by the Cambridge Syndicate. The Certificates were issued by the Council in collaboration with the Syndicate.
1972:	January	Dr. S.A. Akeju, Principal Research Officer (TEDRO) became the first West African to hold the post of Director of TEDRO.
	March	Dr. S.T. Matturi, C.M.G., Principal of Njala University College and Pro Vice-Chancellor of the University of Sierra Leone, was unanimously elected Chairman of the Council for the unexpired period of Dr. Lambo's term i.e. until March 1973.
	August	The Bathurst Office of the Council in The Gambia was set up and began to function

		independently of the Department of Education which had managed the affairs of the Council in The Gambia during the previous twenty years.
1973:	January..	The Council assumed full responsibility for the Higher School Certificate Examination, ending the period of collaboration with Cambridge.
		The Bathurst Office was formally opened by the Minister of Education, Youth and Social Welfare, Alhaji Hon. M.C. Cham on January 18.

THE EAST AFRICAN EXAMINATIONS COUNCIL

B.P. Kiwanuka

Registrar, East African Examinations Council, Kampala, Uganda.

Historical Background

The East African Examinations Council was established towards the end of 1967 by an Act of the East African Legislative Assembly. The Act is generally referred to as the East African Examinations Council Act, 1967. It was enacted on behalf of the East African Common Services Organisation which later became the East African Community. The Community includes the three States of East Africa, namely Kenya, Uganda and Tanzania. It is responsible for running services that are common to the three States, e.g. Railways, Airways, the Posts and Telecommunications, School Examinations, etc.

Up to 1967 all the major school leaving examinations were conducted by examining bodies based in Britain. These included the University of Cambridge Local Examinations Syndicate, the University of London School Examinations Council, the Associated Examinations Board, the City and Guilds of London Institute, the Royal Society of Arts and a few others which concentrated on specialised fields. The Council Act of 1967 was a climax of a move which started in the early sixties. In 1964 the Creaser Committee, which was appointed to look into University Entry Requirements, reported, among other things, that

> "Over the last two years the Academic Committee of the Provisional Council of the University of East Africa and its successor, the Senate, has been concerned that entrance to degree courses within the University should relate to national needs ..... There is strong pressure for the early establishment of an East African Examinations Council to take over from the Cambridge Syndicate the external school examining at the form 4 and the form 6 levels. Such a step can be justified on both educational and political grounds."

In 1965 the Vice-Chancellor of the University of East Africa invited the Cambridge Syndicate to send an adviser to East Africa to consult with the Governments and the University on the possibility of setting up an examinations Council. As a result of this invitation Mr. A.V. Hardy, Deputy Secretary of the Cambridge Syndicate, came to East Africa and held discussions with representatives of the Governments and the University. He then prepared a report outlining ways in which an Examinations Council could be formed. It was on the basis of this report that the Council was established by the Act referred to above.

The Act provides for the representation of the main bodies concerned with education in East Africa on the Council, namely the Governments of the partner States (Kenya, Uganda and Tanzania), the East African Community, the University of East Africa and its constituent Colleges, the Heads of Schools and the Teachers. It specifies that "The objects of the Council shall be to conduct within East Africa such academic, technical and other

examinations as the Council may consider necessary or desirable in the public interest."

The Committee Structure of the Council:

The steering body of the Council is called the Finance and General Purposes Committee. This is, in effect, the Executive Body which supervises the implementation of the Council decisions. As in the case of the Council, the Finance and General Purposes Committee membership reflects the interests of the Partner States, the East African Community and the University.

In addition to this Committee, the Council is empowered to appoint, and has actually appointed, other Committees for specific purposes. There are, for instance, National Sub-Committees (one in each Partner State) whose function is to consider the work of the Council in relation to the specific requirements of their respective countries. They advise their respective Governments on the subjects that should be examined by the Council and they comment on the examinations and examination papers taken each year by candidates in their respective countries. There is a School Examinations Committee whose main function is to advise the Council on the suitability of new syllabuses, the suitability of examiners to be appointed and the regulations to be used. There are also various International and National Subject Panels covering all subjects examined. The purpose of these panels is to study existing syllabuses and improve on them as necessary, develop new syllabuses, delete unnecessary ones and then present all these to the School Examinations Committee for approval on behalf of the Council. They also make recommendations on suitable examination setters.

The Committee structure of the Council emphasizes the need for considerable consultation and involvement by all concerned in this venture. Action can, for instance, be initiated by an individual teacher and is passed upwards through the National Subject Panels, the National Committee or the International Subject Panel to the School Examinations Committee or the Council itself. Proposals initiated at the Council level or the School Examinations Committee level have a way of reaching the teacher in the school in each of the participating countries. In this way it is hoped that the East African Examinations Council will be a people's Council and will not be looked at as a mysterious body that imposes syllabuses or examinations on countries and schools without their active participation.

Council Activities:

The scope of Council's activities, as set out in the Council Act, is fairly wide. The Council has therefore decided to be a little cautious in its approach to its task in order to ensure that the foundation is well done. Initially it was decided to concentrate on the secondary leaving examinations. As reported above there already existed a demand for participation in these examinations.

In 1968 the Council and the Cambridge Syndicate agreed on a programme whereby the Council would gradually take over the examining activities for both the O-level and the A-level secondary school leaving examinations. The Syndicate would gradually phase out. It was decided that a first step in this exercise would be the joint awarding of certificates by the two bodies. Hence the former Cambridge School Certificate/G.C.E. and the Higher School Certificate have been replaced by the East African Certificate of Education/East African School Certificate and the East African Advanced Certificate of Education awarded jointly by the Council and Syndicate.

This joint operation, in the transitional period, is also reflected in the actual setting and marking of examination papers. For the next five years or so papers for the O-level and A-level examinations will be set and marked partly in East Africa and partly in Cambridge. The take over programme includes the training of East African examiners by Cambridge Examiners. The East African Examiners are recruited by the Council through the Ministries of Education of the three countries. They are trained in East Africa by Instructors recruited by Cambridge and those who are considered suitable are appointed as Examiners in their respective subjects.

The recruitment of suitable examiners is one of the major challenges to the Council. Obviously large numbers of examiners are required if the Council is to take over responsibility for all subjects. There are now about 35,000 candidates at the O-level and 4,000 to 5,000 candidates at the A-level. There is always the big problem of the wastage of trained examiners and this is aggravated in East Africa by the fact that a large number of teachers are still expatriates. The majority of these come to work in East Africa for short contract periods. Their assistance in this exercise can only be of a temporary nature. However, on the lighter side of the problem, there is the determination of each of the participating countries to train its own local teachers and reduce the reliance on teachers from abroad. It is thus hoped that this will not only provide the Council with the examiners required, but will also provide continuity which is essential for an examination system.

Reference has been made above to the establishment of subject panels both at the national level and the international level. The Council considers it its obligation to assist the partner States in their effort to localise syllabuses. Already some of the subject syllabuses have been tailored to suit the requirements of the member countries. Examples of these include syllabuses for History, Geography, Physics, Chemistry, Biology and Literature in English. The moulding of syllabuses is initially done by the National Panels for the particular subject and the final versions are agreed upon at meetings of the International subject panels.

The revision or development of new syllabuses does, of course, bring its own new problems. First, one has to consider not only the relevancy of the matter included in the syllabus, but also its standard in comparison to existing syllabuses. Subject panels must therefore ensure that the revision or replacement of syllabuses does not result in the lowering of standards. Another problem related to that matter is the designing of new examination papers based on the new syllabuses. Problems of this nature have been experienced in connection with the development of School Science Project syllabuses. It was discovered that because of the different rates of development between Chemistry and Physics, it was impossible to set papers of the same standard for all candidates in the three countries. The solution to the problem was to set papers including alternatives of the new and old syllabuses - the so-called hybrids. This is, of course, an interim measure which will disappear when all syllabuses have been fully developed.

This paper is being written shortly after the first cycle of the examining exercise has been completed. This cycle has been an eye opener to the Council. Reference has been made to the processes of recruiting and training examiners. The exercise has revealed problems of security which, for obvious reasons, cannot be discussed in a paper of this nature. The problems of long distances in a broad region like East Africa have also come to light. Whereas in Britain, and possibly in other countries, marking can be done in the examiners' homes, in East Africa all the marking must be residential. This certainly adds to the cost of the exercise. But it reduces the chances of losing candidates' scripts on one hand, and on the other hand it makes coordination and standardization easy. Despite all the problems that may crop up in such a venture the staff of the Council and the Council itself have been greatly encouraged by the co-operation of people within East Africa and friends outside East Africa.

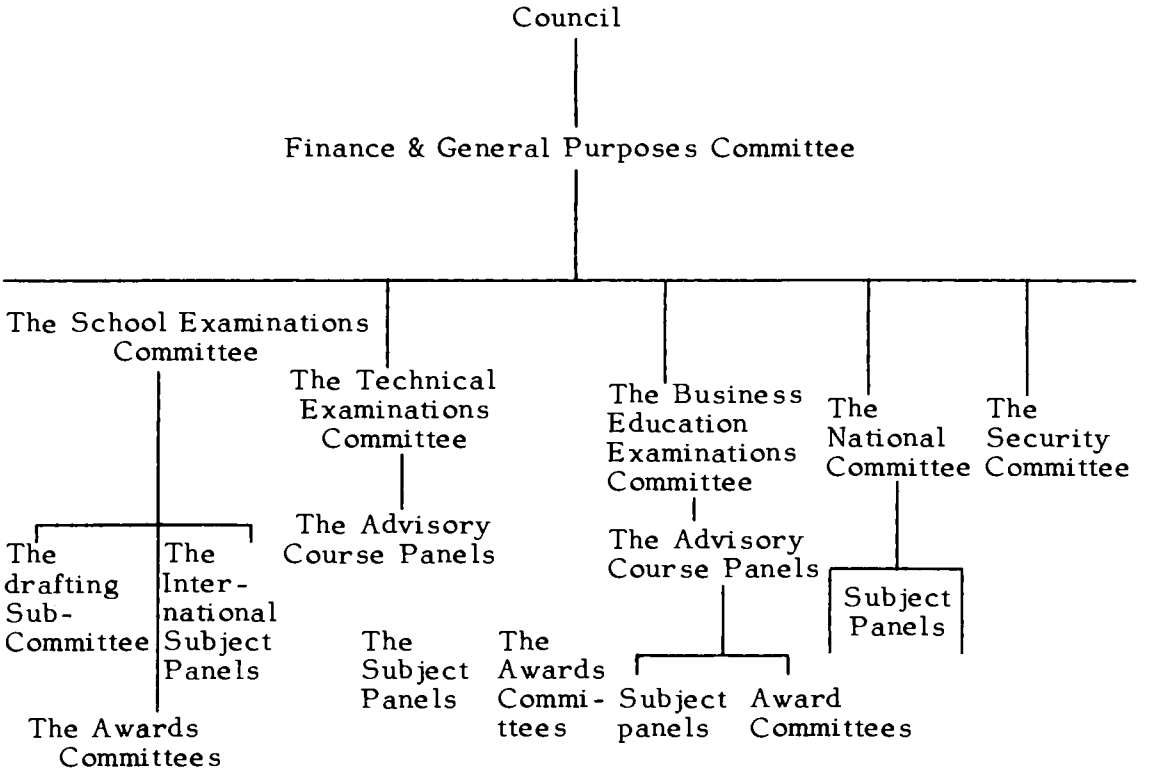
THE DEVELOPMENT OF THE EAST AFRICA EXAMINATIONS COUNCIL

B.P. Kiwanuka
Secretary, East African Examinations Council

Just over 2½ years ago I was asked by the Commonwealth Secretariat to write a paper on the activities of the East African Examinations Council. This paper is on pages 50-53 of the Commonwealth Secretariat's publication Examinations at Secondary Level in the Education in the Commonwealth series, published in 1970. In the last paragraph of that paper I said that at the time of writing the Council had just completed the first cycle of the examining activities. I was then referring to our active participation in the 1969 November/December examining exercises. The Council was then just over two years old. We are now five years old. We have participated in the 1970, the 1971 and the 1972 examining exercises. We are participating in the 1973 examining exercises right now. But, most important of all, as I write this paper, we are busy preparing for 1974, the year when we plan to stand completely on our own.

I might perhaps be repeating what I said already in the paper referred to above. I consider, however, that it is important to emphasise some of the points I made then, in order to appreciate both the rate of our development and the problems we have met and still have to meet and resolve. I said then that purpose of the Council was to conduct within East Africa such academic technical and other examinations as the Council may consider necessary or desirable in the public interest. The Council was set up as a result of strong pressure from within East Africa to take over the functions of conducting examinations from bodies based from outside East Africa. It was considered and it is still considered that it is only a body like this one that can reasonably relate its programmes to the needs and aspirations of the peoples of East Africa.

The Council was thus planned and established in such a way that its governing body and all its Committee structures are very representative. Its activities and decisions were intended to reflect the broad requirements of the region in matters of syllabuses to be adopted for the various examinations it conducts and in matters of standards attained by candidates who take these examinations. The first step then was to decide on the size and representation of the governing body and the number and size of the committees that would implement the various decisions of the Council. The diagram below illustrates the Committee Structure of the Council which has gradually been developed over the five year period.



The governing body of the organisation - the Council has representatives from each of the member States - five from each State. These are appointed by each State to represent the interests of the government, the Heads of teaching institutions (secondary, technical and commercial schools) and the teaching profession as a whole. The Universities and Technical Colleges are also represented on the Council. In addition, the East African Community, which has the responsibility for common services like the Council is also represented. Also during the initial period of Council's existence the University of Cambridge Local Examinations Syndicate has been represented on the Council by one member.

As may be expected Council only meets twice a year. Most of its work is done by its Executive Committee called the Finance and General Purposes Committee. This committee has representatives from Governments and Universities. The chairman of the Council who is also the chairman of the Finance and General Purposes Committee is one of the Vice Chancellors of the Universities of East Africa. The post is held in rotation for a three year period.

The other Committees and sub-Committee are related to specific functions and responsibilities and their names and titles in the diagram indicate their respective duties e.g. the School Examinations Committee, the Technical Examinations Committee, the Business Education Committee etc. etc.

All Committees have one thing in common. They are all fairly representative of national and professional interests.

The diagram of the Committee above reflects the areas of examining in which the Council has become involved over the past five years. The School Examinations Committee is responsible for conducting Secondary School Examinations at the Ordinary and the Advanced levels. This is by far the greatest activity of the Council. Right from the very beginning Council decided to participate in the conducting of Ordinary and Advanced level Secondary School Examinations. These are the areas which were most dominated by examining bodies based outside East Africa.Secondary school courses, more than any other courses, required urgent revision in order to make them relevant to the needs of East Africa. It was realised however that in order to do the work well, a period of gradual transition was necessary. It was therefore decided to conduct the O and A level examinations jointly with the University of Cambridge Local Examinations Syndicate. The joint operations in this area started in 1969 and will come to an end this year. In 1974 the Council will conduct both the O and A level examinations alone.

The preparations for the final take over of O and A level examinations has involved Council in urgent and often difficult exercises. First Council had to ensure that it had well qualified staff to do the job both on a permanent and temporary basis. Permanent staff (senior and junior) have been recruited over the period to man the various departments of the Council. Reference will be made to the administrative structure below. Ad hoc courses have been arranged for some of our staff abroad to acquaint them with examination procedures in well established organisations. Staff have been attached to the Syndicate offices, the Joint Matriculation offices and the West African Examinations Council in Accra and Lagos. Study visits have also been made to the London University School Examinations Council and similar bodies in Britain. Temporary staff include the large numbers of examiners that have been trained every year. Council has been assisted in this exercise by the University of Cambridge Local Examinations Syndicate who have provided most of the Instructors every year and by the British Ministry of Overseas Development who have provided large sums of money to finance the training programmes. It is estimated that by the time of taking over of all school examinations Council will have about 2,500 examiners to mark scripts from some 60,000 candidates.

The marking of scripts, in a broad, developing area like East Africa, has had to be done residentially. This will continue to be the pattern for some years to come. Residential marking inevitably raises the cost of the exercise and no doubt it is the price which Council and the countries involved have to pay for achieving their aim. Council has had to consider seriously as to whether other methods of examining and marking can be adopted if they are reliable and practicable. It is for this reason that investigations are now being made into the validity and reliability of objective tests in the East African setting and environment. Already objective test papers have been introduced in a few subject papers. The idea is that if the experiments are successful both traditional testing and objective testing will be used simultaneously in school examinations at both O and A levels.

The take-over of O and A level examinations has involved Council in the re-writing of most syllabuses. As indicated above Council, and indeed all parties involved in this work,consider that the conducting of examinations alone is not enough. It is most important that the courses on which examinations are based are relevant. Council has therefore set up subject panels for practically all subjects examined. Each of these panels is charged with the duty of ensuring that the syllabus for its particular subject is relevant. New or revised syllabuses are therefore being introduced in

schools as they become available and as other factors such as books, equipment, teachers etc. allow for their smooth adoption.

The Committee structure shows two other important areas of examining in which Council is involved. These are the technical examinations and the Business Education (Commercial) Examinations.

Two years after its establishment Council was asked to extend its activities into these particular fields. Previously examinations in these two areas were conducted largely by the City & Guilds of London Institute and by the Royal Society of Arts. Here again the first step to take was to form special committees and make them responsible for these examinations. Secondly Council had to prepare out working arrangements with the existing examining bodies to facilitate the take over. Thirdly Council had to appoint permanent staff at the Secretariat and train examiners. In actual fact all these activities were undertaken almost simultaneously. Staff have been appointed and some of them have been trained overseas by the attachment arrangement. Training courses have been conducted; and the take over has begun. In these two cases the take over is done subject by subject. There are no joint arrangements. Council takes over a subject and awards a certificate in it as it feels capable of doing so. It is estimated that in two years time most of the technical subjects and the commercial subjects will be taken over.

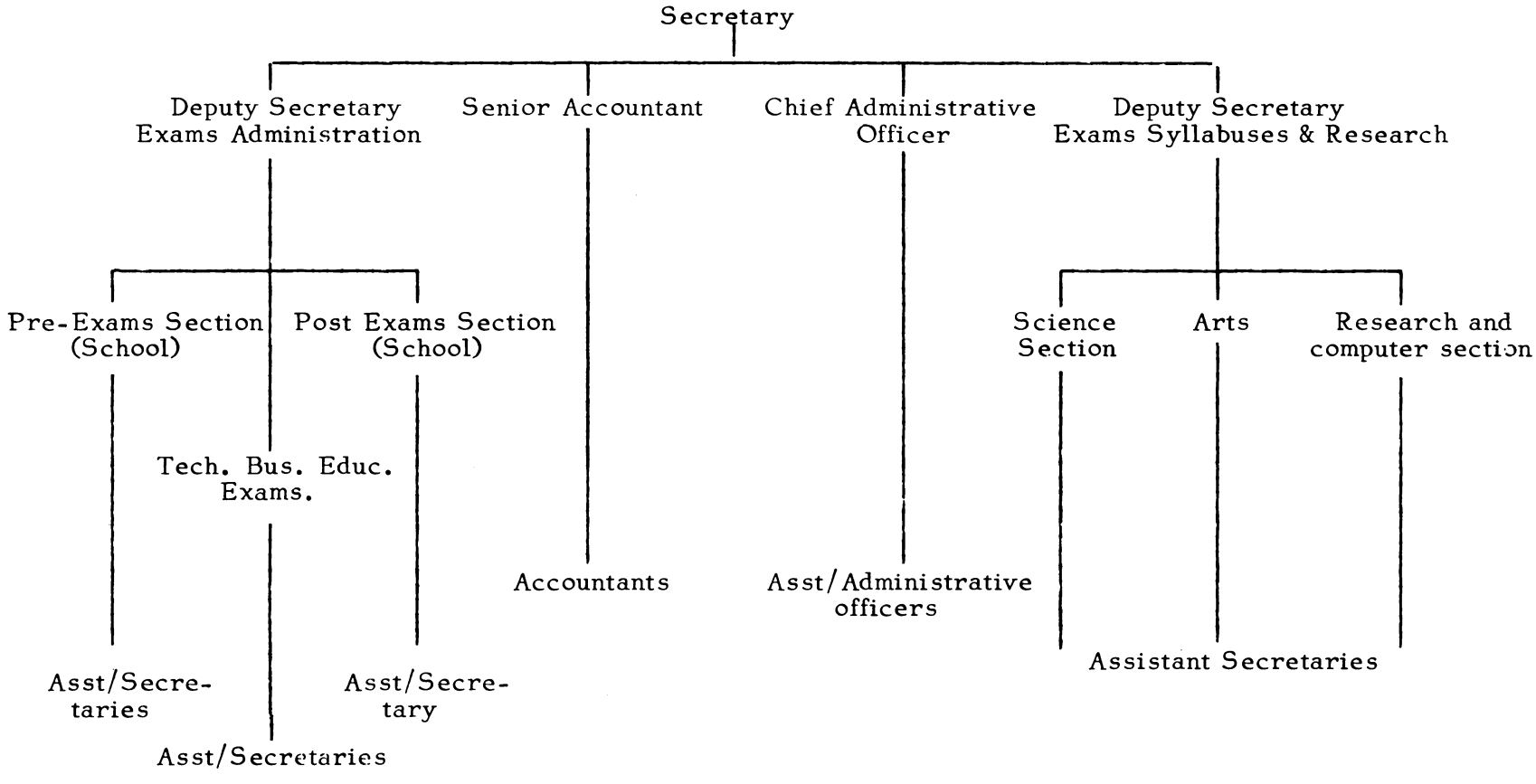
The problem of qualified examiners does indeed exist in these two areas particularly in the technical field. The plan here is to start with the most popular subject or courses, and finish off with subjects or courses that are taken by small numbers of candidates. This arrangement will give Council time to recruit and train all examiners required.

I must now turn to the Administrative structure of the Council. At the time of writing this paper, the Administrative Structure has evolved as shown opposite.

The constitution of the Council provides for the appointment of a Secretary as executive head of the organisation. The growth of the Council has gradually led to the establishment of departments and/or sections each charged with specific functions and headed by a senior officer. The Department of Examinations Administration, headed by a Deputy Secretary, is responsible for the annual administration of examinations. These include the registration of candidates and collection of examination fees; the issuing of examination instructions; the preparation of examination timetables; the distribution of examination papers and the collection of worked scripts; the marking of examination scripts; the processing of marks and the issuing of results and certificates; and a number of other related duties.

The Department of Examinations Syllabuses and Research, headed by another Deputy Secretary, is responsible for the drafting of syllabuses and regulations; the preparation of draft and final examination papers; the preparation and storage of objective tests; the training of setters and item writers; research into and development of examination techniques; all computer operations; and all other matters related to these functions.

The Department of Accounts headed by the Senior Accountant needs no extra comment. It is responsible for all financial and accounting matters. And lastly the Department of General Administration headed by the Chief Administrative Officer is responsible for the general administration of the organisation.


Secretary
Deputy Secretary Exams Administration
Senior Accountant
Chief Administrative Officer
Deputy Secretary Exams Syllabuses & Research
Pre-Exams Section (School)
Post Exams Section (School)
Science Section
Arts
Research and computer section
Tech. Bus. Educ. Exams.
Accountants
Asst/Administrative officers
Asst/Secre-taries
Asst/Secre-tary
Assistant Secretaries
Asst/Secretaries

Both the Committee and the administrative structure are still in their experimental stages. We are still looking for better ways of running an examination organisation. In the process of experimentation and research we have consulted older organisations in the field; Cambridge, the JMB, London, West Africa, etc. We have also in the past received technical advisers from the Centre for Curriculum Development, the American Institute for Research (AIR) through the USAID; TEDRO through the West African Examinations Council. We have received financial assistance from the Ford Foundation for the training of senior staff. We have established contacts with the Ethiopian examining authorities and examining authorities in Malawi and Zambia. The aim in all this is to try to widen our experience and knowledge of examining practices elsewhere, particularly on the African continent. In this way we hope to provide the best service for the people of East Africa.

THE ROLE OF A REGIONAL EXAMINATIONS COUNCIL

B. Somade

Director, CESAR, University of Lagos

A survey of examining bodies throughout the world reveals the fact that there is hardly any regional examining body of the type well-known in the developing countries of the Commonwealth in any of the advanced countries. There are almost as many different types of examining bodies, where they exist, as the number of countries. The slight differences in the functions and roles are a reflection of the national philosophies of education of the countries and, in particular, their school systems. The type of examining bodies in the developing countries of the Commonwealth were the only realistic types at the time each was established in the different countries, because there were comparatively very few trained personnel in the countries, the number of candidates were too few to maintain national examining bodies at reasonable cost, and since there were very few universities - not more than one in each country - a body had to be set up which would command respect and whose certificates would be acceptable to overseas universities.

Quite a few of the developing countries have been devoting some time to a formulation of their national philosophies of education and in particular, their systems of education. This exercise leads to a consideration of their examination systems. It will be correct to assume that the present examining bodies, however successful they might have been in the past will, without far-reaching modifications in organisation and objective, not serve the future. Countries which some of these regional examination bodies serve are evolving different educational systems and national philosophies. Even where the national philosophies of education appear to be similar, emphasis and sometimes connotations differ. It follows that the examining bodies have to review their roles and functions. Some member countries may find it difficult to accept the views of other countries in respect of syllabuses, and criteria for award of certificates or even methods of examination. As against this, opinions have been expressed that standards will be affected and acceptance by overseas University of the certificates issued by a national examining body may be difficult. One would like to see a definition of standards with respect to secondary schools. Many feel that the question of standards is relative, subjective, and even illusionary. What is the purpose of these "standards"? If entry into Universities, then is it right to subject 95% or more of the pupils who will not proceed to the universities to this type of examination? The Universities in some countries have said that they prefer to set up a Joint Matriculation Board and thereafter a 4-year undergraduate course after school certificate course. Or are the standards for the benefit of employers? Whichever it may be, it is bound to vary in different areas of knowledge depending on national needs and aspirations - an example was the upsurge of curriculum development in U.S.A. just before and after Sputnik and also the fundamental changes in France in the late sixties.

Many examining bodies also prepare syllabuses in the different subject areas. This may be inevitable where there are no curriculum research bodies or similar institutions in the country but with the establishment of these institutions, should not preparation of syllabuses be left to them?

Where practising teachers through their professional associations are available together with university teachers whose role is to see that facts and theories are up-to-date and to indicate future trends, it seems that these institutions would be more competent than any examining body to draw up, criticize, try out, and evaluate syllabuses before they are imposed on the pupils. The examining body may call on the teachers for help but it is doubtful if it could undertake the research development necessary to produce a really new syllabus which will not be just a revised syllabus with the usual deletions and additions of topics. I would like to emphasize that good syllabuses no longer consist of a list of topics but also include methodology indicating new approaches which have revolutionized teaching and testing, not so much by the number of new theories and facts involved but by the methodology and objectives. There is now a blurring of the line of demarcation between a teaching syllabus and an examining syllabus. The former helps teachers while the latter leaves the pupils at the mercy of the teachers. The pupils suffer if the knowledge or competence of the teacher is low. This aspect of syllabuses has greater relevance to the developing countries where the competence of the few qualified teachers may not be as high as one would wish.

The examining bodies have a greater role to play in testing, through their TEDRO type of organisation to improve on the predictive value of their tests and improve the tests to include tests of the affective domain. How does one test attitudes?

Would not a new type of test which will test not only achievement but also aptitude be more useful and predictive? These require much research. Highly qualified professional staff of examining bodies should be released to take part in curriculum research and preparation of syllabuses. Ad hoc committees to revise syllabuses never produce worthwhile syllabuses and it is regrettable that the teaching profession accepts these revisions, though grumbling, without official protests as a professional body.

The greater the rate of development in education in any country the greater will be the demand for change irrespective of what other members of the regional or international group may say and it is more diplomatic to structure the examining bodies in such a way that each member nation will not feel that he has to proceed at the speed of the slowest or offend the susceptibilities of other nations. It is suggested that greater attention should be paid to the administrative structure of the examining bodies to allow for such an eventuality. TEDRO will always be a unifying factor.

Research, particularly in devising accurate evaluative tools and training of examiners, might feature largely in the schedule of the staff of the examining body.

In conclusion, it appears that in many of the countries the problem of large numbers of candidates for examinations is looming ahead. Should not some time be devoted now to finding either quicker and reliable methods of marking essay-type answers or developing reliable and valid objective tests for these, if possible or feasible? May be, large scale training of examiners will solve the problems or do we need a radically different type of examinations? A study group within the examinations councils may find this topic worth considering.

A SURVEY OF TRAINING NEEDS RELATED TO THE EFFECTIVE OPERATION OF AN EXAMINATIONS COUNCIL

V. Chukwuemeka Ike
Registrar, West African Examinations Council

1. Introduction

The primary function of an Examinations Council, stated very simply, is to examine. To examine this function in greater detail, I shall use as my example the West African Examinations Council (WAEC). That Council was set up by law "For the purposes of holding such examinations in West Africa as may be necessary in the public interest ...." It has power not only to conduct such examinations but also to award certificates and diplomas on their results.

In the exercise of its powers, WAEC has found itself involved in the following functions among others:-

(a) Syllabus development - revising existing syllabuses periodically to make them more relevant to present day needs of the member countries, and introducing new syllabuses in subjects not hitherto part of the school curriculum.

(b) Production of question papers for the various examinations/ tests it conducts.

(c) Introduction of different methods of examining - e.g. objective multiple - choice type of examination, and tests of aptitude (as distinct from tests of achievement).

(d) Production of tests for purposes of guidance in comprehensive schools.

(e) Conduct or administration of examinations, and the pre - and post - examination arrangements associated with it.

(f) Test evaluation and fixing of standards.

(g) Research aimed at developing new examination techniques as well as improving the reliability of existing tests.

(h) Training programmes for staff as well as for Examiners who are not employees of the Council.

2. The Role of Staff

The role of staff in carrying out the functions above may vary from one Examinations Council to another. The tradition which the U.K. Examining Boards (or specifically the Cambridge University Local Examinations Syndicate and the London University Entrance and School Examinations Council) have handed down to us in West Africa is one in which the staff are limited to purely administrative roles. Syllabus development is the responsibility of working parties in the member countries and international panels with members

drawn from the different national work-parties. The role of the subject Officer is to declare the meeting open on behalf of the Registrar, to get the panel to elect a chairman, to provide them with relevant data, and to write the minutes. He need not know anything about the subject. Thus all the expertise required for syllabus development is drawn from outside the staff of the Council.

The same is generally true of the production of question papers. The Chief Examiners who set the papers, the Revisers who revise them and the Moderators who moderate them are drawn from outside the staff of the Council. The role of the staff is again purely administrative; it has been aptly described as that of a postal agency, ensuring that the draft moves from Chief Examiner to Reviser to Chief Examiner to Moderator to Chief Examiner to the printers to Chief Examiner to the printers and so on.

With regard to the marking of scripts (essay-type) and the fixing of standards, the Council relies on Chief Examiners, Team Leaders and Assistant Examiners drawn from outside the Council staff, the role of the staff being to allocate scripts and provide statistical and other data required for fixing the grades. Some members of staff need to understand the award procedures so as to be of maximum assistance to the Chief Examiners.

It is with those facets of examining which are mainly administrative in nature that staff are in full control. The arrangements for the actual conduct of the examination are in staff hands, including the pre-examination arrangements such as the processing of candidates' entries and the appointment of Supervisors and Invigilators for examination centres, as well as the post-examination arrangements such as the collection of candidates' scripts and the issue of certificates.

Responsibility for the introduction of multiple-choice achievement and aptitude tests and for research was first in the hands of Technical Advisers from the American Institutes for Research (through a grant by USAID). However, with the return to our Test Development and Research Office (TEDRO) of staff granted study leave to obtain higher degrees in educational measurement or related disciplines, this responsibility has recently devolved on staff.

From the foregoing it would appear that with the exception of the staff of our Test Development and Research Office (TEDRO), the role of the staff in the Council is entirely administrative. Need this trend continue? I hold the view that it should not, for two reasons. Firstly, its perpetuation means that the Council stakes its reputation on outsiders over whom it has little or no control. In Cambridge and London (which handed down the tradition), the position is ameliorated by the fact that at least some of the 'outsiders' are members of the University staff though not members of the staff of the Syndicate or School Examinations Department. An independent Examinations Council, with no ties to a University, has no such 'external' staff members to call upon.

Secondly, a forward-looking Examinations Council should aim at turning professional at the earliest opportunity. Recognising that educational measurement, particularly when large numbers of

candidates are involved, has become professional, a progressive Examinations Council should not perpetuate a system which places responsibility for the crucial decisions affecting the reliability and validity of its examinations in the hands of well-meaning but free-lance Examiners, sound in their subject matter but amateurs in the field of measurement. These 'outsiders' have an important part to play in the examination process, as will be seen below. They should, however, function under the guidance and control of experts on the Council staff.

I therefore envisage a situation in which the role of the staff would change radically in the coming years, from a purely administrative role to one which combines the administrative with the professional role. The staff should increasingly assume professional roles in syllabus development, test development and evaluation, and research, drawing on help from outside the Council as the need arises.

3. Training Needs

(a) Training in Educational Measurement

No matter the role of any senior staff member working for an Examinations Council, it is important that he knows something about educational measurement.

Post-graduate courses in educational measurement, curriculum development and related fields are now available in many universities. As many staff members as possible, holding good degrees in subjects examined by the Council, should be given the opportunity to acquire post-graduate degrees in these fields. This would equip them to play the professional/expert role referred to above.

Shorter non-degree courses on different facets of educational measurement, aimed at imparting specific techniques, would also be helpful. Educational Testing Service, Princeton offers such courses annually. Comparable courses are also organized in the United Kingdom, e.g. a British Council two-week course scheduled for the 1973 summer in Edinburgh on Tests and Measurement in English Language Teaching.

Some of the techniques of educational measurement can be acquired on the job from more experienced colleagues. Where this is not possible and the services of an experienced Officer from another Examinations Council could be obtained on short or long term secondment, he could help to provide the on-the-job training. The West African Examinations Council is currently seeking the services of an expert in Data Processing and Computer Operations to be seconded to the Council for a year or more during which he will help to train local staff to take over from him. This approach is attractive in situations in which the Council cannot afford to release its staff for training elsewhere.

Yet another approach is to send staff of the Council on periods of attachment to other examinations councils, to study

specified examination techniques. WAEC has sent several of its staff to the Cambridge Syndicate, the London University School Examinations Department, the Royal Society of Arts, and City and Guilds of London Institute.

(b) Training in Management

This is an aspect of training which tends to be neglected by organizations such as an Examinations Council. The tendency is to concentrate on the different facets of educational measurement, assuming that administrative competence comes naturally. It probably does for some, but not for all. Judging from past experience, the incidents which have shaken public confidence in the West African Examinations Council might have been avoided if training in management had been placed on the priority list. The need is heightened by the fact that most persons recruited at the level of Assistant Registrar and above have had practically no training or experience in administration or management; they are often classroom teachers. Yet they are promptly entrusted with major administrative responsibilities. One Assistant Registrar who had had a brilliant teaching career admitted soon after joining the Council that there was more in administration then he had imagined. He had had to learn, among other things, how to draft official telegrams!

Management courses are offered in different parts of the world; some of them would be of benefit to Examinations Council staff, depending on the level and nature of their responsibilities. The West African Examinations Council, in recognition of the need for management training, has recently arranged for one of its Examinations Controllers to take a full-time residential management course organised in Ghana by the College of Administration at Greenhill. It is hoped that other senior officers of the Council, including Heads of Offices, will take such courses which are also available in Nigeria under the aegis of the Nigerian Institure of Management.

The Council is also launching its first induction course for new Assistant Registrars, Research Officers, Computer Programmers, etc., in April 1973, aimed at introducing them to the organization which they are to serve as well as to the functions of an Examinations Council in general.

In addition to the exposure of staff to management and induction courses, a large Examinations Council should ultimately aim at recruiting professionals (with the requisite professional qualifications and experience) for those administrative functions which have become or are fast becoming professional, e.g. Accounting, Computer Operations, Personnel Management, Public Relations. Where this is not possible, staff assigned these specialised functions could be sponsored to take short term or long term courses in the appropriate fields. Many such courses are available in the Commonwealth.

(c) Training of Non-Council Personnel

As has been mentioned earlier, an Examinations Council

leans heavily on the services of several people - primarily secondary school teachers and university lecturers - for the production of its examinations or tests as well as the marking of the candidates' scripts, particularly where the examinations are of the essay type. Even when the Council has attained the stage in which the final decisions as to what goes into the final question papers and how candidates' grades are to be determined are taken by experts on its staff, the Council would still require assistance from persons outside its employment. The Council must, for example, ensure that its tests are appropriate to the level of education for which they are intended. One way in which this is done at present with regard to objective tests is by inviting test items from test writers from the various member countries which are then put together (if they are of the right quality) by the staff and trial tested. These writers are not employees of the Council. Also with the marking of essay-type scripts, the Council needs the services of thousands of Assistant Examiners for its major examinations. Again these are not employees of the Council; they are predominantly teachers. The Council's efficiency as an examining authority depends to a considerable extent on the efficiency of each of these outsiders. The Council's training schemes must therefore cater for them, too.

A long-term approach to the problem is to provide for such training in the curricula of University Faculties or Schools of Education and other teacher training institutions in member countries. Educational measurement and evaluation ought to be a crucial part of any curriculum aimed at producing teachers. Unfortunately, experience from marking exercises organized by the Council shows how grossly deficient in this area many practising teachers are. The sooner the institutions responsible for training teachers accept this responsibility, the better it would be for the Council.

The short term approach is to organise special training courses in (a) test construction and (b) the marking of essay-type questions. These courses could be organised on a national or regional basis. The West African Examinations Council has organised such courses for several years, financed by the Council itself, the Ford Foundation and the British Government. The fact that it is constantly having to train more and more examiners illustrates the magnitude of the problem.

4. Conclusion

Public examinations are not new, even to the developing countries. Cambridge and London, the Royal Society of Arts, City and Guilds of London Institute, and other examining bodies extended their examinations to the length and breadth of the erstwhile British Empire decades before the colonial countries attained political sovereignty. The extent of the involvement of the nationals of these countries in the administration of these examinations was, however, severely limited - generally it did not exceed the physical arrangement of centres, the supervision of the candidates while the examinations were in progress, and the return of the scripts to the United Kingdom where the crucial processes took place.

A young Examinations Council in a developing country thus finds that it has to undertake a massive training scheme if it is to operate effectively, a scheme involving not only its own staff but also thousands of school teachers and other outsiders. There is hardly any doubt that its success as an Examinations Council depends on the comprehensiveness of its training schemes as well as on the speed with which the objectives of the scheme are accomplished. If there is one area in which outside assistance to such a Council is greatest, it is in this area.

THE ACTUAL AND POTENTIAL ROLE OF TEACHERS' ORGANISATIONS IN THE DEVELOPMENT OF EXAMINATION TECHNIQUES AND THE ADMINISTRATION OF EXAMINATIONS

Paper presented by

The World Confederation of Organisations of the Teaching Profession

When we speak of teacher organisations in the countries served by the West African Examinations Council, what specifically do we mean? Appendix A of this paper gives a composite view of African teacher organisations with such indicators as total teaching force, paid-up members, full-time employees, buildings owned, check-off system, and self sponsored in-service training for members. Thus, in the area under discussion, there is a total teaching force of slightly over one quarter of a million teachers or 260,400. About 65 per cent, or 163,000, are current paid-up members of their associations. If we leave out Nigeria in the above reckoning and count only the other four countries, the ratio of paid-up members to total teaching force is 90 percent.

Like all such figures, there is flux in the total teaching force, but the number of members who pay annual dues is in correct proportion.

What are these and other African teacher organisations trying to achieve? The harried civil servant responsible for education will often say, "Teachers are troublesome." But this is not their objective! Our friends in the civil service, the universities and the subject-matter associations who remain apart should be aware that today a teachers' association must look after both protective and professional interests of members. The challenge is to achieve the correct balance! We feel that the decade of the 1970s will show a distinct swing toward the professional side and along with this an increasing demand to be heard.

An organisation has a right to be heard when it achieves a solid membership base and demonstrates to society the judicious use of privileges guaranteed under international convention and administered by the International Labour Organisation (ILO). More than half of the teacher associations in Africa have reached this take-off point. They have demonstrated to their membership, to society and to government a responsible use of the right (a) to organise, (b) to engage in collective bargaining, (c) to employ full-time officials, (d) to operate the check-off system for dues collection, (e) to represent teachers in employer-employee relations.

But a teachers' association, in addition to enjoying the rights guaranteed to the whole working force as citizens, has a further professional responsibility to its members, to society and to government. This factor is often overlooked. Thus, a strong organisation has as its rationale the service to the whole of society. This is an expanded function for teacher organisations but it is already practised in Africa through: (a) teacher sponsored in-service training courses for members (see appendix B); (b) book development, including writing and publishing journals, materials for new literates and textbooks; (c) the operation of evening schools for the community at large and a permanent training college for branch officers; (d) representation on Ministerial education committees, conducting "education weeks", sponsoring lectures, international travel for members; (e) beginning the operation of self-enforced codes of ethics and profession-regulated qualifications for teaching.

Thus, we feel ready to participate fully in planning meetings such as this. But we are also concerned about the more fundamental questions facing education.

Can an essentially foreign system serve Africa's needs?

Has the planning function sufficiently recuperated from its early failures to be of use?

Is the increasing presence of foreign experts foreshadowing a renewed colonial epoch?

Why are French and English speaking brothers in the teaching profession drifting farther apart each year?

The concern of teachers is broad and deep. We welcome involvement with you. Trust us. Lend a helping hand. Point a new direction. Share your problems with us. We are, after all, in this together.

In light of the above, the World Confederation of Organisations of the Teaching Profession welcomes this Seminar which is being held to define the needs in respect of and perhaps to prepare the ground for a possible conference on the development of examinations techniques and the administration of examinations in the Commonwealth in general, and the West African countries in particular. It is a step in the right direction, a sign of the realization that our whole examination system needs to be improved as well as of the will and determination to undertake the task. We would therefore like, first of all, as observers, to thank the organisers of the Seminar for arranging it, and for inviting the WCOTP to attend.

The whole question of examinations needs to be critically appraised in order to determine whether they are achieving the purpose for which they were designed, and whether they are the best means of achieving that purpose. The time has come to find out whether examinations as we have them, the conventional end-of-the course examinations, are the best means of measuring the potential capabilities and the attainment of students. As some critics of the present system have observed, the most important questions about the present examination techniques is whether they are sufficiently accurate and reproducible for justice to be done to each examinee. This is doubtful. One conclusion is that there is no justification for complacency over present examination techniques. (See, for example, M. Ager and J. Weltrian in Universities Quarterly, June, 1967). Professor H.T. Himmelweit does not seem to us trenchant when he writes, "On the grounds of reliability, sampling of relevant characteristics and the conscious deployment of examinations to achieve given educational objectives, the traditional examination system has hardly anything to recommend it" (Universities Quarterly, June 1967).

Furthermore, the West African Examinations Council inherited its examination system from, and was faithfully tailored on the pattern of, British examination bodies as they existed 20 years ago, and it is necessary to review the system constantly to ensure that it is relevant to the ever-changing situation in the participating countries and meeting their needs. Syllabuses of examinations and methods of examining thrive on constant review; otherwise the former outlive their usefulness and become outmoded, while the latter become obsolete and ineffective.

We may mention here in passing that the need for the reform of our examination system must be seen against the background of the crying need to make our whole educational system more relevant. All over the former colonies in Africa, people are saying that the educational system bequeathed to them by the Colonial Powers does not take sufficient account of their local situation and background, fails to meet their socio-economic needs and leaves their aspirations unsatisfied. The cry for reform appears to be more articulate in West Africa where the need for change is probably more keenly felt. At a recent conference on book development for English-speaking West African countries held in Monrovia, Liberia, participating Governments were urged to initiate action to end "cultural imperialism."

But perhaps the critical review and reappraisal of our educational system in general, and our examinations in particular, belong to workshops or conferences that might follow this Seminar, the main purpose of which is to identify and define our examination needs. We must therefore turn to the immediate concern of this paper which is to draw attention to and seek recognition for what teachers' organisations can do to promote educational planning and reform, with particular reference to examinations, and to determine what use, if any, is being made of teachers' organisations by authorities charged with and engaged in such assignments.

The West African Examinations Council was established to determine the examinations in the public interest in West Africa, and to conduct such examinations and award certificates. During the 20 years or so of its existence, the Council has conducted mostly school examinations. But school pupils, examinations and teachers are a trinity, an interlocking triad, and anything that happens to one vitally affects the others. Any plans to improve examinations which do not take account of the opinion of the corporate body of teachers therefore have not much chance of success, because their successful implementation will depend mainly on teachers.

The West African Examinations Council would seem to appreciate the importance of teachers and teacher organisations for their work, but fails to make enough use of them. A glance through the list of organisations and bodies requested to nominate representatives to the Council and its various Committees, as shown in the Annual Reports of the Council for the years 1970, 1971 and 1972, reveals a serious lack of effective representation from teacher organizations which form the largest body of men who deal with examinations and which constitute the organised articulate voice of teachers. The Council itself has no representation from any teacher organisation as such, from any of the participating countries, namely, The Gambia, Ghana, Nigeria, Sierra Leone and Liberia.

Of the four main Committees of the Council, the Administrative and Finance Committee, the Appointments Committee, the School Examinations Committee and the International Test Development and Research Committee, only the last named has one representation from the Ghana National Association of Teachers; no representation is shown for any of the teacher organisations in The Gambia, Nigeria, Sierra Leone and Liberia

Only the National Committees allow one representative each to the local teachers' organization of each country. It will thus be seen that the vast and almost unique experience of teachers with examinations as concentrated within teachers organizations is not being fully utilised by the West African Examinations Council. In contrast with the very poor

representation given to teachers' organisations, the Ministries of education (the civil service section) and the universities are very heavily represented on most of the committees. Is has been said that the National Committees of the participating countries on which serve teacher organisations in the countries concerned nominate members to serve on the main Council. This is so, but the representations of teacher organisations on the National Committees are so inadequate that unless due notice is taken of the need to get teachers' organisations represented on the Council, they have very little chance, under the present procedures, of getting a representation on it.

It may also be argued that some of the Committees of the Coucil contain members who have either been or are teachers. Our answer here is that these people serve on the council either in their individual capacity, or as representatives of governments or specialised groups, and the views they express are either their individual opinions or the views of their governments or groups. The combined voice of the professional body of teachers must be heard. Members representing teachers' organisations could speak authoritatively for teachers, for they would be briefed after the views of members, especially on important issues, have been sought by the organisations, and they would therefore bring to bear a more representative opinion and experience.

But, it may be asked, what can teacher organizations offer in the matter of the development of examination techniques and administration of examinations? What are they potentially capable of doing? We would answer, "They have a lot more to offer than any other group of people." It was Paul of Tarsus who said, "Salvation is of the Jews", and with apologies to him we would say, examination techniques and administration belong to teachers. Examination is their business, and up to the present time it has been the main method by which they prove and assess their students. The frequency with which teachers conduct examinations for their students differs from area to area and from school to school but at least once a year, and in some cases terminally, teachers deal with examinations. They have thus built up a wealth of experience about examinations which could exploited through making use of and involving teacher organizations which embody the corporate experience of teachers.

There is also the need to relate examinations conducted by teachers in the classroom to examinations conducted by public examining bodies, and this may best be achieved by involving teachers in the work of the public examining bodies. It is in this way that public examinations can be given a meaningful purpose and made to serve national aspirations and goals. Furthermore, the participation of teachers in the work of public examining bodies will ensure that the Council gets the necessary feedback which teachers can provide because of their close contact with and intimate knowledge of the schools, the students and the community, and which will enable the Council to determine whether the examinations are fulfilling their purpose. If it be said the Examinations Council consults administrators of schools and colleges as well as subject associations, we would reply that these form only a small section of teachers, and their involvement cannot obviate the need to utilize the experience gathered in teacher organisations.

In particular, the experience of teachers could be drawn upon for the improvement of syllabuses, question papers, the conduct of examinations and assessment. No other group of people knows more about these than the

combined body of teachers. In the revision and evaluation of syllabuses the contribution of teachers' organisations as representing the entire body of teachers could not be over-estimated. Teachers use the syllabuses to prepare students for the examinations, and they are the best judges of their validity, appropriateness and value.

Normally, examining bodies seek the opinion of examiners on question papers. Teachers' organizations could be encouraged to comment not only on syllabuses but also on question papers taken. They have the machinery through their branch system, which forms a network covering the whole country, for collecting and collating the opinion of teachers and their suggestions for improvements, from the many thousands of their members. Teachers could provide the best commentary on questions, since they know both the syllabuses and the students. In this way it could be ensured that questions are fair and of the proper type.

Finally, while urging that teacher organisations should be made to participate fully at all levels of the West Africa Examinations Council, we would like to remind all concerned with educational planning and reform that the world of formal education turns at the impulse of teachers, and the organised articulate voice of teachers must be reckoned with if success is to be achieved.

APPENDIX A

Composite View of Teacher Organisations in Middle Africa, 1972, prepared by the staff of WCOTP, African Department, from the latest available data.

Country and Organisation	Total Teaching Force	Paid Members	Full-time Employees	Buildings Owned	Check-Off	In-service Training for Members
Nigeria - NUT	190,000	100,000	91	3	Yes	Yes
Ghana - GNAT	57,000	55,000	22	1	"	"
Kenya - KNUT	46,000	44,000	67	16	"	"
Zambia - ZNUT	16,000	12,000	5	-	"	No
Uganda - UTA	16,000	14,000	23	1	"	Yes
Ethiopia - ETA	13,000	8,000	5	1	"	"
Tanzania - NUTA/T	21,000	7,000	3	-	"	"
Rhodesia - RTA RATA	18,000	6,000	3	-	"	No
Sierra Leone - SLTU	6,500	6,000	6	1	"	Yes
Liberia - NTA	6,000	2,000	-	-	No	No
Swaziland - SNUT	2,000	1,200	-	-	Yes	"
The Gambia - GTU	900	600	-	-	"	Yes
Botswana - BTU	900	300	-	-	No	No
	393,300	256,100	225	23		

Country and Organisation	Total Teaching Force	Paid Members	Full-Time Employees	Buildings Owned	Check-Off	In-service Training for Members
Cameroon-FNEPCAM	8,500	4,000	1	-	No	Yes
Congo - SNEC	2,700	2,500	-	-	Yes	No
Cote d'Ivoire-SNEPPCE	12,000	10,000	3	-	Yes	No
Dahomey-SYNPEDA	3,000	1,500	-	-	No	No
Gabon-FNELC	2,000	1,000	-	-	No	No
Guinée-SNTE	5,500	5,300	1	-	Yes	No
Haute-Volta-SNEAHV	5,000	2,500	-	-	No	No
Mali-SNTE	4,300	4,000	1	-	Yes	No
Niger-SNEN	3,200	2,000	-	-	No	No
Rép. Centrafr.-SNEC	2,600	1,000	-	-	No	No
Malgache-FSFAC	7,000	3,000	-	-	No	No
Senegal FNES	8,000	2,500	1	-	No	No
Tchad-SIMEPT	2,000	500	-	-	No	No
Togo-SELT	3,000	2,000	-	-	Yes	Yes
Zaire-FNTZA	100,000	90,000	2	-	Yes	Yes
	168,800	131,800	9			

APPENDIX A continued

APPENDIX B

SUMMARY OF VOLUNTARY IN-SERVICE TRAINING PROJECTS IN AFRICA - IN CO-OPERATION WITH THE CANADIAN TEACHERS FEDERATION AND THE SCHWEIZERISCHER LEHRERVEREIN

COUNTRY	YEAR											
	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	
Nigeria	X	+	+	+								
Malawi		X	X									
Liberia		X										
Uganda			X	XX	XX	XX	X	XX	X	X		
Rhodesia				X								
Kenya			X	X	X	X	X	+	+	+	+	
Tanzania					X	XXX	XXX	XXX	+	+	+	
Cameroon				OO	X	OO	OO	OO	OO	OO	OO	
Ethiopia								X	X	X	X	
Zaire				O	XOO	O	O	OO	OO	OO	OO	
Gambia							X		X	X	+	
Ghana							X	X	X	X	+	
Somalia							X	XX				
Sierra Leone							X	X	X	X	X	
Togo/Dahomey						X		X	+	+	+	
Cent. African Rep. and Lesotho							X	XX				
No. of locations	1	3	4	8	8	10	13	17	13	12	11	100
Tutors Sent	2	18	18	29	38	38	40	52	33	40	35	343

X = Canadian Teams

O = Swiss Teams

+ = Follow-up by WCOTP African Member without outside assistance

Total number of teachers trained: 7,000 - 7,500

THE CONTRIBUTION OF A RESEARCH UNIT TO THE EFFECTIVE FUNCTIONING OF AN EXAMINATIONS COUNCIL

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Introduction

Two criticisms are frequently levelled at the educational researcher; both are made when he has finished his research project and has produced a report on his work. The first criticism is that the problem he has investigated is irrelevant; the second is that his report is written in terms that cannot be understood by a teacher or a layman.

The first criticism is founded in the suspicion which it is natural for a teacher to feel when his work (and perhaps he himself) is the subject of investigation. It is natural that he should feel that the research represents a threat to him: one way of dealing with the threat, of making it less dangerous, may simply be to categorise it as irrelevant. Thus it is possible to say that the findings relate to some other subject or to some other school or to some other method of teaching. This psychological defence has an important aspect: it illustrates clearly that the teacher is just as human as his pupils. He (or she) has all those same weaknesses and strengths which will be exhibited at some time or other in his (or her) own pupils.

The second criticism is more cogent. Teachers and others often state that research findings are couched in terms of jargon. Perhaps some of these critics do not really know what "jargon" is! As defined by a dictionary "jargon is unintelligible words or gibberish". What the critics mean is that some reports use terms the precise meanings of which are not known to the reader. But it must be recognised that as soon as research breaks away from the descriptive (and some research is entirely descriptive), quantities are involved. As soon as we have to deal with quantities we need to treat them in some way; we need to summarise or combine them. Thus statistics enter. Why should people be quite content to deal with arithmetical operations and yet fight shy of statistical operations? After all, the statistican uses the same operations as the ordinary user of arithmetic; he adds, he subtracts, he multiplies and divides. It is true, however, that there are certain concepts in statistical procedures which are difficult to understand; but it must not be forgotten that the teacher and the general reader have not had the same kind of training as that of the researcher. There is little use in telling a teacher that

> "On the basis of the sign-pattern of the unrotated factors, and the results of the graphical rotations, the correlation matrix was re-arranged to group most of the variables in seven clusters, and Burt's method for non-overlapping group factors was applied" (Sultan, 1962),

although there is meaning in it for someone well versed in factor analysis.

It is the duty of the researcher to counter this type of criticism by using every opportunity to educate others so that in every report, article, paper and lecture intended for a non-specialist audience a serious attempt is made to explain the concepts which are being employed. It is impossible to avoid technical terms, difficult concepts and statistical procedures in the majority of research reports; we must explain them in the belief that our audience is willing to learn. Only then will the "jargon" become intelligible.

One frequently hears another kind of comment made about the findings of research. This is that many reports merely confirm widely heeded opinions. The Director of the National Foundation for Educational Research in England and Wales wrote that

> "Education is almost the last major field of human endeavour where it is safe for the amateur to pontificate because everyone is possibly (or probably) wrong, even if every one is probably (possibly) right. One does not need to be expert in any real sense to have an opinion which will be listened to". (Wall, 1966).

If some research findings confirm what we thought was the position then surely this is a gain. Opinion is now backed by evidence; there is a great difference between saying "I think I know that " and "There is evidence that".

Research and an examination council

The dangers for a research group in an examinations council are very similar to those for the general educational researcher. The work of the group must be relevant and must be seen to be relevant. Its reporting must be intelligible. This latter condition may only be met by the appointment of staff who appreciate the importance of this aspect of their work and who are willing to play an educative role by never failing to take an opportunity to explain their methods and problems to their colleagues in administration and to the members of the various committees with whom they will come into contact.

The relevance of a research unit's work is likely to be bound up with organisational structure of the examinations council. Experience in England seems to suggest that the most efficient (and therefore relevant) functioning occurs when the unit is part of the council and yet has a degree of independence. The unit must not be so remote and its work so esoteric that there is no interaction between the staff and work of the council. The unit must be independent of the council in terms of the technical and research aspects of its work although the order of priority in which work is to be completed must properly rest with the council. The council must determine the overall strategy whilst allowing the research unit to develop its own tactics in order to achieve the agreed ends.

The function of a research unit

The basic function of a research unit must be to provide the examinations council with information on which proper decisions may be taken in relation to the examinations offered by the council. The unit should have no part in the decisions themselves; its role is to provide the evidence on which the council will base its decisions. Very often the evidence will not be complete; sometimes it will be conflicting; occasionally it will not be helpful. Nevertheless the aim must be to enable the council to come to a decision because of the evidence rather than in spite of the fact that there is no evidence. It must be recognised that on occasion a decision cannot wait until all the evidence has been accumulated; one cannot cancel next year's examination simply because the research findings are inconclusive or are not yet available!

It follows therefore that probably the greatest contribution a research unit can make is the analysis of past examinations especially if the results of the analyses can be made available sufficiently quickly so that change is possible. The research unit has to deal with the simple question "Is the examination doing what it is supposed to be doing?" The question implies that the objectives of the examination have been clearly stated. In general terms the question involves the consideration of the validity and reliability of the examination. In particular such things as the inter-relationships between sections and between questions, the patterns of choice of question (if choice there be), whether better candidates (in terms of overall performance in the subject) attempt particular questions, whether each question spreads candidates to the same degree and how the average marks of questions range will form the basis of the analysis.

A second function of a research unit will be to act in an advisory capacity to the various committees through which the examinations council works. Almost any issue can arise under this heading. The unit must be in a position to be able to call on the knowledge of other workers in the field, either through personal contacts or through published reports. On an occasion when reference to the technical literature or to other researchers is of no avail then a decision has to be taken whether the setting up of a project to attempt to solve the problem is likely to be worthwhile. But such a decision, as has been said, is not that of the research unit.

In addition to the informative role and the educative role, the research unit should be able to set up its own experiments concerned with the newer methods of examining which are possible: the assessment of practical work; the use of teachers' assessments as a component in an external examination; timed and untimed examinations; examinations in which candidates are permitted to use one or more specified text book; the use of projects as an additional component in examinations; as well as the use of objective test items, especially in those subjects where traditionally the essay question holds sway. Regional differences, cultural differences, syllabus differences and subject differences are such that although what happens in one subject in a particular place is of interest the findings of such a research project are likely to mean that for another subject in a different area another research project must be mounted. This replication of projects is necessary if stereotyped examinations are to be avoided.

It is to be hoped that time will be set aside in a research unit's programme to allow for research projects to be set up to investigate matters which will have a long term result on the workings of the council compared with the immediate effect envisaged above. Topics of "pure" research such as alternative methods of item analysis of objective tests (Rasch, 1966), the use of methods of analysing essay questions similar to that suggested by Morrison (1972) or methods of investigating comparability of standards between subjects (Forrest and Smith, 1972) provide examples of research of this type.

Practical considerations

From what has been said it is apparent that an examinations council will need to set up, on the founding of its research unit, some committee whose purpose will be to define the precise terms of reference of the research unit and then to oversee in a general way the unit's work. The committee will determine the order of priority of the work suggested for the unit in terms of the relative importance of the various projects and decide which are the

most important. Suggestions will come from the committee itself, from the councils' other committees as well as from the staff. Ideally the committee should be in a position to deal with research reports, perhaps offering criticism before they are passed to other committees for action. The research committee will act as a funnel through which the input and output of the unit will pass.

It was pointed out (page 1) that both pupils and teachers are human: so are research workers! It is unlikely therefore that the paragons suggested as being necessary for the efficient functioning of a research unit exist. Nevertheless it is possible to suggest that at least the senior staff of the unit should have had some teaching experience, in addition to training and experience in educational research.

Electronic devices are so common today that it is often forgotten that as recently as 15 years ago the use of electronic computers in education was something of a rarity. Desk calculators are readily available. Although the use of an electronic computer can bring about a great saving in time, it must not be thought that the absence of one precludes the possibility of the analysis of examination data. With clerical help and intelligent use of a desk calculator it will still be possible for a research unit to make its contribution to the efficient running of an examinations council.

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THE PLACE OF RESEARCH AND EVALUATION IN PUBLIC EXAMINATIONS

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Last year alone, the number of persons who sat public examinations in anglophone West Africa was 600,000. Projections for the next five years suggest that the number will increase from 320,000 in 1972 to 380,000 in 1976 in Nigeria alone. In 1965 the Secretary of Cambridge University Examinations Syndicate asserted in Lagos that a huge proportion of West Africa's 'gold reserve' is expended on paying overseas examination fees. At that same conference, people wondered if some kind of screening or hurdles should not be devised to ensure that only likely-to-succeed people were allowed to enter. Sir Davidson Nicol, then the Chairman of West African Examinations Council, thought that taking these examinations repeatedly kept many people busy, out of mischief, and hoping that one day they will make it. Considering these teeming and increasing numbers involved, the effects on foreign exchange and the psychological and therapeutic values, one sees that examinations continue to be a factor of considerable force in our culture. And yet,in this same culture, we hear people say "examination is not a true test of one's ability". Nobody has ever been able to give me a better measure, especially if we agree on the broad definition of examination. There is hardly any need to make further case for the importance of examinations here, as I think it is safe to assume that the audience is convinced of it. It is equally safe to remind ourselves that examinations are held in suspicion by several people: users, takers, parents, etc.

The fears are probably justified because examinations are not infallible. They exist in order to serve some purpose, and it is always necessary to make sure they serve their purposes and that very well. Broadly, the purposes are (a) to maintain standards; (b) to stimulate effort; (c) to serve as an administrative device; and (d) to act as an agent of social reconstruction. Of these four purposes, only two need be discussed at least by way of illustration. First, educational administration. The educational administrator in his duty has to economise in staff and other facilities. He divides the school population into groups and sub-groups, homogenous with respect to their abilities and aptitudes, and houses the groups separately for purposes of teaching. Tests and examinations have always been used for these purposes. The social reconstruction use is in terms of employing examinations (and their results) to speed up social mobility, break through social class barriers, etc.

The aims and purposes of examinations may vary, especially in specifics, from system to system but whatever these specifics may be, criticism of examinations ought to be in terms of their achievement of the purposes for which they are meant. By this I mean that an examination system should be criticised only in relation to its objectives. This process of examining an examination in terms of the extent to which it has served its purpose is evaluation. Needless to say the general climate of our age and its increasing cries of dissatisfaction and dismay with many areas of public service call for this kind of evaluation. The process of evaluation often demands that data be collected and analysed to test hypotheses. But this is also research. Research (especially basic research) is undertaken primarily to discover new knowledge and to test theoretical issues in closely controlled situations. Research and evaluation, though taken as two different things in the topic of this paper

> 'do share many characteristics of methods and approach. Both can contribute to a science of education and perhaps both are required for its (science of education) orderly development.' (Hemphill 1969)

The topic therefore is simply the place of data collection and analysis in public examinations. If research and evaluation in this context are accepted as falling along the same continuum, I shalluse them interchangeably from here on.

For public examinations to serve those purposes for which they are designed, they must possess certain characteristics. Some of the characteristics are technical, some administrative. Even with the identification of these characteristics and ensuring that they are present in the examinations, the spate of criticism still persists. There is therefore the need to search and research for more intrinsic characteristics to ensure that examinations do what they are supposed to do in the way they are expected to do it. By the identification of many characteristics, I refer, for example, to the various researches and studies that led to an awareness of the properties of validity, objectivity, reliability, etc. and the subsequent introduction of objective-type tests. There is need for continuous study to ensure the known qualities, and to identify new ones.

A social process (like examinations) employs research and evaluation as an integral part of its operations. Models exist in a number of fields illustrating this. Researches (and results) in Health and Agriculture provide dramatic examples of the impact of new knowledge obtained through research in social processes. It is also true that every field of human endeavour can improve itself by gathering more information about itself. Public examination is one such social process, and as an aspect of the business of education, it can employ research and evaluation to improve, and to operate. Admittedly, the result of research and evaluation in any aspect of the educational field (like public examinations) may not be as dramatic as a successful heart transplant, but surely more needs to be done in gathering information and, more importantly, in feeding back the results of studies into our educational systems. This pride-of-place of research has always been accepted in industrial set-ups, to the extent that any industrial set-up worthy of its name has a virile and progressive research programme. The drug industry is a good example. In fact any industry that spends as little of its resources on research as we do on public examinations would become defunct in no time. I believe that research is no less important in education and examination than in the industrial set-ups. That examinations remain in spite of this paucity of research programmes relative to industry is probably due to their essential role in society. But, if they are so important to society, they require a corresponding level of excellence which can only result from systematic data gathering and analyses to discover new facts and to improve on existing ones. I suppose that this important role is the greatest justification for research. Having made a case for research in public examinations, one only now needs to pose the important question of what needs to be done to establish a research and development programme which has the potential to add to what we know about, and how to practise the business of examining.

Perhaps we should also consider specific examples of the many areas where research and evaluation are important to public examinations vis-à-vis the two important roles of improving and operating it. These are:

Measurement in the non-cognitive domain

Apart from curricular objectives which examinations must satisfy, there are some basic educational objectives or goals that must needs be served. These have been categorised in three domains of Cognitive, Affective and Psychomotor. Further classifications have also been developed

within each of the first two categories. In the Cognitive domain for instance, a test question might be designed to measure acquisition of knowledge or application of knowledge.

The affective domain refers to the objectives of values, attitudes, appreciation, the testing of which has presented obstacles to test constructors, and which factors are supposed to be inculcated in the schools. In a recent meeting of one of the West African Examinations Council committees, a member affirmed that curricular objectives quite often include these affective goals of character, training, attitudes, etc, and added that the public examinations hardly test them. It was the member's opinion that these important objectives in the non-cognitive domain should be examined. Research and evaluation has a significant part to play in raising the level of our public examinations to include the non-cognitive domains.

Problem Solving

Public examinations present problems and tasks for solution by the candidates. A candidate is judged in terms of the proportion of all the problems that has been answered correctly. To answer correctly often means to give pre-determined responses. Answers unforeseen by the tester are penalised. This is, of course, one of Hoffman's objections to multiple-choice tests (Hoffman, 1962). Returning pre-determined answers is often a result of convergent thinking in Gulford's sense. While it is useful to test convergent thinking, it is also desirable that divergent thinking should be tested. There are, of course, a few tests of creativity devised for the American situation but we can use many more in our public examinations. Research and evaluation can produce these changes.

Even when problems are solved to obtain convergent responses, it is only the end result that our present examinations assess. The process of thinking that produces the final answers is perhaps no less important, yet it defies examining by the present form of public examinations. More research is needed to enrich examination programmes in this area.

Translation of broad policies of education to examinable terms

Most policies of education, at least on the West Coast of Africa, are couched in such global and imprecise terms as: "to produce future leaders of the country, to inculcate high moral and ethical standards, etc." These ideals remind one of the cardinal principles of the American Secondary School. But public examinations, having concentrated efforts on the cognitive demains, have not directly measured the attainment of those aims. Research can play a useful role either to bring examination to the doorstep of the principles and ideals, or to ensure that the ideals are couched in more examinable terms.

The influence of public examinations on teaching and curriculum

Education is a very expensive enterprise. It takes, very often, the greatest percentage of any government's budget (apart from defence). The public examination, as the terminal episode of many levels of education, does affect teaching and the operation of the curriculum. The desirable thing is that the curriculum should dictate and lead the examinations, but by its nature the public examination often dictates the pace. It is does, and if it has to, then efforts must be made from time to time to ensure that the pace dictated by the examination is in accord with the huge amounts spent

and is in the right direction. The way and manner to do this can be learnt through research. This is also an area in which examining should lead to new ideas that will serve to explain why individuals behave as they do in a variety of academic settings.

Assessment of change or growth

Public examinations, being terminal, measure end results. It is perhaps also desirable to measure changes, growth and growth rates in persons. This is another area needing research.

Culture in tests

Cultural factors do affect individual behaviour in many direct ways. There is now a mass of evidence to indicate that cultural differentials are present even in motor and discriminative responses, and consequently in performance in examinations. In the public examinations that we conduct questions of this cultural effect have arisen from time to time in terms of whether pupils from urban and rural areas perform equally on same tasks. In other words, is the pupil from from urban area placed at advantage over his counterpart from the village? If this were so, questioners would like to see public examinations that control such cultural differences. It is possible to ask the counter-question of whether the cultural factors will be reflected in the tasks the pupils will subsequently perform, say in higher education. If they will, maybe the effects should be permitted to persist. The optimistic and popular approach is for the public examinations to eliminate (or control) such cultural factors. The state of affairs now is that people are beginning to speak about "culture-fair", rather than "culture-free" tests. But this is not a final answer to the problem. Research must continue to look for answers to the problem of cultural bias in public examinations.

Validity of public examinations

That public examinations should lead to valid results hardly need be emphasised again. A great deal of effort has been expended on validation studies. But during the past 35 years relatively little gain has occurred in the observed magnitudes of validity coefficients of tests or batteries of tests employed in the prediction of success in academic setting, in the civil service and military services or even in business and industry despite the extensive attention that has been given to this and particularly to criterion problem. As long as public examination results are used for the purposes of these various predictions, they fall within the category of tests whose validity has not improved. Research must continue to hunt for this golden fleece.

There are many more areas of concern in public examinations where research and evaluation can and must come to the aid of public examinations.

Summary

This paper has attempted to indicate that research and evaluation are important in examinations. Continuous research and evaluation are necessary to operate and improve examinations. The present state of examinations, like other social processes, results from research and evaluation. The present status however being far from perfect and therefore an

object of continuous criticisms requires more integrated research and evaluation to improve. The paper ends by giving an inclusive list of areas where research and evaluation are necessary, play and can play an important role in public examinations.

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THE EXAMINATIONS SCENE IN SRI LANKA (CEYLON)

(with particular reference to the problems connected with the examination of PRE-VOCATIONAL SUBJECTS)

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Historical Aspect

The public examinations system in Sri Lanka, particularly at Junior and Senior Secondary Schools level, has developed over a period of one hundred and ten years, but for as long as eighty years Sri Lanka depended on the Cambridge Local Syndicate and the University of London for the designing as well as administration of these examinations. It would appear that in the early days two main courses led to the conducting of public examinations in Sri Lanka: one was the urgent need to provide schools with qualified teachers; the other was to raise the standard of instruction imparted in the schools.

The indigenous examinations entered the scene in a significant way during the Second World War and progressively displaced the Cambridge and London University examinations, completing the process by 1964.

Present Set-up - Central Agency for Examinations

At present, the entire system of public examinations is centrally controlled by the Department of Examinations which derives its authority from an Act of Parliament dated 16 June, 1968, and comes within the purview of the Ministry of Education. The overall educational policy of the Ministry is reflected in the administration of the examinations system, and the Department is placed in the charge of a Commissioner who is drawn from the Unified Education Service.

Testing programme of the Department

The testing programme of the Department runs into more than one hundred examinations a year, and these can broadly be categorised as School Examinations, Teacher Education and Technical Education Examinations and Recruitment, Proficiency and Efficiency Bar Examinations conducted to meet the cadre requirements of the various state Departments. In addition to these, the Department also administers several specialized professional examinations on behalf of recognized foreign institutes, such as the City and Guilds of London Institute and the Association of Certified and Corporate Accountants.

The Department's heaviest commitment, however, is in the area of public examinations at Secondary School level. The General Certificate of Education (Ordinary Level) is taken by about 375,000 candidates who have a range of about 55 subjects in the three languages (Sinhala, Tamil and English) to choose from and is held once a year in December; the General Certificate of Education (Advanced Level) is taken by about 40,000 candidates and has a range of about 40 subjects available in all three media. This is held every year in April.

Department's resources

The Department functions in association with other relevant Departments and administrative agencies in the matter of drafting of syllabuses for different categories of examinations, and both in test construction as well as assessment it relies largely on the resource-personnel attached to the Curriculum Development Department of the Ministry of Education, the teaching staffs of the five campuses of the University of Sri Lanka, Technical Colleges and Teachers' Colleges, as well as experienced practising teachers.

The Department has its own specialist staff who have been recruited from among experienced teachers and educational administrators.

It has also its own machinery for printing examination documents and attends centrally to the distribution of question papers, collection and despatch of answer scripts, receiving and recording results and issuing of Certificates in respect of all examinations except those of foreign institutions. Computer services are used for the processing of all data relating to GCE (OL) and (AL) as well as the Technical Colleges Entrance Examination, these being the examinations catering to large population groups.

Consequences of local control of examinations

With national control of the entire examinations system, as expected, notable developments have taken place in the area of curriculum reconstructions. The Education Ministry established a Curriculum Development Department to handle all the programmes that were taken in hand in order to keep pace with the rapid changes in educational reforms.

Educational reforms

The Education System in Sri Lanka at the present moment is going through a rapid process of change. It is important to bear in mind the rationale on which these reforms have been conceived in order to find directions for corresponding reform in the system of educational examinations.

The priorities that have prompted the introduction of these reforms are: realignment of the curriculum to ensure that education, even general education, forms an integral part of the national programme of socio-economic development and enables every citizen to effectively participate in the economic and cultural life of the nation, increased equality of educational opportunity, and an increased internal efficiency of the educational system to ensure optimal use of scarce teaching resources.

Innovations effecting radical changes both in content and structure of the system have already been initiated to achieve these objectives.

Under the new scheme which came into effect from 1972 and is being progressively implemented, Primary Education will comprise grades 1 to 5 only, while Junior Secondary Education comprises an integrated 4-year programme common to all pupils and extending from grade 6 to grade 9. This is followed by a 2-year programme of Senior Secondary Education in grades 10 and 11 at which stage there will be specialization into different streams corresponding to the different occupational families.

The advantages in these changes are many. Resource-wise there is a saving in that the years of study required to complete Primary education are reduced

from 10 years to 9 years. Experience has shown that it is not necessary or desirable to assign children to specialised streams during that phase of the education programme in which numbers are unrestricted, to which there is "open access".

Streaming at this stage which was the earlier policy has created the problems of producing large numbers of 'Arts' pupils whose specialisation is essentially non-vocational in character and of producing a number of young pupils qualified in science, commerce etc. without any relevance to the corresponding openings for work or higher studies in these fields.

A manifest reason for the adoption of remedial measures of this nature in the area of National Education System is the very high rate of unemployment among the educated youth of the country. Ninety per cent of those aged 15-19 years and 60 per cent of the age group 20-24 years are unable to find employment of the kind they have been taught to expect.

In view of the fact that education already accounts for 20 per cent of the Government's annual budget or nearly 5 per cent of the GNP it is clear that specialised education needs to be regulated in relation to the requirements of the country for trained manpower.

The kind of Secondary Education which may have been appropriate to an age when all the products of Secondary Schools could be absorbed into middle class occupations has now become glaringly inappropriate. Under a system of education which is free from kindergarten through University in the pupil's mother tongue medium, some 35 to 45 per cent of each group receive ten years or more of schooling and most of them have no alternative but to become farmers and manual workers.

The general criticism levelled at our Secondary Education system was that instead of adapting themselves and becoming instruments of general education, it has continued to retain its single-minded concern with qualifying pupils for white-collar jobs, by pushing as many students as possible as far up the ladder as possible.

The drop-out ratio in Primary education and failure rates at GCE 'O' level and 'A' levels have also been alarmingly high. The passing of the examination assumes such overwhelming importance as the sole raison d'etre of schooling. The schools' function to educate has been superseded by the demand that it qualify. The consequence is that the knowledge and skill acquired by the majority who fail these tests which are designed to prepare the successful minority for further education are inappropriate to their needs and those of the nation. The effect on the fortunate ones who succeed is also not quite salutary. Since they have been for many years conditioned to look on learning as a means of gaining not knowledge to do a job but primarily the qualification to get one, it is not surprising that they often consider their job as something which entitles them to status and salary only and not as an opportunity to earn these, much less as an opportunity for self-fulfilment or for public service.

National Certificate of General Education

As part of the strategy to bring about the re-orientation that is desired all pupils at Junior Secondary Level (Grade 6-9) are provided with a common programme of studies with the necessary differentiation for boys and girls. The National Certificate in General Education as a terminal examination will

replace the GCE 'O' level by 1975 providing for the GCE 'O' level to continue as a parallel examination for a further couple of years to meet the needs of those who had skipped the new curricula that was introduced at Grade 6 level in January, 1972.

The National Certificate of General Education will not be a pass/fail examination, instead each pupil will receive a Certificate indicating his performance in the different subject areas. Admission to Grade 10, the first grade at the Senior Secondary level, will be on the basis of the performance at this examination.

The subjects that form the common curriculum and are to be tested for the NCGE are as follows:

(1) Religion (Buddhism/Hinduism/Islam/Christianity RC/ Christianity Non-RC)

(2) Medium of Instruction (Sinhala/Tamil/English)

(3) Second Language (English/Sinhala)

(4) Mathematics

(5) Science

(6) Social Studies

(7) Aesthetic Studies (Art/Music/Dancing)

(8) Health and Physical Education

(9) Pre-vocational studies I

(Comprising (i) Study of National resources
(ii) Geometrical and mechanical drawing and
(iii) One of the following: Elementary agriculture, woodworks, metalwork, ceramics, weaving, commerce, home-science, needle-work, Sinhala as third language or Tamil as third language)

(10) Pre-vocational studies II

(One pre-vocational subject selected on the basis of facilities available in the locality of the school and approved by the Ministry)

The curricula for the General Education are expected to relate much more closely to the world of life and work, and science and social studies to relate more closely to the application of these in trade, industry and agriculture.

Pre-Vocational programme of studies

The pre-vocational studies will receive a time allocation of nearly 20 per cent of school time and will incorporate teaching sequences dealing with important local occupations and industries such as fisheries, cash crop agriculture, animal husbandry, horticulture, cottage crafts and service occupations such as retail trade etc.

The new programme is expected to contribute in a big way towards the enrichment of education at this level by breaking down the compartmentalisation between school book-learning and real life that has often initiated the educational outcomes and by providing basic skills, knowledge and correctives to attitudes help the coming generation to take up gainful employment in the areas of national need.

Much depends on the sense of commitment which teachers will bring to bear on the implementation of the programme and the quality of guide material that could be made available to them. Since these have been made subjects for a public examination safety of the programme also depends on the methods of evaluation and the prestige value attached to the gradings in the area.

As the Elementary and Junior span has also been reduced from 10 years to 9 years more intensive use of teaching resources have to be made to avoid a fall in standards.

The present period therefore represents a critical phase in the Examination Department's history. It has to retain the aspects of security that ensure impartiality and impersonality of its certifying function while at the same time sharing with the teachers and Regional agencies a good part of its functions. Having to cope with an ever-increasing clientele seeking improved test designs in the face of inevitable ceilings in space, men, money and machinery presents a formidable challenge.

Committee of Inquiry into Public Examinations

It was with this situation in mind that the Honourable Minister of Education appointed a Special Committee to inquire and report on public examinations at Secondary School level in Sri Lanka. This Committee, in their interim report issued in December 1971, have made some very useful recommendations which are now under consideration for implementation.

The committee has based its proposals mainly with a view to developing an educational testing system in which teachers will be increasingly and continuously involved and for using testing procedures to stimulate and develop good classroom practice.

The Committee recommends the redesignation and re-orientation of the Department of Examinations as the Department of Educational Testing. The Department has been called upon to give due emphasis to the academic aspects of testing and to work in closer co-operation with the Department of Curriculum Development.

It also recommends the establishment of a National Council for Educational Testing which will co-ordinate the work of a variety of working committees and Regional Advisers entrusted with the responsibility of continuous revision of different aspects pertaining to educational testing.

Recommendations have also been made for setting up of Syllabus Committees, Examinations Design Committees, Examinations Report Committees and a Research Unit as well as an Information Unit. There will also be Regional Evaluation Assistants who will handle the examination work at Regional Level and provide feed-back information to the centre.

Decentralization of National Certificate of General Education

The Committee has recommended progressive decentralization of the General Certificate of Education or its equivalent National Certificate of General Education on the following lines:

The examination in each subject will consist of 3 parts:

Part I - Objective-type questions designed by a Committee responsible to the Department, and to be administered by the Centre.

Part II - Structural free response type questions to test higher (cognitive) abilities.

This will have three alternative test papers,
(a) made by the centre,
(b) made by the region,and
(c) made by the school.
A school can opt to take any one of the papers giving prior notice to the authorities. The (b) paper for the region will be designed by a panel of teachers responsible to the Regional Director and the (c) school paper will be moderated by a panel under the direction of the Regional Head.

Part III - In-course assessment.

The course assessment which will finally be indicated in the Certificate will be a cumulative assessment over the full period of the course.

Part I, the objective test, will also serve the purpose of screening the candidates. Answer scripts of part II will not be marked in the case of those candidates who constitute the lowest 25 per cent in part I. Grades will be indicated only for part I and III in the Certificates issued to such candidates.

Performance in part I paper will also be used in monitoring the (b) regional and (c) schools part III performances to ensure standards and comparability across the regions.

Examination systems responsibility

The major task ahead of the Examinations system is to adopt itself to the new spirit that must necessarily pervade the classroom with the introduction of the new curricula and new methods of teaching.

Teachers are called upon to learn and teach about new topics, such as occupations of importance in their own locality. They are asked to arrange outings and practical work and to enlist the help of local craftsmen, agriculturists etc. as resource persons visiting the classroom. Even in the teaching of traditional subjects they are expected to bring out the interdisciplinary relationships and make their teaching more meaningful and activity-based.

Under this programme different geographical areas will select different occupations to teach and different occupations will involve different work loads for purposes of study. Each will have to be weighted in terms of its

complexity for children of this age level. The proportionately large block of time allotted to these subject areas is bound to influence the rest of the curriculum.

On the other hand, ours has been a country where good job opportunities have been rigidly linked to schooling, and parents, teachers and pupils have looked upon learning and teaching as primarily designed for examinations which exist for the purpose of grading people for jobs, or for further education. Under such conditions the nature of examinations will determine the nature of teaching. Memorisation is often over-emphasised as against imaginative understanding and other value-forming functions of education. Therefore the function of examining in these vocational subject areas will have to proceed with utmost care and with close co-operation with the teachers.

The examination system's special task will be to develop testing procedures that will stimulate investigational work and project work by pupils and teachers, discussion and activity in the classroom that will foster imagination and understanding; and testing procedures that will pay attention to the affective and psychomotor domains of pupil behaviour and not only to their cognative behaviour.

The decentralization that will inevitably come with the pre-vocational testing programme is expected to give us some lead in this direction.

In 1975 the GCE 'O' candidates and NCGE candidates will number over 640,000. Practical subjects will be offered by over 220,000 candidates. It will almost be an impossible task to conduct individual practical tests for this population. The subject teachers cumulative in-course assessment will have to be accepted.

The teachers themselves will have to be trained in methods of evaluation and be provided with carefully constructed rating scales and check lists to assess their own pupils. Assessments will vary from subject to subject, in some the concern may be with abilities in psycho-motor domain while in others attitudes may be considered important. The assessments made through observation of student behaviour while learning an activity is as important as assessing the quality of a finished product.

In addition to the teachers' own gradings teams of inspecting officers qualified in the various fields of occupational areas will have to be sent round to assess the programme of work on an institutional basis, and also carry out random tests to check on the quality of the total programme and help teachers revise their assessments if necessary.

In this context the scheme of continuous assessment of practical work in science subjects at the Sri Lanka GCE (Advanced Level) Examination could be regarded as a forerunner. Hitherto the examination in the Pure Sciences at the Sri Lanka GCE (Advanced Level) Examination consisted of two theory papers and a practical test in each of the four subjects. In view of the high degree of subjectivity, low reliability and the total inadequacy of the practical test, a more suitable technique of greater educational value was introduced in April 1972. In the new scheme the practical test was replaced by a continuous assessment of practical work done during the two year period. An elaborate scheme with clearly defined objectives has been laid down for the continuous assessment of practical work in schools. Organizational machinery has been set up to consider probable aspects of strength and weakness in the new design and based upon feedback information gathered during the years ahead,

the weaknesses could be identified and progressively eliminated. It is envisaged that this also could provide a suitable background to generate a practicable and realistic scheme for the in-course assessment of Pre-Vocational subjects.

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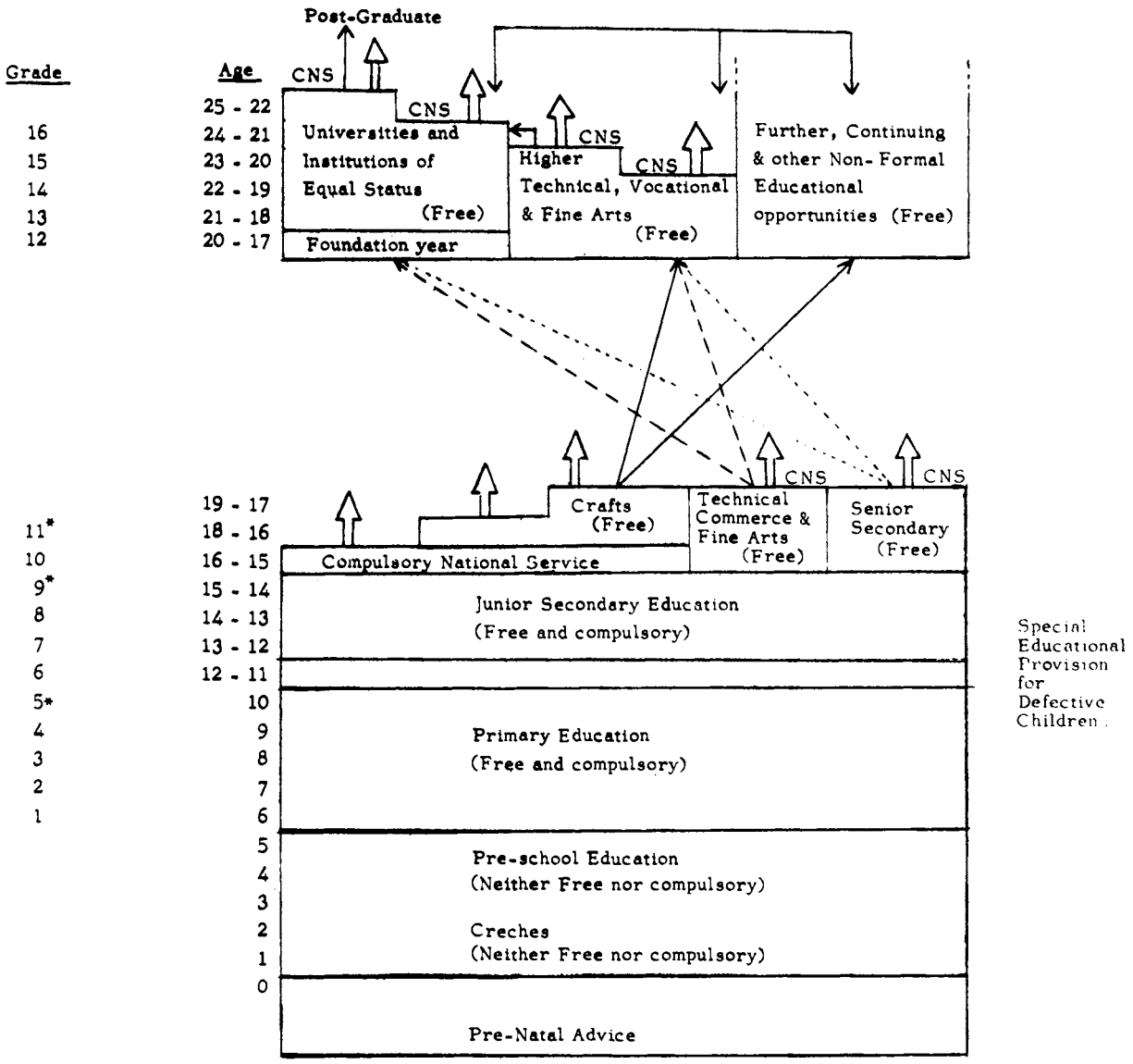
PROPOSED SYSTEM OF EDUCATION

(SRI LANKA)



KEY

* Single repetition permissible

CNS - Compulsory National Service

↑ - To employment

THE DEVELOPMENT OF AN EXAMINATIONS SYSTEM IN MALAYSIA, WITH SOME REFERENCE TO THE DEVELOPMENT OF A PROGRAMME OF GUIDANCE FOR SCHOOLS

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In the Malaysian context centrally organised and administered examinations are fairly recent developments. In fact, the national body that is entrusted with the task of organising and administering such examinations only came into existence less than two decades ago. This body, known as The Examinations Syndicate, is a set-up within the Ministry of Education and on its own it is only responsible over national examinations up to the level of lower secondary school. At the upper and post-secondary level it is still conducting examinations in collaboration with an external body, though presently definite steps are being undertaken to prepare itself for the complete takeover of such examinations at the earliest possible date. With this very brief background of examinations set-up in Malaysia I now propose to devote the rest of this paper on examinations at the primary school level where the Examinations Syndicate has had considerable involvement and also where the subject of this paper can be more pertinently discussed.

2. One examination centrally conducted by the Ministry of Education in primary schools is the Standard Five Assessment Examination. Another, which incidentally is just being introduced for the first time as from this year, is an assessment of pupil-performances at the Standard Three level.

3. Before discussing these examinations and their functions in detail it is perhaps worthwhile for me to begin by stating a few basic facts pertaining to the state of primary education as existing in Malaysia today:

3.1 Primary education is universal and free.

3.2 It is provided in four language media of instruction - each medium being the mother tongue of one major group in the community.

3.3 It aims at the ideal of a comprehensive education for every child.

3.4 The curriculum is specified by gazetted subject syllabuses and schemes of studies drawn up by the Ministry of Education.

3.5 Irrespective of his performances in the examinations conducted by the Ministry every child is entitled to move up from one grade to another automatically.

4. Having solved the quantitative aspect of providing every child with a minimum of nine years of education - free at the primary school level which covers a span of six years - the Ministry is currently turning its attention

more intently on the qualitative aspect of the education provided. In the last few years many studies have been conducted by the respective divisions of the Ministry which have led to the reexamination of the product and process of primary education with regard to quality and efficiency.

5. The examinations systems for primary schools, i.e. the Standard Five Assessment Examination and the Standard Three Tests were introduced with the specific purpose of improving the qualitative aspect of primary education. No administrative decisions are taken in respect of selection or streaming of pupils based on those examinations or tests, unlike the case of the former Secondary Schools Entrance Examination that ceased to exist as from 1964. The guiding principles behind the examinations for primary schools can be summarised as follows:

5.1 To provide normative information on pupil-performances at critical levels of primary education, viz Standard Three and Standard Five.

5.2 To provide feedback to schools on common weaknesses of pupils in specified areas of learning - feedback to be given with regard to group weaknesses as well as individual weaknesses.

5.3 To provide feedback to the Central Curriculum Committee on the state of the curriculum for the respective subjects as implemented in schools vis-a-vis pupil-learning and pupil-performances, and to single out areas in the curriculum that need study and review and to suggest the directions in which such reviews should move in order to attain desirable outcomes for specified objectives in a curriculum.

6. The two examinations in question meet the guiding principles laid down above in varying degrees and extent. At this stage it would probably be useful to examine the two programmes in detail.

The Standard Five Assessment Examination

7.1 It consists of a battery of objective - tests - one test for each subject in the primary school curricula for a given type of primary school.

7.2 The tests are achievement tests which test mastery of the elements in the curriculum specified for the first five years of primary education. The sixth year of primary education is essentially devoted to remedial education for the weaker group of pupils and extending the experiences of the abler group.

7.3 The results are reported so as to specify a pupil's performance in comparison to the performances of his peers in the nation. The results are graded on a five-point scale which demarcates pupils' achievements as very good, creditable, passable, poor and very poor. This normative information is particularly useful to schools in the outlying areas and schools that are of recent origin where the corresponding local peer group performances are relatively lower than those in urban schools and schools with relatively longer history.

7.4 Test reports are sent out to all schools. These reports are usually general comments on group weaknesses. The schools are grouped in accordance with language media of instruction and their backgrounds.

Although these reports do not match the situation existing in any particular school in all respects they do however come fairly close to the situation existing in a particular group of schools to which they are aimed at.

7.5 Performances of pupils in each subject area are analysed in detail and the findings channelled to the Central Curriculum Committee for study and action. The Central Curriculum Committee in turn would set up a sub-committee to study the findings in detail and to institute curriculum review studies if the situation warrants it. Subject specialists from the Examinations Syndicate normally sit on this sub-committee.

7.6 In the last three years the findings of the Examinations Syndicate have been responsible for initiating curriculum studies and reviews in two main language areas (Bahasa Malaysia and English) and in Mathematics.

8. The most striking finding of the Examinations Syndicate with regard to pupil-performances in different subjects is that these performances could be stratified on the basis of pupils' pre-disposition, their physical environment and their school's medium of instruction. When stratified on the basis of the medium of instruction the group that does show the highest proficiency on Behasa Malaysia (Malaysian Language) tended to show the least proficiency in mathematics and vice-versa. The rural schools tended to have greater variances in school means than urban schools. These variations in performances are due to variations in (a) physical facilities (b) quality of the teaching staff and (c) the differences in implementing the curriculum in different degrees of enthusiasm and efficiency.

9. The curriculum as it existed then suffers from a lack of clarity and specificity. The immediate task was to review the curriculum and to spell it out so that its objectives are made clear in that they specify for every content in as great a detail as possible the learning situation to be created and the pupil action to be invoked, as well as state the criterion level of acceptable performance appropriate to that stage. This generated two distinct activities. The language group moved in the direction of conducting a word-count to establish the basic vocabulary to be mastered by pupils and work on the study of functional grammar for establishing guidelines in language usage. The mathematics group moved in the direction of identifying terminal objectives at each level of the primary education and specifying them in terms of behavioural objectives. The work done in connection with analysing the tasks/objectives at each level in the curriculum and spelling them out specifying the stimulus situation to be created, pupil responses to be expected, and the level of responses that is required, for everyone of the objectives at a grade level is a recent development in Malaysia. The new syllabuses have been tried out in pilot schools, and evaluated. The syallabuses for language have been implemented, but the mathematics syllabus has to go through another stage of review to accommodate new clements brought in as a result of the recent introduction of modern mathematics in secondary schools.

10. The Standard Five Assessment Examination has fulfilled the guidelines mentioned in 5.1 and 5.3 completely and 5.2 only partially. It fails in providing feedback to schools in respect of individual weaknesses of pupils.

11. Feedback information on individual weaknesses of pupils is useful only if we have the facilities and occasions to organise a programme of remedial education based on the feedback we get from the administration of a battery of diagnostic or semi-diagnostic tests. The situation existing at the end of the fifth year of primary education does not allow for the conduct of a meaningful remedial education. It was therefore decided that the diagnostic programme is best introduced at an earlier stage of primary education - namely at the Standard Three Level.

The Standard Three Tests

12. The primary objectives of the Standard Three Tests can be listed as follows:

12.1 To highlight the importance of pupils acquiring sufficient mastery of the basic language and mathematics skills in lower primary education.

12.2 To identify and study the requisite basic skills and to disseminate information about them to schools.

12.3 To set minimum levels of acceptable performances in these basic skills so that teachers could practice target teaching.

12.4 To report pupil-performances in respect of individual weaknesses in the basic skills so that appropriate remedial learning may be devised for every individual pupil.

12.5 To provide feedback information and critique for ongoing studies connected with compensatory education and curriculum review.

13. The tests will be confined to two principal areas, viz languages and mathematics, and will consist of multiple choice objective questions. Each test is a diagnostic/semi-diagnostic instrument and is built on the following terms of reference:

13.1 The test will identify, specify and also evaluate performances on the miminum number of cora skills/tasks that needs to be mastered by a pupil in the first three years of primary education. Mastery of these basic skills/tasks would form the minimum attainments necessary for pupils to profit from future learning experience.

13.2 A pupil's performance in each skill/task will be tracked by a number of natural items built on a logical and developmental sequence. Each item or group of items included in the tests would be characterised by a description of the diagnostic intent of the item when it was formulated.

13.3 Each test will contain sufficient items for each skill/task evaluated and these items will be arranged in an ordered sequence so that the 'dropping-off' effect after a certain point in the sequence would indicate the level of proficiency of the pupil.

14. As the Standard Three Tests would be structured on the concept of basic skills the feedback from the Examinations Syndicate on pupil-performance of each school would therefore specify the weaknesses of the pupils in these basic skills for language and Mathematics. The teachers would thus know what the basic skills are and also what is considered as the

acceptable norm or level of performance in each of the basic skills. The dissemination of this information would help the teacher in organising future instructional programmes to make his pupils attain, as far as possible, the norms of minimum proficiency in the basic skills. After this, the teacher can move on to the teaching of peripheral skills if he has the time and if his pupils have the ability and also show the readiness to move ahead.

15. I have, as indicated at the outset, only confined my discussion to the examinations systems as they exist at primary school level primarily as an attempt to fulfill the subject requirements of this paper for which admittedly not much as yet can be said of the secondary school level, particularly the upper and post-secondary level where curriculum development by necessity has to be geared to the requirements of 'external examinations'. What I have been able to present in this brief paper I hope will provide some basis for discussion in this Seminar.

GUIDANCE AND COUNSELLING IN MALAYSIAN SECONDARY SCHOOLS

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The educational system operative in West Malaysia provides for six years of free primary education available in the four media of Malay, English, Chinese, and Tamil. A further three years of education is available in Malay and English. These three years of education comprise the comprehensive stage of education; subsequently the pupils are streamed for general, vocational and technical education. Pupils who proceed for post-secondary education are selected on the basis of their academic performance. There is a great demand for education and a consequent need for guidance to help pupils make intelligent choices and adjustments so that in the long term they will benefit from the education provided, choose their own way of life and attain vocational and life goals satisfactory to the individual and of relevance to the country in its present state of development.

Before discussing the programming of the guidance system in secondary schools it is pertinent to view those areas in the life of the Malaysian adolescent which tend to pose problems with which they need help. Some of the problems posed are those common to adolescents the world over, others are peculiar to the youth of the Malaysian cultural milieu.

One major problem area may be termed adjustmental. The adolescent pupil has to adjust himself to being taught in a medium different from that he was used to during his primary stage of education. He has to adjust and integrate himself to the less personal secondary school. He becomes increasingly aware of cultural and social differences amongst his peers. He is posed with the problem of choosing his electives soon after his entrance into the secondary school. All these problems assail him, when he is on the brink of adolescence and when the individual is in a new environment, and in need of help to orient himself to the new roles expected of him.

Another major problem area may be described as developmental. The secondary school adolescent finds that he has to develop his traits in certain directions if he is to be regarded as developing positively in the eyes of critical adults. In West Malaysia, as elsewhere, a horde of influences impinge on the impressionable adolescent. He often perceives a sharp dichotomy between expression and implementation. There is also the generation gap in attitudes and values between the adolescent and his parents, and he finds difficulty in reconciling the preachings of adults to the situation in which he finds himself. Rapid changes in the social, economic and political conditions in the country aggravate this problem area.

As he approaches the end of his formal secondary school-life the problem of choice of career looms large. In an essentially agricultural country with a large youth population, where industrialization is relatively at its infancy, the world of work is highly competitive and selective. In a situation where potential labour is in excess of jobs available, the average adolescent pupil is in dire need of guidance and counselling. The realities of the harsh world of adults are realities which the adolescent has to under-

stand and adjust to in a relatively short time if he is to eke out a satisfactory livelihood.

In summary it might be said that the overall problem of the secondary pupil is this: that of developing from adolescence to adulthood and at the same time overcoming handicaps or adverse conditions simultaneously in a relatively short time.

It will be seen that there is a need for a guidance and counselling service in Malaysian secondary schools. This need has been recognised by the Ministry of Education, and through its direction, guidance is becoming an increasingly important facet of secondary education.

Admittedly guidance is a relatively new approach in secondary schools, but a fair amount of activity is being undertaken by schools in order to alleviate the problem areas in the life of adolescents.

The Ministry of Education has to date undertaken the task of planning and organising Guidance in schools. Some of the preliminary work in this connection has included the introduction and maintenance of cumulative record cards, the compilation of bulletins on guidance for the information and implementation of the guidance teacher, follow-up studies of guidance in schools, and the organisation of seminars and in-service courses for guidance teachers. Shortly, six officers are to be appointed as Regional Guidance Officers to ensure that effective guidance is available in schools. These various steps are all geared to provide guidance at schools with the boost it deserves.

In the secondary school itself guidance is provided in a variety of ways. The guidance teacher is responsible for the guidance programme in each school, but the guidance function is carried out by all teachers. In the bigger residential secondary schools the house system has been used not only for games participation but also for the development of the tutorial tradition where a teacher is a mentor and friend to a group of pupils who turn to him for guidance in matters of personal development, social relations, learning difficulties and allied problems of adolescents. In other schools the guidance teacher is especially allotted a timetable comprising in the main the teaching of Civics. Thus the teacher has that much more time, while teaching Civics, to undertake group guidance, discuss values and attitudes, teach occupations and prepare pupils for adult roles. In some other schools the time allotted for the teaching of Home Science is partly devoted to guiding pupils in matters of code of conduct, personal difficulties, and the establishment of satisfactory relationships with the other sex. The secondary school curriculum provides an excellent springboard for an indirect guidance role.

The guidance programme in a secondary school may be described as geared to the purposes of orientation, appraisal of the individual pupil, conveyance of job information, and helping pupils in personal-social relations. Undoubtedly the achievement of these objectives requires the co-operation of not only the teaching staff, but also the expertise and active support of other agencies, both governmental and private bodies.

Throughout the secondary school career of an individual pupil a personality profile of the individual emerges through the maintenance of the cumulative record card, anecdotal records of him, record of his test results, his activities membership, and the record of his interviews with the guidance teacher. On arrival at the first year of secondary schooling, he is

familiarised to his new environment, through an orientation programme. A pupil who is weak in certain subject might be given special attention. All pupils have access to the guidance teacher, and on occasion the guidance teacher might make home visits to gain the co-operation of parents in sorting out problems.

In the second and third years, while the guidance teacher organises the programme to place sufficient stress on the personal and educational development of pupils, the main stress is laid on helping pupils in their career development. For this purpose pupils are helped in their choice of electives, the teacher of Civics or English teaches pupils in areas related to the world of work, such as on how to apply for a job, the nature of job interviews, the particular careers open to pupils with various stages of secondary schooling, and he encourages pupils to think and articulate on themes related to their ambition or their self-concept. The pupils are helped to explore their interests and aptitudes by making available to them experiences which are job-oriented. Thus pupils are encouraged to think about the job implications of their participation in extra-mural activities. Organised visits to places of training and employment, the viewing of films on jobs, the provision of job experiences, and group project work in the detailed study of certain occupations are all primed to the broad vocational development of pupils and to the aim of helping them to specify in their own minds on a rational basis the career of their choice.

In the fourth, fifth, sixth and seventh year the programme outlined above is continued with certain modifications brought about by the fact that the pupils are older, more mature, and the problem areas are those of a personal nature or those related to entry into the world of work or further studies. The persons concerned with guidance in schools have liaison with personnel or persons from the Ministries of Labour, Health and Social Welfare, philanthropic organisations such as Apex, Rotary and the Council of Child Welfare.

Much is being done in the area of guidance, but counselling proper is in the main absent. True the guidance teacher does help pupils through talking to them, interviewing them and suggesting courses of action they might take, but counselling by properly trained personnel exists only in a couple of secondary schools.

It is recognised that it would be desirable to have at least one full-time guidance teacher in each secondary school but at the moment this cannot be implemented in full because there are other priorities to be considered as well. However there is a growing number of advocates of guidance, and the crucial factor in this respect might well be the assessment of the effectiveness of guidance by the principals of the school. In the final analysis their testimony on guidance in the secondary schools might well give a new boost to the guidance course.

ESTABLISHMENT OF THE CARIBBEAN EXAMINATIONS COUNCIL

A. Symonds
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After a little more than 10 years in its gestation, the Caribbean Examinations Council was finally inaugurated on 11 January 1973 with the following territories participating: Antigua, Barbados, Belize, British Virgin Islands, Cayman Islands, Dominica, Grenada, Guyana, Jamaica, Monserrat, St. Kitts/Nevis/Anguilla, St. Lucia, St. Vincent, Trinidad and Tobago and the Turks and Caicos Islands.

The area of operations of the Council is now divided into two zones, the eastern zone with the Administrative Headquarters of the Council situate in Barbados and the Western zone with an administrative centre based in Jamaica to serve the territiories in that zone. The western zone will be headed by a Pro-Registrar who will be responsible through the Registrar to the Council. The Registrar will be based at the Administrative Headquarters in Barbados to hold direct responsibility for the operation of the eastern zone and will be available to advise and assist the Pro-Registrar in relation to the western zone.

It had been intended that prior to the inauguration of the Council an Examinations Research Unit would have been established to have carried out the preliminary work necessary to provide the material on which testing and syllabuses might have been based and permitting an early start to the Council proceeding to set its own examinations. This however did not materialize and the Council has been inaugurated without having the prior advantage of any research or statistical background specially directed towards this objective. The Council has therefore decided that such research as may be required should be conducted within the framework of the professional or specialized staff of the Council and that this should be done in collaboration with the Universities in the region. As a result, the Research Unit will not be a separate operation, but when staff is available will form part of the administration of the Council, even though it is likely that in the initial stages, at any rate, the Council will commission research from the Universities of Guyana and the West Indies.

The immediate needs of the Council are to appoint administrative and professional staff, and steps are being taken to have the Registrar and Pro-Registrar appointed in the very near future and thereafter on their advice such other staff as will be required in the early years. It is intended to approach the Cambridge Examinations Syndicate for assistance in the training of personnel and the provision of such consultant or consultants as may be needed to assist the Council in getting its preliminary work done.

To date there has not been any concerted effort at building up in the separate territories expertise in the fields of syllabus formulation or marking and correcting of scripts and while from time to time individual territories have approached the respective examining bodies in the United Kingdom as to the introduction of special syllabuses, this has not yet been done in any well organised manner. Curriculum committees have only been recently established in the territories of the region to analyse and determine the curricula needed for school leaving examinations. There will therefore be the need for a period of time to make a concerted effort to have people at all levels in the educational system exposed to these several experiences in

order that they may become proficient as examiners and in the formulation of syllabuses on which the Council will be able to be guided when setting its own examinations.

The history of examinations in the region does not suggest that problems of security will be insurmountable or that the teachers will be unable to rise to the challenge of participation in the setting and marking of examinations when agreed syllabuses have been formulated based on the curricula which the several territories will determine to meet their needs.

It is expected that the Universities in the region will continue to use the examinations set for school leavers in the secondary system as a basis for entry to their institutions. The constitution of the Caribbean Examinations Council provides for membership of the Universities of the West Indies and of Guyana, and for a Vice Chancellor of one of these Universities to be Chairman during the first three years. This link with the University will ensure that adequate standards are established at the outset.

It is obvious that the experience of other countries who have established their own Examinations Council will be invaluable to the Caribbean, and the Council hopes that opportunities to send staff, teachers and others engaged in educational administration to participate in seminars in these countries and undertake short attachments will be made available, so that in the shortest possible time the aspiration of having Caribbean School Leaving Examinations will be achieved. The record of secondary education in the Caribbean in recent years indicates that this goal can be achieved with the assistance of our friends in the Commonwealth.

THE SOUTH PACIFIC COMMISSION EDUCATIONAL TESTING PROGRAMME

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In common with all developing areas, most of the island territories of the Pacific are faced with financial problems that make universal education a difficult if not impossible goal to achieve at present. In many territories primary education is not compulsory, and in the majority only a limited number can be admitted to secondary schools. For obvious reasons, when only limited numbers are admitted at secondary level, the available resources must be concentrated on those who will contribute most in later years to the development of the territory. Generally speaking, this means those who are intelligent, conscientious, stable pupils for whom there is a good educational and vocational prognosis.

Pupils in academic classes in Pacific secondary schools normally sit metropolitan public examinations (e.g. the Overseas Cambridge Certificate or the New Zealand School Certificate) after three to five years of preparation.

Selection procedures for those proceeding to secondary level in most territories tend to concentrate on the results of academic attainment at upper primary level. Often these tests have not been well constructed, are not representative of the primary school syllabus, are weighted in favour of less important school subjects, and, most important of all, have not been successful in identifying those pupils best suited for further education. School records indicate a heavy drop-out and failure rate; pass rates at metropolitan examination level have been disappointing; and there have not been enough graduates at secondary, tertiary, professional and skilled vocational level to hasten the replacement of expatriates by local appointees at a rate which the optimum territorial development requires.

The crux of the problem, then, appears to be in the selection procedures. Expressions of dissatisfaction and concern resulted in the South Pacific Commission organising a Technical Meeting on Selection and Guidance at Goroka, New Guinea, in 1967. This meeting was attended by senior education officers responsible for selection procedures in Pacific territories. The whole problem was discussed in detail, under the guidance of two consultants skilled in testing and selection principles and practices. As a result of the Meeting, the South Pacific Commission appointed an education specialist who was given the responsibility to assist Pacific territories in the improvement of selection procedures.

In this connection, several basic problems must be faced. In the first place, there is the need to compensate for the unevenness of educational opportunity within each territory - for example the problem of the intelligent child, on some small island, who is culturally deprived and has probably had poor teachers, compared with the child form the administrative centre who may be less intelligent but who has had the advantage of a better cultural environment and better teachers. Secondly, there is the language problem, where the quality of teaching is again uneven, and when many children hear the metropolitan language (which is the language of secondary education)

spoken only in the school - and then it is often of poor quality and limited vocabulary. Thirdly, the length of secondary education must be taken into account. In some schools there is time for remedial work for disadvantaged children before they must face the metropolitan examination - for others the years at secondary school are too few to allow this.

After a careful review of the situation, the decision was made that selection should be based on two criteria - academic attainment in the basic subjects, and academic potential. For preference, both criteria should be in the form of standardised tests, and academic attainment should be based on understanding rather than on mechanical accuracy.

The administration of the selection tests also had to be considered. The Pacific is dotted with small inhabited islands, most of which have at least one school, and many of which have very poor communications. Social pressures weigh heavily on teachers to ensure that children pass examinations. In the important selection tests, therefore, it is necessary to have the tests administered by as few people as possible. Some of those concerned in testing are not trained personnel, and therefore the tests must be easily administered in standardised procedures that are not difficult to follow; and because these testers may be ashore on islands for only a few hours, they must be able to test comparatively large numbers at once. Because of the language problem, the tests of potential need to be non-verbal and as culture fair as possible. Simply administered standardised group tests were therefore indicated.

With these considerations in mind, a large number of existing tests of various kinds were surveyed. Many were found wanting for Pacific conditions. Others seemed more appropriate, were tried, and for various reasons - mainly lack of validity - were rejected. Finally, from experience gained, and from research, a battery of tests was constructed which seemed to cope with the requirements of the situation. The battery comprises the following:

(1) Tests of academic potential:

(a) A test of speed and accuracy

This test is the first in the battery. Results are not significant, but the item is retained as a "settling down" item for subjects, to enable them to overcome nervousness, to direct their attention to detail on the printed page, and to make them aware that time is an element in the test. (In later tests, concentration is on power, the time limit being adequate for most subjects to complete those items within their ability.) Test validity in pilot surveys was increased when this item was left in.

(b) Two reasoning tests based on symbolic material

These comprise series of numbers or letter in logical sequence, the subject being required to give the missing item in the series.

(c) A figure-grouping test

This is entirely non-verbal, and of this type of test, correlates best with academic success in the pilot surveys.

(d) A test of general ability

An adaptation of the Papua-New Guinea Reasoning Series.

(2) Tests of academic attainment

(e) A test of mathematical concepts

This test is based on understanding of the new approach to mathematics. It can be combined, where desired, with a mechanical accuracy test.

(f) A test of English

Still under revision, and based on the vocabulary and structures taught in the widely used Oral English syllabus produced by the SPC Language Specialist, Miss G. Tate.

(g) A test of reading and comprehension

Under construction. Will include word knowledge, speed of reading, general comprehension.

In the selection procedure the results of the tests, reduced to standard scores, may then be distributed on a scattergram, with the mark for academic performance on one axis, and the mark for academic potential on the other. The small number tested make this a feasible method in most territories. Selection procedures are then facilitated, and can be adjusted according to the educational system, and the number of places available in the secondary system. For example, territories with a short span of years before the metropolitan examination would select only those who score well on both criteria; while those with a longer span may include those with high potential and low performance on the basis that there is time for remedial work in the initial years at secondary school.

With these tests, it is recommended that teacher opinion be taken into account (especially in marginal cases) when making final selections. This should be as objective as possible, through the use of a checklist questionnaire which takes into account personality and social factors, attitudes towards study, conscientiousness etc..

The above tests have been used in pilot surveys in 1969. They are now being subjected to statistical checks, to be produced in final form for standardisation and validation in the immediate future. In addition to these tests, after experience with New Zealand Maori pupils and one group of Pacific Islanders, the Raven's Matrices Test is being investigated for use in the Pacific. Particular attention, on the basis of controlled research, is being given to the possibility of improved validity when the Coloured Matrices Test is administered as a practice item some days before the full Matrices

test is used as the test item. Initial results seem to indicate a higher validity with this procedure than with the administration of the full test alone.

The larger territories of the Pacific have developed their own testing services. The South Pacific Commission, for example, was able to draw on the experience of the Psychological Service of Papua-New Guinea; while in Fiji the new University of the South Pacific is directly involved in selection procedures at several levels of education. The South Pacific Commission service is directed mainly at assisting the smaller territories which cannot afford these specialist services, and have not adequate resources to cope with the problem internally. It is hoped to publish a full account of these investigations when final standardisations and validity have been established.

THE INTERNATIONAL BACCALAUREATE

A.D.C. Peterson
Director General
International Baccalaureate

The International Baccalaureate was designed as an examination validating pre-university courses for the benefit of those pupils in international schools whose education took place outside their own countries, because their parents' employment demanded it. This is a growing group of young people. The mobile community to which they belong now includes not only the diplomatists, but, in far greater numbers, the servants of U.N. agencies, overseas aid projects and international commerce.

Although this was the first purpose of the International Baccalaureate, interest in it has grown for two other reasons, because it provides a less nationally oriented curriculum for use in any type of school, and because it provides an opportunity for experiment in curriculum and examining methods. It is probably the last of these reasons which may make it particularly of interest to the present conference.

The designers of this examination were faced with two main problems: how to design a curriculum which combined general education with the opportunity for the pupil to begin the process of specialisation in the direction which most interested him, and how to design examinations which would stimulate good teaching, would provide adequate criteria of assessment for university selecters and which could be administered in any part of the world.

The answer which the International Baccalaureate Office proposes to the first problem is flexibility. To secure the diploma, which is provisionally recognised for matriculation in almost all universities of the Commonwealth, Europe and North America, the candidate must follow courses in six subjects, two languages, mathematics, one subject concerned with the study of man, one with experimental sciences, and a sixth subject at free choice. This is designed to ensure general education. The opportunity to specialise is provided by the fact that three of these subjects must be offered at a 'higher' level and three at a 'subsidiary' level. Thus one candidate might choose Physics, Mathematics and Chemistry as his higher level subjects, with English, French and World History as subsidiaries, while another might choose English, French and African History as higher level subjects, with Mathematics, Biology and Yoruba as subsidiaries.

In examining techniques the first problem to be solved was that of languages. Clearly in an international examination of this kind translation could play no part in language examinations.

The whole range of the examination is at present offered in English and French, but for an Arab student, for instance, studying in an international school where the language of instruction was English it would be manifestly unfair to set an examination in French which involved translating from French to English of vice-versa and therefore demanded knowledge not of one but of two 'foreign' languages. The International Baccalaureate language examinations are always carried out therefore in the language being examined and involve no translation. We have undertaken to examine in any language which the candidate chooses, provided that it has a written literature. In the 1972 examinations, for instance, we examined in 18 different languages, including Arabic, Burmese, Czech, Danish, Iranian, Korean and Rumanian, as well as the most commonly spoken languages.

In spite of this emphasis on literature, at least in the first language, I.B. examinations place more emphasis on command of the spoken language than most national systems. In the first language (often the mother tongue) 25% of the marks are awarded to the oral examination and in the second 40%. The wide dispersion of schools using this examination means that only the first language can be orally examined 'face to face' and the oral examination for the second language is recorded on tape. In the second language I.B. also makes use of an 'aural comprehension' test based on the playing of a tape and answers recorded on a 'quiz sheet'.

The written papers in the second language also include objective multiple choice tests. The advantage of such tests is two-fold. In the first place, they eliminate the subjectivity of the individual examiner and ensure equal treatment for all candidates. This is perhaps particularly important where the same examination is being used in widely different cultural backgrounds. Secondly a fifty item multiple choice test makes it possible to sample a much wider range of linguistic skills and of familiarity with speech patterns then an examination purely based on essay questions. It is mainly for this second reason of wider sampling that I.B. uses objective multiple choice questions, as part, not the whole, of the testing process in many other subjects, such as mathematics, the sciences and economics.

People have sometimes questioned whether it is worth the trouble and cost of devising multiple-choice questions for an examination which is still in its experimental stage and which even this year will only have between 400 and 500 candidates.

It is, of course, true that to devise the best possible multiple choice test, with all the careful scrutiny of every item, the pre-testing of items, the rejection of those which are either ambiguous or poor discriminators, is a very expensive process. When one is dealing with thousands of candidates this expense is offset by the fact that the responses can be marked by machine rather than by highly qualified, and therefore highly paid, examiners, but with our small number of candidates it may seem extravagant.

I.B. uses this method partly because ours is an experimental examination and we must experiment with the best methods even if, with our small numbers, they are at this stage uneconomic. But it is also true that objective testing, like many other scientific pursuits has bred its own purists. To reject a fifty item test because three of the items are faulty may please the 'experts' but it is not realistic. The remaining forty-seven items will still give a more objective assessment and sample the syllabus more effectively in certain areas than a purely essay type examination, and the 'injustice' to individual candidates arising from the three faulty items is far less than the injustice arising from the 'luck' or 'bad luck' of getting questions that suit the individual candidate in essay type papers. Even with limited resources therefore and less than perfect objective tests we believe that we are achieving a fairer assessment than we could by relying entirely on conventional essay type questions.

Just as in language examining the International Baccalaureate relies on a 'battery' of different tests, oral, aural, multiple choice and essay type, so throughout the examination we believe in employing a variety of examining methods to arrive at a global assessment. Thus in history examinations although the first two parts of the syllabus, world history and the history of a region, for instance Africa, America or Europe, is examined by conventional essay type questions, the third part, the study in depth of a strictly limited

historical issue, is assessed on a long essay of up to 6000 words written by the student during the last year of the course and based on his own 'research'. This particular part of the course has great pedagogic value and has proved very popular with students. It does, however, present particular problems of assessment, the first of which is that it is very difficult to be sure that the long essay is actually the work of the student who claims to have written it. Even at university level students have been known to buy doctoral theses and then submit them as their own work.

Because it is not entirely possible to eliminate this danger, the International Baccalaureate Office cannot give as much weight in the marking to the long essay as it would wish to, or as the majority of essays would deserve. Certain precautions, however, can be taken. Of these the most rigorous is the oral examination. An oral examiner who has read the essay can, in a viva voce examination, assess fairly accurately not only whether the essay is the student's own work, but also whether he really understands what he has written. One of the defects of much modern education is that students acquire a vocabulary of clichés and half understood generalising concepts. It is, for instance, quite difficult to tell whether a student who discusses social history in a written examination in terms of 'alienation' really understands the concept he is using, or has adopted, without understanding it, a fashionable jargon. A probing oral examination will soon determine which of these two cases the examiner is delaing with. Unfortunately, the I.B., being a world-wide examination, cannot send its oral examiners across the seven seas to every school in the project. We have been driven therefore to devise 'long distance' methods of oral examining. In history, for instance, since the examiner who reads the long essay cannot always visit the school and meet the candidates face to face, he poses three searching questions on each essay. These are presented to the candidate in his own school, under the same sort of conditions as an oral examination, and the candidate then tape-records his answers on a cassette which is sent back to the examiner. It is possible that this device might be of interest as a contribution to solving not so much the problem of long distance oral examination as that of harmonising standards. It is well known that oral examiners are even more subjective in their assessment of student competence than examiners of written essay type questions. Yet in the world of today, with all the media of electronic communication, oral competence is becoming increasingly important compared with written communication. The official who is clear, concise and balanced on the telephone is as valuable as used to be the official who wrote a clear, concise and balanced memorandum. Perhaps the use of cassette recordings as a method of moderating oral examiners' assessments may enable us to give more weight to oral competence in examinations and so promote its development in the schools.

Another area where the International Baccalaureate has been forced to experiment in examining techniques is in the assessment of practical laboratory work in the sciences. It has long been recognised that this is an important part of the science course but also that the formal practical examination, carried out by an external examiner on a single occasion, is a very unrealistic method of assessment. In the International Baccalaureate we recognise that the only person who can really assess the individual's practical competence in an experimental situation is the teacher who is in constant contact with him. The same, is, of course, true of all systems of 'continuous assessment'. I.B., therefore, entrusts a large part of the practical assessment to the teachers, but there is a need for some kind of external control. We are, therefore, experimenting with the use of film as a test of practical competence. The candidates are shown an experiment on a specially prepared film and are

equipped with a 'quiz-sheet'. At certain points the film stops and they are asked to write down their answers to certain questions designed to test whether they understand what is happening, can identify the apparatus used, explain its purpose and suggest the next step to be taken.

Finally, many national examining systems, realising that no single test administered on one oddasion can fairly assess the whole competence of the student, are seeking to introduce some element of continuous assessment, which, as we have seen, can only be the assessment of the teacher. In the I.B. system teachers are asked to grade their pupils themselves for each subject. Examiners award their own provisional grade purely on the basis of performance of the tests, but they are asked, having done so, to look at the teacher's grade and if there is a marked discrepancy to re-check their own grading. It is, perhaps, important to emphasize that this is not an 'averaging' of the examiner's and the teacher's grade but simply a way of alerting the examiner to the fact that he may be misinterpreting a student's performance.

Finally, since the examination as a whole is offered either in English or French, it is our practice, whatever the nationality of the chief examiner, to ensure that he has both an anglophone and a francophone senior assistant. The The examination, which I have described, is now very widely accepted as a basis for university matriculation throughout Europe and the Commonwealth - by all British, Canadian, Australian and New Zealand universities, for instance, and by many in Africa,and Asia. Its graduates are already attending 100 universities in different countries throughout the world. But it is still a flexible and experimental system which provides an opportunity for research and development in examining methods.

UNESCO'S ACTIVITIES IN THE FIELD OF EDUCATION

Paper presented by UNESCO

Part 1 - International comparability and equivalence of higher education diplomas and degrees

Originally the main objective of the Organization's first projects in this area was to facilitate the access of students with diplomas from foreign universities to institutions of higher education in other countries. Given the relatively small number of universities and the similarities in their structure and operation, Unesco had planned to establish a system of "equivalences" among the higher education diplomas being awarded at the time.

Over recent years, however, there have been quantitive as well as qualitative changes which led Unesco to revise its objectives and the guiding lines of its action in this field. The number of students wishing to register at universities outside their own country has increased so much as to make this problem a significant element in educational strategies. In the current academic year alone, more than one million students will attend institutions of higher education outside their home country. Among the factors which have contributed to this development are:

(1) the substantial increase in the number of institutions of higher education the world over;

(2) the rising awareness of each country's need for a system of higher education which meets its specific requirements and development objectives;

(3) the increasing diversification of training patterns called for by the scientific and technical revolution;

(4) the growing trend for students to leave their home communities to further their education, partly due to greater support for this purpose. For students from the developing nations, this "migration" is practically inevitable, as their countries are in urgent need of trained manpower insofar and as long as all the necessary facilities do not exist at the national level;

(5) Government's desire to utilize persons trained abroad rapidly and in an efficient, development-oriented manner.

These and other changes in systems of higher education throughout the world have necessitated the development of a new approach to the problem of the equivalence of degrees, and Unesco is now making available to Member States a variety of instruments in order to facilitate the comparison and recognition of studies and diplomas.

The main long-term objectives of the Organization's programme in this field are:

(1) to increase the international mobility of researchers, professors and students, with a view to a better utilization of training resources on a world scale;

(2) to facilitate access to the various stages of higher education for students from other national or foreign training centres; and

(3) to ease the re-absorption of persons trained abroad in their country of origin.

Unesco's programme in this area may be divided into four categories:

(1) Studies aiming to develop the theoretical foundations for the comparability of studies and diplomas. Papers already published or currently in preparation include:

(a) Comparability of degrees and diplomas in International Law (published in 1972 in English and French)

(b) Comparability of degrees and diplomas in Engineering Sciences (in preparation)

(c) Comparability of degrees and diplomas in Biological Sciences (in preparation)

(d) Comparability of degrees and diplomas in Mathematical Sciences

(e) International equivalences in access to higher education (published in 1971)

(2) Studies aiming to set down practical guidelines for the international recognition of diplomas, including

(a) A major study entitled Higher Studies. Tentative comparison of teaching and degree systems (published in French; English, Russian and Spanish versions in preparation). It comprises a country-by-country description of systems of university education, highlighting the main steps of education at this level, for every country with higher education facilities; and a glossary of the principal types of diplomas;

(b) Methods of establishing equivalences between degrees and diplomas (published in 1970 in English and French)

(c) A paper outlining practical procedures for the recognition of certificates and diplomas (in preparation)

(3) Activities promoting the development of bilateral, regional and international legal instruments

(a) The Unesco General Conference has decided to convene a diplomatic Conference with a view to the adoption of a Regional Agreement on International Recognition of Studies and Degrees in Higher Education in Latin America and the Caribbean. An

inter-governmental committee of experts will meet prior to the Conference to prepare the final draft of the Agreement on the basis of a draft submitted by the Unesco Secretariat;

(b) Similar instruments are being prepared for the Arab States, Africa, and the African and European States of the Mediterranean region;

(c) Unesco cooperates with international governmental and non-governmental organizations (including the Organization of African Unity) and encourages universities to meet with the academic and professional bodies concerned with a view to the conclusion of agreements or the modification of existing agreements in this area.

(4) Activities promoting the creation and development of national and regional mechanisms to ensure the implementation of policies adopted on this question, and, specifically to:

(a) establish national guidelines for the mobility of professors, researchers and students;

(b) coordinate the efforts undertaken to increase mobility on the national and regional levels;

(c) ensure the implementation of agreements in force; and

(d) grant recognition to particular studies and diplomas.

To this purpose, missions have been sent to several Member States, including Ethiopia and the Ivory Coast.

Part 2 - Other Activities

There has been no programme directly connected with the problem of examinations other than that related to the problems of equivalence. In fact, the Draft Medium-Term Outline Plan for 1973-1978 presented to the Unesco General Conference at its 17th Session in Paris in the autumn of 1972, went so far as to say, in connection with the programme related to reform of the organization of pre-primary, primary and secondary education:

> "In a perspective of life-long education, the conventional structures will, like the curricula, have to undergo changes which cannot be improvised. The key factor in the reorganization of the systems is the continuity of the education process throughout the whole period of the child's school attendance. We should therefore stop thinking in terms of "levels" (pre-primary, primary and secondary) with all the obstacles (examinations, competitive and otherwise) they incorporate for the purpose of making a more or less just and efficient selection, and substitute the notion of continuous education - 8 to 10 years in the same school for example - which in any case is more in keeping with the democratization of education".

Nonetheless, there have been a number of projects financed by the United Nations Development Programme by which Unesco has provided assistance to various Member States in the reform of their examinations (e.g. in Ethiopia, Jordan and Trinidad). Unesco has also provided assistance under its Participation Programme in activities of Member States (either fellowships or expert consultant services) on the problems of re-organizing examination services (Afghanistan and Syria). There have been also projects whose main aim is the reform of curricula or the reform of a guidance system, in which activities specifically directed towards the study and reform of particular examinations have been an important element (Cameroon, India and Ivory Coast).

In fact, it is difficult to work on problems of curriculum reform in the present state of education in most countries without seriously studying the problems of examinations. The contents and manner in which both the external and internal examinations are conceived and administered have a strong influence on the curriculum. The Unesco position taken in this matter has been guided by the conclusions of the Expert Meeting on Curriculum of General Education in Moscow, January 1968. The experts recommended that Member States consider evaluation as an integral part of the curriculum; a bad system of examinations has a pernicious influence on the best designed curricula and could even compromise carrying out the most important objectives of education. A well conceived system of curriculum evaluation serves to maintain and even to improve educational standards. A system of evaluation should be organized and carried out in such a way that it serves as a means of measurement both of pupil progress and of the acceptability of the curricula (para 88 of the Report).

Following this indicated line of action, the Unesco programme has included a series of activities related to the training of curriculum officers in the techniques of curriculum evaluation. The first seminar organized, which was planned by Unesco but carried out by the International Association for the Evaluation of Educational Achievement, was the International Seminar for Advanced Training in Curriculum Development and Innovation (Granna, Sweden, July-August 1971). One of the main elements of the training provided was evaluation methods. Teams from many countries took part (from Africa, teams from Ethiopia, Ghana, Kenya, Nigeria and Zambia). Similar training seminars are to be carried out under the programme approved for 1973-1974 by organizing regional workshops or seminars on techniques for the evaluation of curricula (one in Latin America and one in Asia in 1973, one in French-speaking Africa in 1974).

Unesco has prepared no studies specifically on the problems of examinations. However, a number of publications have provided incidentally some information related to examinations, e.g. the Asian Study on Curriculum prepared under the Unesco-NIER Regional Programme for Educational Research in Asia which made an intensive study of curriculum development in elementary education in the Asian countries. One of the aspects studied was pupil evaluation and in the two volumes of the publication (Volume 2 and Volume 3) devoted to the situation in each of the countries, one will find detailed information on type of examinations, both external and internal, existing in primary and secondary education.

The most recent publication put out by Unesco which contains definite recommendations concerning examinations is Learning to Be

(Unesco, Paris 1972, Harrap, London, 1972). The International Commission on the Development of Education, of which this is the report, studied examinations in the light of selection problems and enunciated the following Principle and Recommendation:

"Principle

> Access to different types of education and professional employment should depend only on each individual's knowledge, capacities and aptitudes, and should not be a consequence of ranking knowledge acquired in school above or below experience gained during the practice of a profession or in private studies".

"Recommendation

> As educational systems become more diversified and as possibilities for entry, exit and re-entry increase, obtaining university degrees and diplomas should become less and less closely linked to completing a predetermined course of study. Examinations should serve essentially as a means of comparing skills acquired under varying conditions by individuals of different origins, a mark not of a conclusion but of a starting-point, helping each individual to assess the effectiveness of his own study methods. Evaluation procedures should measure an individual's progress as much as the extent to which he conforms to externally fixed standards".

RESEARCH STUDIES AND REPORTS ON EXAMINATIONS

Summary of Papers

W.B. Elley: Informal Tests for Classroom Use, emphasizes the need for the school teacher to make his classroom tests as reliable and valid as possible. To do so he must state the purpose of his test, state the objectives of his lessons and his examination and then construct questions tailored to measure these objectives. A variety of question types are listed and some hints are given for constructing improved examinations. Post-examination item analysis is recommended in the pursuit of better assessments.

L.S. Skurnik: Item Banking is put forward as a flexible, economic procedure for assessing the achievement of students in specified subject areas. An item bank is a library of examination questions or items which are found through both expert judgement and experimental evidence to be effective for measuring proficiency on a common scale of achievement although different curriculum objectives have been pursued toward that end. An item bank, it is argued, holds promise as a useful means for expediting curriculum reform, can contribute to better teaching, better examining and, by extension, better services to the community for whom the benefits of education are ultimately intended.

P.J. Hitchman: Examining Spoken English, reviews the problems associated with examining spoken language and describes how better standardization can be obtained among examiners and a more suitable form of examination developed. The central target is to assess what people actually do in the use of language and the newer tests of language include the assessment of reading, conversation, group discussion skills and public speaking abilities. Problems of reliability and validity are in need of research to ensure both accuracy and truthfulness of the examination results.

R.H. Dave and Y.B. Patwardhan: Improving Practical Examinations in Science Subjects, considers many of the shortcomings of practical examinations arising from a poor sampling of prectical work skills, the absence of reliable criteria of assessment and a lack of comparability between exercises as well as examiners. An improved procedure is recommended whereby practical skill is specified in terms of both the process and product of performance. Detailed behaviours are listed and it is suggested that both reliability and validity will be improved by: increasing the number of exercises used, making them more objective, improving the sampling of both abilities and content, and improving both the scoring procedures and the reporting procedures. The encouraging results of a pilot project are described and a number of recommendations are made to improve the effects of science education.

L.D. Mackay: A Study of Optional Questions in Examinations, reveals a number of disturbing results that arise when candidates are offered a choice of questions in an examination. The research reported that candidates can lose 3-10 per cent of marks by selecting a different set of questions to answer from those of their peers of equal ability. Markers apply different standards to different questions and 30 per cent of marks can be lost through a poor choice of questions and an unlucky draw of markers. Less able students tend to attempt the more difficult questions and there is a considerable difference in reliability with which optional questions are marked. Further work is in progress.

K.E. Sinclair: The Influence of Anxiety on Several Measures of Classroom Performance, shows that under experimental conditions anxiety is observed to interfere with factual recall but not with reasoning tasks in an examination. Open-book examinations are recommended where reasoning can be most effectively measured and the effects of anxiety can be minimized. Low anxiety students are found to profit from some tension-producing conditions but the more highly anxious student is found to suffer a reduction in observed performance.

R.E. Traub and H.A. Elliot: Development of the Canadian Scholastic Aptitude Test, describes the development and initial use of the CSAT and discusses briefly its purpose, from and results. The CSAT consists of verbal and mathematical problems and was found to be highly reliable. A parallel test of ability is being developed for Francophone students and plans were underway for equating the two tests with each other as well as with the American SAT.

Ng Fook Kah: The Development of Examination Techniques for Technical Subjects, reports the aims and objectives of trade testing in Singapore schools. With an increasing interest and participation in technical education in the secondary schools, a systematic programme has been developed for specifying both education and examination objectives as well as criteria of performance which will characterize desired, objective levels of achievement.

A.E.G. Pilliner: Testing with Educationally Disadvantaged Children, reveals the difficulties and dubious success in the development of so-called culture-free or culture-fair tests. He argues that efforts would be better devoted to the development of better methods of teaching and testing in language as the most effective way of reducing educational disadvantage. There are a large variety of human talents which may be developed and assessed, aside from those which may be more or less common to western cultures, and educators and examiners might pay due regard to them.

G.J. Matys: Tests and Measurement Procedures, Review and Evaluation, takes the reader on an excursion through the various functions and uses to which tests and examinations are put. He shows how education and the devices used to assess achievement are intimately related and argues that the evaluation function is too important to be postponed until a course of study has been completed. A wide variety of measurement procedures are recommended for use.

S.M.S. Chari: Public Examinations and the Curriculum, discusses the role of examinations in the education system in India and urges the integration of curriculum objectives with examination objectives. The need for continual adaptation of both the school experiences of the pupil and the assessment system used to measure proficiency in learning is affirmed and it is emphasized that the last word on reform of education and examinations has not yet been uttered.

INFORMAL TESTS FOR CLASSROOM USE

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WHY TEST?

In the course of his career, every teacher will have occasion to prepare, administer and mark hundreds of tests of his pupils' attainment. Sometimes these tests will consist of carefully selected formal written exercises with a rigid time limit and an elaborate marking system; sometimes they will be spontaneously constructed, orally presented and evaluated only superficially. But all will have these characteristics which distinguish them from external examinations and standardized tests:

(i) Classroom tests are prepared by the teacher or headmaster for local rather than national use. They are usually prepared at short notice, without the benefit of special expertise, panel review, or pretesting of questions.

(ii) Classroom tests are usually designed to evaluate the pupils' mastery of short units of work recently studied, or objectives which are specific to a school, a class, or a lesson. A teacher may prepare a short test on multiplication and division with decimals, or the causes of World War II, or a list of irregular French verbs. By contrast, an external examination usually evaluates the fruits of a year's study - or more, while a standardized test normally samples basic objectives which are developed over an extended period of time, and are not dependent on the teaching of a particular course.

However sophisticated his test preparation procedures, it should be apparent to all that a teacher requires the results of classroom tests to make decisions about his teaching:- whether to proceed or to back track, whether to change a teaching method, or to introduce a new topic. Judgements have to be made about classification and selection of pupils, advice must be offered about course changes and vocational plans, suitable materials and approaches must be found for children at all levels of ability, pupils must be identified for special treatment. Whether a teacher's decisions are required for groups or for particular individuals, they are more likely to be sound if they are based on accurate information about the abilities and attainments of his pupils. If this information is to be helpful, it should be obtained from tests which are both reliable and valid. Tests which are too easy or difficult, tests which are too short or too long, tests which sample only part of the course, or which weight certain parts too heavily, tests which are ambiguous in their directions, or which leave too much to chance, tests which cannot be marked with reasonable objectivity - such tests may mislead both teacher and pupil, confirm erroneously-held prejudices, and occasionally lead to injustices with far-reaching effects. How can teachers prepare classroom tests which will produce results in which they can place confidence? What test construction methods are likely to produce tests of adequate reliability and validity? First we must examine these criteria of a good test. What does it mean to say that a test is reliable and valid?

RELIABILITY

Tests are reliable if they produce consistent results, if they produce similar marks on different occasions. If a pupil gains 100% in a foreign language dictation test today, and only 50% tomorrow, then the results are not consistent, the tests are not sufficiently reliable to base judgements on. If a pupil is placed first in his class in a test of multiplication and division of decimals on one occasion and is 20th in a subsequent test of the same skills, we can conclude that the tests are not reliable indicators of his ability.

To be reliable a test must normally be long enough to minimize the effects of chance factors in the content and skills included in the test. With a short test, a pupil may be lucky, because he happened to know or guess correctly the few questions that were asked, whereas he knew very little about the areas untouched by the test. A standardized test of reading, mathematics or language, normally requires at least 40 sound objective-marked questions to reach a satisfactory level of reliability. To make decisions about individual pupils, a teacher-made test will probably require more questions than this. For judgements about groups, a teacher may get by with fewer. Just how long a particular test should be depends on the type of material tested, the amount of supplementary information available, and the importance of the decisions being made. Thus a test of a highly specific skill, such as arithmetical computation, or typing, may produce reliable results within ten minutes. If however, we wish to examine a pupil's grasp of mathematical relationships, or his understanding of a period of history and to make decisions about future schooling on the basis of the results, we may wish to extend the test over two hours to gain maximum reliability. For such skills as essay-writing ability, or oral expression, it is commonly found that pupils vary so much in their performance from day to day that the only way to gain adequate reliability is to test the pupils on several topics (over several occasions), and to combine the marks given by two or three independent markers.

Other requirements of a reliable test are clear, precise directions and reasonable time limits. The questions should be unambiguous, neither too easy nor too difficult; they should discriminate well between good and poor pupils, and they should be capable of reasonably objective scoring.

VALIDITY

A good test must be valid. This means that, in addition to measuring a pupil's attainments reliably, it should be relevant to the needs of the tester. It should cover the unit or course adequately, sampling each content area and skill in appropriate proportions. If a teacher knows precisely what his objectives are, he can usually tell, by analysing the questions of a test, whether they conform closely to the objectives he has adopted i.e. whether the test is valid for his purposes.

To illustrate, a 100-item test of mathematical computation may be highly reliable, and yet be quite invalid for measuring achievement in a course of modern mathematics which emphasizes concepts, relationships and reasoning. The objectives of the test do not match the teaching objectives. Again, a test of geography which focusses on isolated details about populations, areas, climate, exports, capital cities and the like, would produce irrelevant results for a teacher who stressed broad concepts, generalized skills and underlying relationships. A valid test of such

objectives may require novel or fictitious situations on which to base questions so that a pupil can demonstrate that he has attained these objectives, regardless of the particular factual details he has acquired.

To ensure maximum validity for his tests, then, it is important for a teacher to spell out, as clearly as possible, precisely what his objectives are, and to build his questions around these, in the appropriate proportions. Tests which develop without such planning often degenerate into factual quizzes of the low-level, isolated, easily testable fragments of the course.

DEVELOPING THE TEST

(i) Once a teacher has decided on the purpose for his test, he should consider the various objectives he has in mind, and how he might best classify them. For a content-oriented course, such as science or history, he might first divide the course into the main content areas, and ensure that each receives a fair ratio of questions. A general science course may be classified into three main areas - say chemistry, physics and biology. A more specific classification, for a biology course, might be living organisms, life processes, conservation, heredity and reproduction, and evolution. In addition a teacher should ensure that questions test different levels of understanding. Some tests concentrate on examining for recall of specific information, some for understanding of important ideas, some for application to new situations, and so on. In a science test, a useful classification system for the objectives might be
   (a) Knowledge of facts and conventions
   (b) Understanding of concepts and principles
   (c) Ability to apply the scientific method to new problems
   (d) Knowledge of industrial applications.

   In language subjects the content areas are less easily defined and it may be more appropriate to classify the objectives of the course according to the skills to be tested - reading, writing, translation, dictation, etc.

(ii) Once objectives are classified, a blueprint or table of specifications can be drawn up which sets out the content areas and the objectives, and allows them to be weighted on some rational basis, before the test questions are prepared. For maximum validity, a test will normally weight most heavily those topics or objectives which have been given most emphasis in the course or unit taught. But all areas should be tested where possible.

An example of a fictitious test blueprint is set out below.

Sample Blueprint for a Mathematics Examination

Objectives	Nos.& Numerals	Measurement	Fractions	Geometry	Total
Knowledge of terms, facts	10	5	5	5	25
Understanding of concepts	10	5	5	10	30
Routine calculations ..	5	5	5	0	15
Application to new problems ..	15	5	5	5	30
Total emphasis ..	40	20	20	20	100

(iii) The third stage in developing the test requires a decision on the form of the questions to be asked. There is no question type ideally suited for all purposes. For instance, short-answer questions which require pupils to fill in the blank or complete a sentence are useful for covering a wide range of facts in a short time. Outside of mathematical subjects they are less useful for estimating depth of understanding without introducing some ambiguity in the question or subjectivity in the marking. Multiple-choice questions are widely used in standardized tests and external examinations because they can sample the whole course widely and efficiently, and test higher objectives, but such questions are not easy for classroom teachers to prepare and they do not examine the ability of the pupil to generate and organize his own ideas. Matching questions are best suited to measuring knowledge of homogeneous sets of facts or conventions. Pupils may be asked to match books with their authors, chemical compounds with formulae, countries with exports, etc. They should not be used however, unless the contents of each list form a homogeneous group, so that each item on one list is a plausible match for each item in the other list. True-false questions may have some value in classroom tests since they enable the teacher to sample widely in a short time, but they are frequently superficial, they are unsuitable if the truth of each statement is not absolute, and they are prone to be unreliable due to guessing on the part of the pupils. They can be modified of course, by requiring pupils to correct false statements, or to classify a statement as "sometimes true", depending on other factors. Perhaps their greatest value is as a starting point for classroom discussion. Essay questions compensate for some of the deficiencies of other question types in that they do require the pupil to express his own ideas, and to demonstrate fluency and organization. However, they cannot measure as many aspects of a course as do short-answer questions, and they are difficult to mark reliably.

Before deciding on the kinds of questions to use then, a teacher should consider the various pros and cons outlined above, in relation to his own expertise in item-writing, the number of pupils involved, the time available for setting and marking, the degree of reliability required and the kinds of decisions to be made with the results.

(iv) Preparing the questions to fit the blueprint is the fourth stage. Here there are many pitfalls, and no short-cuts to success. So often when questions are hurriedly prepared they turn out to be ambiguous, too easy, too difficult, or unsuitable for some other reason. The following checklist may alert teachers to the kinds of weaknesses likely to be found in their questions.

(a) - General

- Keep questions brief, simple and free from complex verbal instructions, double negatives etc.

- Test only important facts and skills; avoid trivia, catch questions, and irrelevant material.

(b) Completion Questions

- Use a single blank in each question.

- Place the blanks near the end of the sentence.

- Ensure that there are a finite number of correct answers.

- Make all blanks approximately the same length.

(c) Multiple-Choice Questions:

- Use only plausible distractors.

- Ensure that there is only one acceptable answer.

- Avoid the stereotyped language of textbooks in the correct answer.

- Beware of grammatical clues and verbal associations which help the uninformed.

- Make the correct option the same length as the distracting option.

- Avoid overlap in the options.

- Avoid any discernible pattern in the correct answers.

(d) Matching Questions:

- Clarify the instructions so that pupils know the basis for matching.
- Use only homogeneous sets of items in each list.
- Make an unequal number of items in each list.
- Use fewer than ten items in each list.

(e) Essay Questions:

- Ensure that the question as it is asked cannot be more adequately measured by another approach.
- Structure the question in such a way that pupils know what to include, what to omit, and how much to write.
- Ask several short questions of different types rather than one long question.
- Avoid giving pupils a choice of questions unless it is absolutely necessary.
- Prepare a model answer before the test, but be prepared to revise it in the light of pupils' answers.

These principles may not always be applicable or even justifiable, but they do point to frequent sources of weaknesses in classroom tests. Such weaknesses can often be overcome by working with a colleague or panel of teachers, by requiring somebody to answer the questions while the test is being prepared, or by pre-testing the questions on a sample of pupils similar in ability to those for whom the test is designed.

There are no perfect paper-and-pencil tests. All are somewhat artificial; all are subject to pupil fluctuation in concentration; all provide only a sample of pupil knowledge; all therefore are to some extent unreliable. A close observance of the principles outlined above, however, should help teachers to polish up their testing procedures. Further improvements can be effected by studying textbooks on the subject, by examining well-constructed standardized tests, by item analyzing one's own tests, and by discussing one's efforts with other teachers.

ITEM BANKING

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An item bank is a library of examination questions or items which are found through both expert judgment and experimental evidence to be effective for measuring achievement at specified levels of proficiency. An item bank in any one subject would enable examination boards to overcome a number of difficulties in the assessment of the results of their schools. An item bank can serve its patrons by:

(a) storing a collection of high quality questions from which examiners can draw materials for individualized assessment, continuous assessment or terminal evaluation;

(b) supplying evidence (through item and test statistics) upon which standards of achievement can be established and maintained between schools in one country and even between schools in different countries which issue certificates of achievement that are intended to have international acceptance;

(c) promoting curriculum reform, since the patrons are required to carefully review their course objectives and specify, through an examination blueprint, the abilities they wish to develop and assess and the items they judge to be relevant to their course;

(d) trial testing examination materials among a wider field of candidates than is generally available to existing examination boards, giving greater stability and meaning to the items and their operating characteristics;

(e) scoring examinations, storing results, supplying computor processing services and other support to examiners which most boards cannot easily afford on an individual basis;

(f) accumulate a wealth of evidence on the reliability and validity of examinations, on the efficiency and effectiveness of various teaching and examining procedures, and on the associated characteristics of candidates and teachers.

II. BACKGROUND

The idea of developing item banks in one or more subjects is not entirely new, although it has only been explored during the past decade. A pilot study of the full process has been investigated in England through the development of an item bank in mathematics (Wood and Skurnik, 1969). Scriven (1967) discussed the possibilities offered by item banking. Education Testing Service has been storing, retrieving and printing tests through the use of a computor since 1965 (Rock, Epstein and Melton, 1967; Epstein, 1968) and the U.S. Navy has been employing computors to control both the teaching and the examining process in certain technical programs (Katzenmeyer and Swanson, 1968).

The state of Oregon has embarked upon building a Computor-Based Test Development Centre (COMBAT) which aims to produce a number of item banking services (Gage, 1968).

> "The purpose of COMBAT is to establish a computor centre responsive to educator demand in which a large pool of items designed to measure how far students with particular characteristics achieve educational objectives in all curricular areas and grade levels can be stored. Thus, once the information is stored, a teacher will only have to inform the computor of the instructional objectives and the characteristics of the students or student to be tested and an appropriate educational device will be prepared. Hopefully educators will have on demand the best of two testing worlds, the tests will not be subject to the technical weaknesses of most teacher-made tests nor to the content and normative weaknesses of standardized tests. They will be of professional technical quality and based on local objectives and local student characteristics. They might also contain items in a form not now available in any test."

Item banking, although relatively new, is not untried. It holds promise for pooling resources and encouraging progress in examining and education at a level which is seldom considered possible through most other educational innovations. However, all of the work to date has been narrowly focused. The beneficiaries of the systems developed have been limited to some geographical areas, to the subjects chosen for banking such as U.S. Navy technical training or secondary school mathematics in the U.K., and have a limited effect upon national or international development. Item banks in GCE subjects can hasten the development of secondary education and examinations, improve the quality of training offered and maximize the efficiency of examination boards.

III. FEASIBILITY

What types of problems are likely to be encountered in establishing and operating an item bank? Will teachers/examiners be able to produce useful blueprints? Will a sufficient number of high quality items be obtainable? How technically efficient can the bank items be? Can a bank accommodate international differences in educational programs and examinations?

1. Planning the Bank

The work of Wood and Skurnik (1969) and others has shown that item banking is highly feasible if adequate planning is carried out beforehand. One of the first priorities is to meet with representatives of the profession for whom the bank is being designed, to explain what the program is all about and to solicit suggestions for implementation. When sufficient people have been enlisted to cooperate and funds have been obtained from independent sources then working parties can be organized to represent specialist areas where advice and assistance will be required in the development of blueprints and item specifications, item writing and editing and moderation of examination results. The work of these representatives will lead to the production of the bank "deposits".

Technical measurement specialists will need to be engaged in work on both the hardware and software problems of system design to make the bank ready for "deposits, withdrawals and preparation of financial statements."

Meetings should also be convened with established examining boards to work out mutually convenient procedures for the pre-testing of items and administration of examinations. Since an item bank functions as a clearing house of information and not usually as an examining body, the formal registration of candidates, administration of papers, distribution of results, etc. would remain in the hands of the existing bodies, although efforts may be made to simplify and rationalize procedures and forms so that the system operates smoothly. The bank could be able to supply questions, mark papers, help examiners to produce blueprints and content specifications as well as interpret statistics produced by the examinations. The statistics may help to decide questions about pass/fail criteria, accuracy of assessment, etc. and other related problems.

2. Preparing Blueprints

Although the task of specifying subject details and specific terminal behaviours which constitute an examination blueprint is a difficult one, it is not beyond the competence of many teachers. Experience has shown that teachers have problems articulating their own blueprints, but they would have minimum difficulty making choices from a comprehensive blueprint. This blueprint would approximate an exhaustive map of behaviours and subject matter associated with the area of interest and if presented in the form of a menu card, it would allow patrons to check-off their choices without having to labour through the chore of initial preparation of a basic blueprint. The response patterns of the examiners who complete these check-blueprints would effectively determine the type and quantity of items required for the bank. Since examining boards would always be free to add and items, questions or other assessment procedures to any examina assembled with bank material, there should be no fear that the bank will exert an inhibiting influence upon those who are currently engaged in teaching and examining.

3. Producing Items

Existing resources of test and examination items would undoubtedly be of help in the early stages of development of an item bank. However, if a first-class library is to be assembled then serious efforts will need to be devoted to the construction of many new items which are carefully matched to the terminal behaviours expected by the teachers. Extensive workshops will need to be held since:

> "Item writing is an art. It requires an uncommon combination of special abilities. It is mastered only through extensive and critically supervised practice. It demands and tends to develop high standards of quality and a sense of pride in craftmanship." (Ebel, 1951).

4. Pre-testing Items

The pre-testing of items which are general or common to most syllabuses are readily field tested as long as due regard is given to the basic canons of sampling. Items which are relatively uncommon, perhaps measuring esoteric knowledge which is taught in only a few places, will be a bit more difficult to evaluate, since it is essential that an adequate sample be obtained for all tryouts. It is however possible to 'deposit' items in the bank which are so rare that perhaps only one school or center is interested in using them. These items can be embedded in the body of the examination of the one school needing them, but not scored in the first cycle. Subsequent

item analysis and calibration of achievement against other items in this examination or items which may be used as bench marks will help to reveal the quality of even the most rare questions or items in an examination.

5. Technical efficiency of the items

Although the published literature has clearly demonstrated that individual examination items are notoriously unreliable as isolated measures of achievement, it also shows that a carefully chosen set of items, in concert as an examination, can yield very precise estimates of achievement. Even a test of very modest length can produce an accurate assessment of the achievements of groups of candidates although there may have been large differences in syllabus, method of study and methods of assessment. Although it will be essential to evaluate item operating efficiency as parts of a coherent examination, the final aim of the exercise will be to calibrate items against independent criteria which define the terminal behaviours expected from a course of study. These items statistics can be a key to international comparability of standards and are of fundamental importance to the interpretation of the meaning of the test scores.

6. Technical efficiency of bank examinations

Perhaps the most useful results to come out of the few item banking studies that have been conducted is the observation that custom-built tests are at least as efficient as the usual examinations and are often better. They can provide a more comprehensive coverage of a subject in a limited period of examination time, provide very high reliability and validity (when correlated against the marks on traditional but parallel examinations) and, perhaps most importantly, yield additional information about the absolute accomplishments of the candidate as well as the rank order among the candidates entered.

7. International problems

Despite differences in culture, custom and language, tests can be readily translated from one language to another with only a limited change in content. The vital factors are the degree of care taken in the translation and retranslation, and careful review by experts in the subject who are conversant in the two languages, and the accuracy of checks carried out to verify that all the alternatives as well as the questions are relevant to the syllabus.

IV. SUMMARY

An item bank is a flexible, economic procedure for assessing the achievement of students in specified subject areas. It also holds promise as a useful means for expediting curriculum reform. It can serve to certify accomplishments of greater importance than the operation of a motor vehicle, which is virtually the only skill that has a universally recognized licence. It can contribute to better teaching, better examining, and by extension, better services to the community for whom the benefits of education are ultimately intended.

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EXAMINING SPOKEN ENGLISH

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For centuries the teaching of English in the United Kingdom has been very largely confined to teaching children to write their language and to study its literature from the printed text. Learning to speak their own language has been largely left to chance - the chance of social background. A middle-class house has provided much richer linguistic opportunities than a working-class environment. This has tended to a rigid stratification of class structure, with educational opportunity and career achievement unfairly tilted in favour of the English middle-class.

Now there is a belated recognition of the importance of spoken English in the world of today; and for the first time in our educational history its backing is everywhere being taken seriously.

To test a subject in our schools is to give it importance and to fix its status. Written examinations are part of our educational tradition. Now, in the last few years, we have the novelty of tests in spoken English for our school children. This is giving status to the oral language in our schools.

Official tests are in operation at three levels: General Certificate of Education Advanced Level (within the area of the Joint Matriculation Board), Ordinary Level (organised by the London University School Examinations Department), and at the level of the Certificate of Secondary Education. (C.S.E. examinations are taken in most schools in England that do not take G.C.E. O Level examinations). The J.M.B. 'A' level test in Spoken English can be taken only by those candidates taking General Studies, the London '0' level test by those taking the English Language paper; in neither case is it compulsory. Candidates taking C.S.E. English must take a test in oral English unless excused by reason of speech defect.*

The aims of these various oral examinations can be summed up in the words "communicate, communication". This is implicit in the syllabuses of the 'A' and '0' level authorities and is made explicit in those of most of the 13 C.S.E. boards. Probably all intend "Communication" to be understood as two-way. The North Regional Board (covering schools in the northeast of England) states: "The English Language examination will attempt to ascertain the candidate's ability (i) to communicate clearly with other people and (ii) to understand other people when they attempt to communicate with him, both orally and in writing".

The most important use of speech deliberately made audible is as a means of communication between human beings. The aims of the various

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* In 1969 approximately 2,000 candidates took the 'A' level test in spoken English, and approximately 20,000 the '0' level test. It is not possible to give the total for the C.S.E. test in spoken English, but in one region alone - the Metropolitan - the figure was 11,000.

examinations clearly recognise this; and their forms of examination are coming to be - as they should - a reflection of these aims.

At first the examining boards played safe. They had to their hand a well-tried test-item in reading aloud. The reading by pupil to class has been a popular form of educational activity in schools from ancient times, and teachers have always felt impelled at intervals to give a mark for attainment. From the inception of the teacher-training system in the 1840s students had been tested in prose reading by Her Majesty's Inspectors on their annual visitations and marks had been awarded. Reading aloud is still a popular classroom activity.

It is thus easy to understand why the Examining Boards included a test of prose reading in their new spoken English examinations. Reading aloud is a good test of a candidate's ability to interpret and present the ideas and words of others. What was also needed was a test of his ability to present his own ideas and words. Thus Conversation came to be chosen as the second item of a ten-minute test. The J.M.B. developed these forms of tests at 'A' level in the early 1950s, the University of Durham Examinations Board used them for several years until its demise in 1964, London has used them for its 'O' level examinations since their inception in 1964, and they are by far the most popular forms of spoken English test with the new C.S.E. authorities, which instituted examinations in 1965 and 1966.

A test composed of these two items has certain advantages. They are nicely balanced with a contrast of oral interpretation and oral composition. They make for a pleasant variety, and together they test a candidate's ability to communicate ideas and feelings to others. They are easy to administer and need not take more than ten to twelve minutes per candidate. Research has shown that in the hands of competent examiners they have a reasonable statistical validity and reliability.

These tests in Reading and Conversation are, in general, private affairs between the single candidate and the examiner, with no other people present. The Boards have been experimenting for some time with examinations in a group situation and, at the same time, with items other than Reading and Conversation. Conversation is, in its nature, talk between two persons. If three or more take part its form and nature are subtly changed; it becomes Discussion. For the last two years Conversation in the J.M.B. tests has been a three-handed affair - it has become a discussion (on any subject chosen by the candidates) involving two candidates and the examiner. The London Board has also been experimenting and proposes to introduce in 1971 (in addition to its single-candidate Conversation) a Discussion involving three candidates and an examiner. In these two examinations all candidates in any one discussion are being tested. In the 13 regional C.S.E. areas Group Discussion is a compulsory part of the oral English test in two areas and optional in five (which means that candidates can take some other option if they wish). Of the seven syllabuses involved two have group discussion in which all candidates are being tested; in the others each candidate is tested separately, talking with the group.

The London Board is retaining Reading in its new 1971 examination, but as a group activity, each candidate being required to read aloud to a group comprised of the examiner and other candidates. In the J.M.B. tests Reading is now also a group activity, but optional to the giving of a Talk. A new feature is that the candidate sits after his reading and answers questions from members of the group on any matter arising. Reading aloud

is still a very important test item in the C.S.E. examinations, appearing in 12 of the 13 syllabuses, sometimes compulsory, sometimes optional; sometimes a private affair between candidate and examiner, sometimes in the presence of a group of other candidates. In three regional areas the reading tests are conducted with the candidate sitting at a table close to the examiner, in others he stands and speaks at a distance; in one or two areas sitting or standing is at the choice of the candidate. (The South East region also tape-records its candidates for purposes of moderation.)

The size of group for the 'A' level J.M.B. tests is six or seven, for the 'O' level London three. This means that each member of a group spends much more time in his examination than if he were tested solo - in the former test one and a half hours (instead of 12-15 minutes), in the latter half an hour (instead of ten minutes). This is excellent for the generation of a group rapport. The size of the C.S.E. groups varies. In the Metropolitan region Group Test the size is twelve. (This test is unique. The candidate introduces the passage to the other eleven in the group, answers questions on it, and then reads it to the group a second time, two marks being given, one for either reading, and one for the quality of his answers.)

The last important development is the institution of the Talk as a test-item. In the J.M.B. tests it is optional to Reading and is delivered to an audience of six or seven (the rest of the group and the examiner). Questions and answers from the candidate follow. The candidate is handed a printed card containing three topics, from which he chooses one. He is allowed a few minutes to prepare his talk and five minutes to deliver it. He can speak from notes. His audience then questions him on matters arising. The Talk is a compulsory element in the C.S.E. test in four regions and optional in four. Where it is compulsory the syllabus states that the candidate will talk on a topic of his own choice. In all areas but one the talk is delivered to an audience. In five of the eight areas, Question and Answer form part of the test.

Thus the tests now in existence comprise Reading, Conversation, Group Discussion, the Talk to an audience. We have moved from the private to the group situation. Tests are coming to be more realistically based; that is to say, they are concerned more with what people actually do in real life situations - they talk to each other singly or in groups, they lead a discussion (or are led), and they stand up and address an audience.

The tests in spoken English most usually taken by candidates for whom English is not the mother-tongue are those for the Cambridge Proficiency Certificates - comprising Prose Reading and Conversation with the examiner. Among the speech elements the examiner is concerned with in those tests are those that help him to answer the very important question - how English does this candidate sound? They are his pronunciation (his use of vowels and consonants), his intonation (or tune-patterns), his articulation, and, perhaps most important of all, his pattern of stressing, a complicated alternation of stressed and unstressed syllables. These are the major elements in the English speech rhythm. In Conversation the examiner is also looking for the use of an acceptable vocabulary, acceptable grammar, word-order and idiom.

Now the English candidate, however poor his speaking in other respects, at least sounds English - he can't help it. So the examiner in the tests in England under discussion is not primarily listening for the way

these speech elements are used. In Reading the examiner is looking for the candidate's ability to interpret the page before him, to communicate to the audience the author's meaning and mood. He is asking the candidate to exercise his imagination as well as his communication skills of voice and speech. In the other test elements - conversation, discussion, the talk - the examiner is considering the candidate's ability to use the English Language efficiently in face-to-face communication - that is, to make a statement clearly, to develop a theme, to rebut an argument, to inform, to persuade. He is, of course, also considering the various aspects of delivery (the use of the voice, dictions, bodily stance and gesture).

It will be seen that judgments made by an assessor about a candidate's speaking are necessarily highly subjective - he has to make the decision as to whether a speaking performance is a good one or a poor one and thus whether to award a high or a low mark. This means that examiners may disagree sharply about the performance of particular candidates. In fact the quality of the examiner is of crucial importance. As much as possible is done by test-designers, by the examining body and by chief examiners to minimise the possibility of disagreement. This is done by "standardising". A rating scale is prepared which shows what qualities are being looked for in a candidate's speech and what mark is to be awarded for the strongly positive presence of a quality and what for the almost total absence of this quality (e.g. CONTENT and ORGANISATION OF TALK: Main points made clearly in a logically developing argument. Content clearly organised to show an introduction, a middle and a conclusion. Material interesting, relevant, sufficient, of good quality - AWARD 7 to 10 marks. Talk badly arranged. No logical development or argument: main points do not stand out clearly. Material of poor quality, uninteresting, irrelevant, insufficient - AWARD 0 to 3 marks). Then there will be a briefing meeting at which the Chief Examiner will take the assistant examiners carefully through the rating scale so as to establish an identity of understanding as to what is intended. It is probable that a few "guinea-pig" candidates will be examined by the Chief and the other examiners so that the latter can have a preliminary experience of both examining and marking, and so that standards shall be set and absorbed. When the examiners are in the field examining the Chief will pay each a visit for a day or half a day and make his own assessments of the candidates. Later these will all be scrutinised and the assistants' assessments raised or lowered or left as they are. It is a chancy business. But research has suggested that the judgments of experienced examiners in spoken English (at least in Reading, Conversation and the Talk) are at least as valid and reliable as those of written essay-type examinations. (There is considerable doubt about the reliability of group discussion assessments).

If examinations (over the whole range of educational activities in school) are to remain as a vital element in assessment it seems certain that the assessment of spoken English will become a "growth" industry. Perhaps the most important problem will concern the calibre and training of potential assessors. (In the C.S.E. testing of spoken English almost all teachers of English are likely to be drawn into assessment.) There will also be the search for new and appropriate test-elements that test achievement in school courses in spoken English, which must themselves be geared to the needs of human beings in adult society. Finally, there will be continuing research into methods of assessment and their attendant problems of validity and reliability.

IMPROVING PRACTICAL EXAMINATIONS IN SCIENCE SUBJECTS*

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Examination reform has now been accepted in our country as a very powerful instrument to improve quality in education. During the implementation of the reform programme particularly in science subjects it was felt that the work in these subjects would be incomplete unless the practical examinations are also reformed. In fact, the sixth conference of chairmen and secretaries of the boards of secondary education in the country held in November 1964 discussed at length the necessity of improving practical examinations and passed a resolution that the boards may take up this work in collaboration with the Central Examination Unit of the NCERT.

It was a source of great satisfaction that soon after this conference, the Board of Secondary Education, Rajasthan, came forward to take up the new venture in the field of examination reform. A series of experimental tryouts were carried out to evolve an improved system of practical examination and then the board implemented the new plan in its higher secondary examination of 1968 in the subjects of physics, chemistry and biology after making adequate preparation in collaboration with the NCERT. We give a brief résumé of the experimental studies conducted for the development of an improved pattern of practical examinations in science subjects and its large scale implementation.

SHORTCOMINGS OF THE PRESENT PATTERN

A qualitative study based on verbal reports by a number of experienced examiners in Rajasthan revealed that the then existing pattern of examination suffered from the following major shortcomings:

1. Poor sampling: Each experiment given being very complex, comprehensive, and time consuming, only a few experiments (e.g., two in physics) could be set in the limited time available. As such it could only measure a small fragment of the content and a few of the many aspects of skill that practical work is expected to develop. This reduced both the validity and reliability of the practical examination. This was very discouraging to the pupil as well as to the teacher, especially on account of a high degree of chance factor operating in such a system.

2. Absence of reliable criteria of assessment: The criteria of assessment were very general and examiners were inclined to assess the performance of students according to varied standards leading to loss of consistency and uniformity.

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3. Non-comparability of exercises: The few exercises (e.g., two in physics) each pupil would get, varied very much in complexity and nature of skill involved. It was not justifiable to compare the performance of different candidates as obtained on these differing instruments.

BASES FOR A NEW PATTERN

It was felt that practical tests are more costly and time-consuming, and so they should be used only when other more convenient techniques such as written tests cannot be used. It is in the realm of practical skills in these subjects that written tests are not usable and hence practical tests should essentially be used to measure practical skill although other objectives such as knowledge, understanding or application need not be entirely eliminated. For this purpose practical skill was defined under the heads:

(a) process of performance, and

(b) product of performance.

They were further clarified in each subject to delimit their scope. In physics, for example, they were delimited as follows:

Process of Performance

The pupil

1. selects appropriate apparatus, tools, etc.
2. checks apparatus, tools, regarding their working.
3. detects errors and limitations in the fitting up of apparatus.
4. rectifies errors, if possible, under laboratory situation.
5. cleans apparatus, tools, etc.
6. sets up apparatus, tools, etc.
7. sketches arrangement of apparatus (if necessary, at the outset).
8. prepares and follows a systematic and sequential plan for taking observations.
9. states the principle, formula (explaining the symbols, etc., useful in the experiment).
10. manipulates apparatus, tools, etc., while performing the experiment.
11. measures quantities and reads instruments, apparatus, etc., accurately.
12. takes precautions in handling instruments, substances, etc.
13. makes accurate observations of parts, specimens, processes, etc.
14. records observations and makes calculations where necessary.
15. verifies observations.
16. performs experiments with reasonable speed.
17. performs experiments with reasonable accuracy.
18. performs experiments with neatness.
19. adapts himself with somewhat new and different apparatus in setting novel experiments.
20. explains orally the procedures, principles, etc., involved in the experiments.

Product of Performance

The pupil

1. summarizes observations.
2. calculates and finalizes the results.
3. interprets data and draws conclusions.
4. records experimental procedure and conclusions.
5. dismantles and cleans the apparatus, where necessary.
6. arranges the apparatus, substances, etc., at their appropriate places at the end of the work.

Sessional Practical Work

The practical exercises performed by pupils in the higher secondary classes are recorded in specially developed record books. The skills and traits attained while performing these may also be evaluated in board examinations. It may not be possible and also not desirable to evaluate all the traits developed, but a few like completeness, neatness and regularity may be evaluated with the assistance of the subject teacher.

Some of the skills that may be appraised from this aspect of practical work are:

1. Drawing diagrams and sketches from observed facts.
2. Collecting specimens like that of ores, minerals, crystals, etc.
3. Displaying material collected.
4. Improvising simple apparatus.
5. Constructing models.

DEVELOPMENT OF A NEW PATTERN

For the purpose of improving validity and reliability the practical examinations were modified in the following respects:

1. Increasing the number of exercises: Instead of giving few long exercises, many short exercises are introduced, e.g., in physics one major comprehensive experiment is retained and the other is replaced by four or five short exercises. The maximum marks and the time, however, are kept the same.
2. Making the exercises objective-based: Exercises are to be set to test predetermined specific aspects of skill (or understanding) as laid down in the objectives. As mentioned earlier they include within the process and the product of performance. This tends to improve the validity of the practical examination.
3. Improving the sampling of abilities and content: Increase in the number of exercises enables the test to cover many different abilities as specified under the specifications of the skill objective and also to cover a variety of content areas. This helps in improving the coverage and consequently tends to improve reliability and validity.
4. Improving scoring procedures: Very detailed marking schemes giving minute analytical details of assessment of pupil performance are developed not only for major and short

exercises but also for sessional work and viva. Detailed instructions are developed for the use of examiners and candidates for this purpose. This helps in improving objectivity of scoring and controlling inter-rater reliability by minimizing the variability in scoring by examiners emerging from extraneous factors like personal likes and dislikes.

5. Improving reporting and interpreting procedures: Detailed proformas and instructions for their use are developed for the use of examiners. When these reports would be properly used by schools, they will be able to improve science teaching in many respects.

TRY-OUTS

Four examiners in each subjects of physics, chemistry and biology who were involved in the development of the new pattern tried out these procedures three times in actual situation specially arranged for this purpose. In the first try-out 10 candidates and in the second and third try-outs 15 to 20 candidates were involved in all the three subjects. In all the try-outs the four examiners observed simultaneously and marked independently. The experience of earlier try-out was always invariably used to improve the exercises and refine the scoring schemes of the subsequent try-outs. The results of assessment were then studied and correlations found. The findings in the try-outs of biology are given here. In other subjects similar findings are available.

Comparative Study of Three Sets of Examiner Inter-correlations in Biology Practical Examination in Three Try-outs

A. Averaged across questions

Examiner/Try-out	AB	AC	AD	BC	BD	CD	N
I.	.78	.65	.67	.83	.74	.68	12
II.	.94	.95	.95	.92	.94	.93	15
III.	1.00	1.00	1.00	.99	.99	.99	15

B. Based on total test scores

Examiner/Try-out	AB	AC	AD	BC	BD	CD	N
I.	.89	.88	.59	.78	.82	.63	12
II.	.87	.45	.84	.55	.90	.45	15
III.	.97	.99	.98	.98	.98	.97	15

C. Based on ranking of difficulty indices of questions

Examiner/Try-out	AB	AC	AD	BC	BD	CD	N
I.	.88	.90	.90	.98	.78	.75	9
II.	.93	1.00	.98	.93	.97	.98	9
III.	.98	1.00	1.00	.98	.98	1.00	9

Significance levels of Rhos:

When N = 9: .05 = .600; .01 = .783
When N = 12: .05 = .506; .01 = .712
and When N = 15: .05 = .439; .01 = .623

In this subject, during the first try-out three out of six examiner inter-correlations are not significant at the .01 level but are significant at the .05 level. The agreement among the examiners in Try-out II is at or above .92. All the inter-correlations are substantially increased in Try-out II. Again, in Try-out III, the examiner inter-correlations averaged across the questions have reached unity in 3 out of 6 cases, and in the rest they are at .99. Thus the inter-examiner agreement in biology practical tests reached almost to the optimum as a result of intensive training, practice and development of well-designed scoring procedures.

IMPLEMENTATION

1. Preparation: Encouraged by the above findings, the Rajasthan Board decided to launch the reform programme on a large scale throughout the state. It, therefore, developed brochures in each subject entitled "Improved Pattern of Practical Examination" with the help of the NCERT and the examiners who participated in the try-outs, and circulated them to schools. The board also trained all examiners in new pattern of practical examination in the three science subjects. They were given training in the theory of conducting the examinations through four-day workshops organized for the purpose. They acquired practical experience in conducting the new type practical tests in actual examination, which were specially arranged at various places as a part of the training programme.
2. Implementation: With these and other preparatory steps carefully executed, the board introduced the new pattern in the higher secondary examination of 1968. Its impact on school practices is being closely watched. The preliminary review of the impact has been found to be quite encouraging.

SOME PROBLEMS

During implementation some problems were faced which were already envisaged.

1. Lack of equipped laboratories: Many schools do not have good laboratories. For want of such laboratories it becomes difficult to conduct the examination effectively. This applies to the old pattern of examination also.

   Some laboratories do not have trained assistants. Services of trained assistants are essential.
2. Number of candidates per examiner: This pattern envisages close observation of pupil performance during the period of examination. One examiner cannot obviously cope up with 20 candidates at a time as is the practice in vogue. Perhaps, 10 may be a manageable number.
3. Trained examiners: For some years, till the examiners are acquainted with the new pattern, it will have to be seen that every examiner is fully acquainted with the spirit and technique of the new pattern of examination before he is entrusted with the job.

IMPLICATION

For the efficacy of this new examination co-operation from different agencies will be needed. Some implications to such agencies are indicated below:

Departments of Education and Boards of Secondary Education

1. School laboratories will have to be better equipped.
2. Practical syllabus may be reviewed.
3. Flexible time-tables will have to be permitted.
4. Better inspection and guidance programme will have to be developed.
5. Only qualified and trained examiners will have to be selected.
6. Examiners' reports will have to be scrutinized and the findings reported to schools for action.

Schools

1. More initiative on the part of individual teachers and pupils will be needed.
2. Rigidity of time-tables will have to be reduced.
3. Laboratories should be better equipped.
4. The evaluation data should be used for remediation and improvement.

Teachers

1. Variety of practical activities will have to be designed and organized to develop specific skills among pupils and to discourage the tendency of mechanical repetition of standard experiments.
2. Initiative on the part of pupils should be encouraged.

CONCLUSION

Practical work in science subjects is aimed at the realization of some specific purposes which cannot be otherwise achieved. Practical examinations, therefore, have to be so planned that they measure the degree of success achieved by practical work as a contribution towards the multi-faced development of pupils' innate powers and subsequent achievements. The new pattern suggested here aims at this. It defines the outcomes of the process and the product of performance, stresses the need for developing valid and reliable tools of measurement and builds in ways to evaluate the results of measurement. It also envisages sound feedback procedures to utilize the results of evaluation in improving school practices. It is hoped that given a fair trial this pattern will work as a catalytic agent in making science education a dynamic process and a creative activity in our schools.

A STUDY OF OPTIONAL QUESTIONS IN EXAMINATIONS

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The case for inclusion of optional questions in an examination is frequently argued on the grounds that a particular examination is not designed to measure whether a student possesses knowledge or facts, but whether he has developed particular abilities or skills which can be assessed independently of the particular question or questions answered. If the assumption that these skills and abilities can be assessed independently of the particular question answered is accepted, the inclusion of optional questions in a public examination allows the teacher greater freedom to develop these skills and abilities in any of a number of sections of the broad subject area, and it allows greater freedom for the individual student to pursue his interests through independent study.

From a measurement point of view there are considerable difficulties in the use of optional questions in an examination. Many people would argue that the use of optional questions in an extended answer examination adds one further source of variability to the subjectivity and inaccuracy that already exist in extended answer examinations. If a student is permitted to choose which questions he wishes to answer, the basis for comparability of scores is considerably weakened, because different students will answer samples of questions which are not comparable in content, abilities or objectives. As a result, the content validity of the examination differs considerably for different students. If a choice of questions is available, the questions answered by a particular student are likely to provide a limited, and perhaps distorted, sample of that student's achievement in the course, because he will tend to choose those questions he is best prepared to answer, and because the availability of options gives him greater opportunity to use materials prepared by others to produce an answer which does not reflect his ability. Rather than being fairer to all students, as some advocates of optional questions in an examination would argue, the opportunity to choose among optional questions may help the poorly-prepared student considerably more than it helps the well-prepared student.

This report is a brief summary of some of the results of a study of the effects of optional questions in examinations. As part of this study, the marks awarded to optional questions in a number of examinations, ranging from the sciences to the humanities, have been analysed in an attempt to determine -

(i) the extent to which optional questions differ in difficulty,

(ii) the extent to which optional questions and different marker interact,

(iii) the extent to which students of different ability select optional questions of different difficulty, and

(iv) the extent to which optional questions differ in their marker reliability.

(i) Differences in difficulty of optional questions

One problem in estimating the difficulty of optional questions is that the groups of students attempting each optional question differ in ability. In an examination which consists of a compulsory section in addition to optional questions, it is possible to use a student's score on the compulsory section as an index of his ability in the subject being examined. It is then possible to calculate the average score on each optional question for candidates in each range of scores on the compulsory section (i.e. in each ability range), and to use these average scores to estimate the average score that would have been obtained on each optional question if all students sitting for the examination had attempted each optional question. If the examination does not contain a compulsory section, the average score obtained by the students on all other questions attempted on the examination can be used in a similar way, as an index of the student's ability in the subject of the examination.

An indication of the differences in difficulty of combinations of optional questions available to students can be gauged from the results in Table 1. In this table, the differences between the estimated average scores on the least difficult combination of questions available to students are given for six examinations.

Table 1: Differences in average scores between least difficult and most difficult combination of questions available to students in six examinations containing optional Questions.

Examination	No. of students used in the analysis	Choice available	Difference in estimated average mark between least and most difficult question combinations (expressed as a percentage of possible marks on optional questions)
1. Grade 11 Physics	4360	3 out of 5	9.7%
2. Grade 12 Physics	4450	5 out of 7	4.7%
3. A Grade 12 Humanity	2230	5 out of 14	3.5%
4. A Grade 12 Humanity	2150	5 out of 13	3.3%
5. Grade 12 History	7410	3 out of 13	6.5%
6. Under-graduate Physics	190	5 out of 11	10.2%

The entries in the table can be regarded as estimates of the differences in average marks that would have been obtained had the same candidate attempted two different combinations of questions, or had two candidates of "equal ability" attempted different combinations of questions. It is apparent that considerable differences in the results on an examination containing optional questions can arise from differences in the difficulty of the options offered, and that these can produce a difference in average marks obtained by candidates of equal ability of up to 10% of possible marks.

(ii) Interaction of examiner and optional questions

It has long been recognized that different markers mark essay questions to different standards. In the analyses of examination papers in this study it is clear that markers do not mark all questions to a consistently hard or easy standard, and there is evidence of interaction between marker and optional question which results in a marker marking different questions to different standards. An idea of the magnitude of the effect of this can be gauged from the results in Table 2, in which are given the maximum observed differences in the average marks that would be obtained by candidates of "equal ability" who attempted different question combinations, and whose scripts were marked by different markers. Results in the table are based on analyses of Examinations 3, 4 and 5 in Table 1. Examination 3 was marked by 15 markers, Examination 4 by 14 markers and Examination 5 by 31 markers. The system of allocating scripts to markers was such that each marker marked every possible question.

Table 2: Maximum observed difference between average scores obtained by students of "equal ability" as a result of a number of sources of variation.

Source of variation	Maximum observed difference between average scores obtained by students of "equal ability" as a result of this source of variation.		
	Examination 3	Examination 4	Examination 5
	%	%	%
Different questions (irrespective of marker)	3.5	3.3	6.5
Different markers (irrespective of question)	6.8	5.1	9.5
Same questions, marked by different markers	7.8	10.0	23.1
Same markers, marking different questions	10.8	9.6	18.8
Different questions, different markers	13.0	14.1	29.9

It is apparent that there is considerable interaction of question and marker and that two students of "equal ability" would be expected to obtain average marks which differed by up to 30% of possible marks, depending on the optional questions they selected and the particular marker to whom their scripts were assigned. The entries in Table 2 are the observed maximum differences in average scores between students of equal ability due to various sources of systematic variation in the marks awarded to students. Some students would experience differences considerably greater than these average values, and other would experience differences considerably less than the average values.

If a statistical correction had been applied to the marks awarded to different questions by different markers, so that students of "equal ability" would be expected to obtain the same average mark on each question irrespective of the marker who marked the question, then a considerable percentage of the students in the above examinations would have received a different final grading.

(iii) Ability of students attempting different question combinations

In an examination which consists of a compulsory section and optional questions, it is possible to use the compulsory section mark as an index of the ability of students who attempt different combinations of optional questions. As described earlier, a measure of the difficulty of the question can be obtained by estimating the average mark that would have been obtained had all students attempted th question. There is evidence that the most difficult question combinations were chosen by a group of students of significantly lower average score on the compulsory section than the group of students who chose the least difficult question combinations. Some of the results obtained are summarized in Table 3 for Examinations 1 and 6 in Table 1.

Table 3: Differences between average scores on the compulsory sections of two examinations for students attempting the least difficult and most difficult combinations of optional questions.

Examination	Difference in estimated average score of least and most difficult question combinations (as percentage of total score on all optional questions).	Average compulsory section score of students attempting least difficult questions minus average compulsory section score of students attempting most difficult questions (expressed as a percentage of possible marks).
	%	%
1	9.7	+21.5
6	10.2	+ 8.6

(iv) Differences in marker reliability of optional questions

Each of the scripts completed by the 7410 students who sat for a Grade 12 History examination (Examination 5 in Table 1) were independently marked by two of the 31 markers who marked scripts for this examination. The consistency with which the same answer was independently marked by pairs of markers for each of the 13 optional questions on this examination is expressed in three ways in Table 4. Firstly, for each question, the correlation between the marks awarded by two markers to the same answer is given. The mark/remark correlation values in the Table vary from .53 to .67 for the 13 questions on this examination. Secondly, the percentage of variance in the marks awarded to an answer by one marker which is common to the mark awarded by the second marker is given. This percentage represents the percentage of common variance in the marks awarded to the same answer by two markers. The percentage of the variance of scores which is unreliable variance or error variance can be obtained by subtracting the percentage of common variance from 100%. In the Table, the percentage of variance which is common to the two marks awarded to answers on each question varies from 29% to 46%; that is, the percentage of variance of marks which is error variance varies between 71% and 54%. The third measure of consistency in the Table is the average size of the difference of marks awarded to the same answer by two markers. The values obtained range from an average difference of 9.9% of possible marks to an average difference of 12.5% of possible marks.

Table 4: Correlation between marks awarded independently by 2 markers to answers on each of 13 questions on a Grade 12 History Examination.

Question	Correlation between marks awarded independently by 2 markers.	Percentage of variance common to the marks awarded by 2 markers.	Average difference between marks awarded to the same answer by 2 markers (as a percentage of possible marks.)
		%	%
1	.56	31	11.6
2	.57	33	12.5
3	.53	29	10.5
4	.60	36	10.5
5	.67	45	12.3
6	.55	31	10.0
7	.67	46	10.9
8	.65	43	10.5
9	.65	42	11.4
10	.63	40	9.9
11	.65	43	11.3
12	.65	43	10.4
13	.66	44	12.4

Summary

This report briefly summarises some results of a study of the effects of optional questions in six examinations. The results indicate that

(i) Differences in difficulty of different combinations of optional questions available to students can result in average differences of between 3% and 10% of possible marks between students of equal ability who select different question combinations.

(ii) Different markers mark different optional questions to different standards, and, as a result, students of equal ability who answer different questions and whose answers are marked by different markers could be expected to obtain average marks which differ by up to 30% of possible marks.

(iii) The group of students who select the most difficult combinations of optional questions on an examination are of significantly lower ability than students who answer the least difficult question combinations.

(iv) There are considerable differences in the reliability with which different optional questions are marked.

The report has indicated a number of difficulties associated with the use of optional questions in examinations. Further work is currently in progress to investigate other effects of optional questions in examinations.

THE INFLUENCE OF ANXIETY ON SEVERAL MEASURES OF CLASSROOM PERFORMANCE*

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The area of research concerned with the influence of anxiety on human learning and performance has significance for both educational practice and psychological theory. Within an educational context it has particular relevance for procedures used in student evaluation and testing. We live today in a highly test conscious culture. Decisions of major consequence to the individual are increasingly being made on the basis of his performance in tests. It is important, therefore, that the various factors that influence test performance be identified and the nature of their influence determined. There is growing evidence that anxiety is a factor of considerable importance in influencing test performance.

Beyond its relevance for educational measurement, research in this area is also contributing directly to a more precise understanding of human learning and performance. Investigators from quite varied backgrounds have carried out research in this area. Behaviorists (Spence and Spence, 1966), neuro-psychologists (Hebb, 1955; Malmo, 1959) and psychologists adopting a more psychoanalytic position (Sarason et al., 1960) have all developed rival theories designed to explain the influence of anxiety on learning and performance. Within an educational context, Sarason's psychoanalytic position has been found to have greatest relevance.

The influence of anxiety on performance in a variety of laboratory tasks is now quite well documented. Laboratory studies have established that the complexity of the task to be performed and the level of stress (usually defined in terms of level of ego-involvement) inhering in the task are two factors, in particular, which must be considered in explaining the influence of anxiety. Anxiety appears to facilitate performance on simple, straightforward tasks where there is little response competition and to interfere with performance on more complex tasks where response competition is likely (Taylor, 1951; Spence and Taylor, 1951; Taylor and Spence, 1952; Montague, 1953; Standish and Champion, 1960). In conditions where ego-involvement is low, a number of studies have found anxiety to be unrelated to performance (Lucas, 1952; Deese, Lazarus and Keenan, 1953; I.G. Sarason, 1957b; Kalish et al., 1958; Nicholson, 1958; Feshbach and Loeb, 1959), although some studies have found that anxiety facilitated performance (I.G. Sarason, 1956, 1957a; Longnecker, 1962). In conditions of high ego-involvement, anxiety has typically been found to interfere with performance (I.G. Sarason, 1956, 1957a; Nicholson, 1958; Harleston, 1962).

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While these relationships have frequently been demonstrated in relation to laboratory tasks, rather fewer studies have dealt with the question of the relationship between anxiety, task complexity, level of stress, and performance in more naturally occurring situations such as the classroom. Wrightsman (1962), however, in one study, varied level of stress in relation to aptitude test performance. He found no relationship ($r = -.06$) between anxiety and performance in the low ego-involvement condition and a significant negative relationship ($r = -.37$) in the condition of high ego-involvement. While there had been little change in the performance of low anxious (LA) subjects in the two conditions, the performance of high anxious (HA) subjects was reduced by almost one standard deviation by the stress of the instructions.

In a study with college students as subjects, Paul and Eriksen (1964) carried out a similar analysis using a classroom achievement test. A regular psychology class examination was administered on the morning of the experiment (the high stress condition) and a parallel form of the test was administered to the same individuals at night under conditions designed to minimise anxiety (the low stress condition). When their data were analysed using only subjects from the middle range of intelligence, a significant interaction was found between level of stress and level of anxiety. In the high stress condition, LA subjects were superior to HA subjects, while, in the relaxed condition, the HA subjects were superior.

The absence of experimental control over the learning materials and process may be a limiting factor in this study. Wide variation would be expected among the subjects as to the notes and texts used in studying for the examination, as well as for the time spent in studying for the examination.

These difficulties were substantially overcome in a study carried out by Caron (1963). He presented high school students with a 1700 word passage (consisting of an explanation of Atkinson's motive-expectancy-incentive model) to be studied in the experimental situation and, following the study period, obtained measures of rote learning and comprehension. The rote learning questions involved the reproduction of formulae and the definition of symbols contained in the passage, while the comprehension questions required the subjects to apply principles concerning risk preference that were presented in the passage. One half of his subjects studied the passage and were tested under examination conditions while the other half did so under conditions designed to induce curiosity. The condition was established by informing the subjects that the purpose of studying the passage was to enable them to interpret their own personality profiles which had been obtained in a previous testing session. For the rote learning task, there were no differences between HA and LA subjects in either treatment condition. For the comprehension task, there was no difference between HA and LA subjects in the curiosity condition. In the examination condition, however, LA subjects were superior to HA subjects. Caron (1963, p. 537) interpreted these findings as supporting the conclusion ". . . that the performance of anxious subjects on 'simple' tasks does not deteriorate under stress . . . whereas on 'complex' tasks their output suffers markedly."

While Caron's study contains many attractive features, a problem in interpreting some of his results arises because of the shortness of his measuring instruments. Only six rote learning questions and four comprehension questions were used (personal communication) and this may have operated to reduce reliability and, through this, the possibility of obtaining

significant differences between the LA and HA subjects. With respect to the rote learning task, a significant difference in favour of the LA subjects might well have been expected in the examination condition. The subjects were given only fifteen minutes to study the 1700 word passage so that learning that took place might be expected to be rather unstable and unorganized, resulting in considerable response competition in the performance situation. As has already been noted, in these circumstances anxiety may be expected to disrupt performance.

In the present study, the influence of anxiety on the performance of typical classroom tasks was again studied. As in Caron's investigation, the subjects were required to study a prose passage in the experimental situation and were then tested on several performance measures. In the present investigation, the measures obtained were of factual learning and reasoning and by increasing the number of questions asked, an attempt was made to ensure that a satisfactory level of reliability was reached for each measure. On the basis of scores on the High School Form of the Test Anxiety Scale, groups of LA, MA (moderately anxious) and HA high school students were obtained who completed the performance tasks in conditions of either high or low ego-involvement.

Hypotheses

Anxiety is conceived of as a hypothetical construct mediating between certain situational stimuli and various specifiable responses. The stimulus situation which evokes the anxiety reaction is assumed to be such that the individual anticipates a strong threat to his self-esteem. In classroom test situations, the anticipated threat to self-esteem is, most often, failure on the test.

In learning and performance situations, it is the view of Sarason and his colleagues (Mandler and Sarason, 1952; Sarason et al., 1960), that anxiety acts as a cue to elicit both responses that are relevant to the learning or performance task, and responses which are irrelevant. Task-relevant responses are observed in an increase in effort, concentration, and in procedural strategies previously found to facilitate learning and reduce anxiety. Task-irrelevant responses may be observed in the intrusion of thoughts concerning the consequences of failure, of self-depreciating ruminations and by ego-defensive avoidant responses designed to protect the individual from loss of self-esteem. These task-irrelevant responses compete with responses relevant to the task and typically have an interfering effect on learning and performance.

The extent to which interference to performance is caused by anxiety will depend upon level of ego-involvement and task complexity. When ego-involvement is low and performance is not perceived as having important ego-related consequences, little anxiety and few associated task-irrelevant responses will be elicited. In such a situation, therefore, performance for all individuals would be expected to be relatively free of the influence of anxiety. As ego-involvement increases, however, so will the tendency to react with anxiety increase and with this the tendency for interfering task-irrelevant responses to be elicited. When ego-involvement is high, individuals reacting with high levels of anxiety will respond with many more task-irrelevant responses than individuals who react to the same conditions with lower levels of anxiety. When the task is complex requiring concentration and careful processing of information, the intrusion of these task-irrelevant responses would be expected greatly to disrupt performance, so that level of anxiety would be inversely related to performance.

In the present study, the complexity of both performance tasks was such that anxiety, when elicited, was expected to have a debilitating effect on performance. On the factual learning task, the intrusion of task-irrelevant responses was expected to interfere with both the learning and the recall of the material studied. Because of the limited exposure to the study passage, overlearning would be unlikely so that what was learned would be relatively unstable and unorganized and, as such, highly susceptible to interference resulting from anxiety. Even greater interference was expected on the reasoning task. The presence of task-irrelevant responses was expected to have a particularly disruptive effect on the application of the complex cognitive processes required for performance on this task as generalizations were made, inferences drawn and hypotheses formulated and tested.

On the basis of these considerations two hypotheses were examined:

Hypothesis 1. In low ego-involvement conditions, anxiety has no influence on performance. With both tasks, there will be no difference in the performance of LA, MA and HA groups of subjects.

Hypothesis 2. In high ego-involvement conditions, anxiety acts to disrupt performance in complex tasks. In performing both tasks, LA subjects will be superior to MA subjects and MA subjects will be superior to HA subjects.

Differences in performance for the various anxiety groups were also expected under the two ego-involvement conditions. For the factual learning task, ego-involvement was expected to facilitate the performance of LA and MA subjects. For these subjects the enhancing effects of the increased motivation induced by the high ego-involvement instructions were expected to outweigh any negative effects due to the intrusion of task-irrelevant responses associated with anxiety. Thus it was expected that their performance would be superior in the high ego-involvement condition. For the HA subjects, however, the facilitating effects of the increased motivation were expected to be completely counteracted by the interfering effects of anxiety.

With the more complex reasoning task, the interfering effects of anxiety were expected to be greater than for the factual learning task. Because of this, only the performance of LA subjects was expected to be superior in the high ego-involvement condition. For MA subjects similar levels of performance were expected for the two ego-involvement conditions. For HA subjects the interfering effects of anxiety in the high ego-involvement condition were expected to be substantially greater than any facilitating effects that might occur, so that their performance was predicted to be superior in the low ego-involvement condition.

On the basis of these expectations, two further hypotheses, concerned with difference in performance under the two ego-involvement conditions, were examined.

Hypothesis 3. With the factual learning task, the performance of the LA and MA subjects will be superior when ego-involvement is high. However, HA subjects are expected to perform no better when ego-involvement is high than when it is low.

Hypothesis 4. With the reasoning task, the performance of LA subjects will be superior when ego-involvement is high, the performance of MA subjects will be similar in the two conditions of ego-involvement and the performance of HA subjects will be superior when ego-involvement is low.

Method

The subjects of the study were 173 sixth form male high school students attending three metropolitan boys' high schools in Sydney.

The content of the study passage consisted of a description of life among the Trobriand Islanders of the South Pacific. (1) This content appeared to be particularly suitable, since it was closely related to content typically taught at the high school level and yet there was little chance of the subjects having had any prior experience with it. To control the difficulty level of the vocabulary used in the passage, only words from the Thorndike-Lorge lists (1944) which occur in reading materials with a frequency of six or more times per million words were included. Thorndike and Lorge state that words appearing with this frequency are suitable for use with students in 3rd form and above. The passage contained 1332 words and one illustration, and filled almost six quarto pages of typescript.

Two performance tests were constructed. One measure, the factual learning measure, consisted of 20 multiple-choice questions for which the correct answer was explicitly stated in the study passage. The second measure, the reasoning measure, contained 12 multiple-choice questions for which the correct answer was not explicitly stated in the study passage. In answering these questions the subject was required to make deductions, and to draw inferences and implications from the given information.

Three weeks prior to the test administration, the High School Form of the Test Anxiety Scale (Mandler and Cowen, 1958), specially adapted for Australian conditions, was administered. A split-half reliability coefficient of 86 was obtained for this measure. Subjects scoring in the lower, middle and upper thirds of the anxiety distribution were designated as LA, MA and HA respectively. For each level of anxiety, the subjects were divided into two groups by use of a table of random numbers, one group being allocated randomly to the high ego-involvement condition and the other to the low ego-involvement condition.

To establish conditions of high ego-involvement (2), the subjects were informed that the test was one of scholastic aptitude and that their results would be made available to their headmaster. When the testing was completed, they were informed as to the actual purpose of the test. To establish conditions of low ego-involvement the subjects were informed that

(1) An earlier version of the study passage and performance measures was used in a previous study (Sinclair, 1965).

(2) The administration of the instruments in the high ego-involvement condition was carried out by the author in each school. The administration of the instruments in the low ego-involvement condition was carried out by T. Heys and W.J. Fenley whose assistance is gratefully acknowledged.

the purpose of the test was to establish whether the study passage was a good one for sixth form students or whether the questions were too easy or too difficult.

Twenty-five minutes were allowed for study of the passage. Twenty minutes were provided in which to answer the twenty factual learning questions and a further twenty minutes were provided in which to answer the twelve reasoning questions. These time limits were sufficient to enable all subjects to complete both tests. So that performance on the reasoning measure would not be influenced by the subjects' ability to recall information from the passage necessary for answering the questions asked, they were instructed that they could use the study passage in answering these questions.

Results

The design of the study was a 2 x 3 factorial, involving 2 levels of ego-involvement (high and low) and 3 levels of anxiety (high, moderate and low). This design was used for each of the two performance measures (factual learning and reasoning) with unequal numbers of subjects in each cell.

For the factual learning measure, the means of scores of the different anxiety groups are presented in Table 1. A reliability coefficient (K.R.20) of ·59 was obtained for this measure.

TABLE 1
Mean Factual Learning Scores for LA, MA and HA Groups of Subjects in Two Conditions of Ego-involvement

Anxiety Level	Low Ego-involvement			High Ego-involvement		
	N	$\bar{X}$	sd	N	$\bar{X}$	sd
LA	28	13·82	2·20	31	16·16	1·81
MA	28	14·32	1·94	29	14·62	2·58
HA	24	13·71	2·74	33	14·03	2·26

TABLE 2
Summary of the Analysis of Variance for the Factual Learning Measure

Source	Sum of Squares	df	Mean Square	F
Ego-involvement	41·73	1	41·73	8·17**
Anxiety	36·02	2	18·01	3·53*
Interaction ..	39·20	2	19·60	3·84*
Error	853·16	167	5·11	

** $p < ·01$.
* $p < ·05$.

A summary of the results of the analysis of variance carried out on these data (Winer, 1962, pp. 241-244) is presented in Table 2. Both main effects and the interaction were found to be significant. When individual group mean scores were examined by the Newman-Keuls procedure, it was observed that the performance of the LA group in the high ego-involvement condition had largely accounted for the significant results. As predicted, there were no significant differences found between the anxiety groups in the condition of low ego-involvement. In the high ego-involvement condition, as predicted, the performance of the LA subjects was superior to that of MA and HA subjects. The expected significant difference between the MA and HA groups did not emerge. Finally, again as hypothesized, the performance of the LA group in high ego-involvement conditions was superior to that of the LA group in low ego-involvement conditions while for the HA groups performance was similar in these two conditions. The expected superiority of the MA group in the high ego-involvement condition was not found.

TABLE 3

Mean Reasoning Scores for HA, MA and LA Groups of Subjects in Two Conditions of Ego-involvement

Anxiety Level	Low Ego-involvement			High Ego-involvement		
	N	$\bar{X}$	sd	N	$\bar{X}$	sd
LA	28	8·00	1·89	31	8·48	2·06
MA	28	7·36	2·08	29	8·38	1·82
HA	24	6·88	2·58	33	7·76	2·05

TABLE 4

Summary of the Analysis of Variance for the Reasoning Measure

	Sum of Squares	df	Mean Square	F
Ego-involvement	27·16	1	27·16	6·28*
Anxiety	24·77	2	12·39	2·87
Interaction	2·23	2	1·11	
Error	721·68	167	4·32	–

* $p < .05$.

In sum, the hypothesized relationships for the LA and HA groups in the two conditions of ego-involvement were all confirmed. Those for the MA group were not confirmed, the performance of that group being no different from that of the HA group.

For the reasoning measure, the mean scores of the different anxiety groups are presented in Table 3. A reliability coefficient (K.R.20) of ·68 was obtained for this measure.

A summary of the results of the analysis of variance carried out on these data is presented in Table 4. In this analysis only the mean square for level of ego-involvement was significant, indicating a general superiority in the high ego-involvement conditions. When pairs of means were analysed, again using the Newman-Keuls procedure, it was found that there were no differences between the anxiety groups in either ego-involvement condition. This was predicted for the low ego-involvement condition but for the high ego-involvement condition an inverse relationship between level of anxiety and performance had been predicted. All anxiety groups performed better in the high ego-involvement condition (although in no case did the difference reach an acceptable level of significance). This was predicted for the LA subjects but not for the MA and HA groups. In fact, for HA subjects superior performance had been predicted for the low ego-involvement condition.

Discussion

With respect to the factual learning task, the results obtained confirmed, in large measure, the hypotheses that were developed for testing, In test-like conditions, anxiety was observed to debilitate performance on that task. With respect to the reasoning task, however, few predicted relationships were supported. Despite the complexity of the task, anxiety did not appear to influence performance in the test-like condition. A possible reason for this latter result is to be found in the manner in which the reasoning test was administered. So that all subjects would have approximately equal access to the factual information upon which the reasoning items depended, the subjects were allowed to consult the study passage while answering the questions. This would make the reasoning task rather comparable to an open-book examination in which the student is able to consult certain reference material on answering the question asked. This procedure, by providing a memory-support (Sieber, 1969) in the performance situation, may well have had a reassuring, anxiety-reducing effect on the HA subjects so that interference to performance due to anxiety may have been minimal.

The results obtained provide a number of conclusions that bear directly on classroom practice and on the different theories that have been developed to explain the influence of anxiety on learning and performance. With respect to the factual learning task, the results support the conclusion that anxiety operates to debilitate performance when a complex task is to be performed in test-like conditions. This conclusion suggests that in important examinations, the HA student will be at a considerable disadvantage. When competing with other students for scholarships, university entrance, school prizes, employment opportunities or simply place in class, anxiety will act to interfere with and reduce the level of his performance.

The results also support the conclusion that while instructions designed to increase level of ego-involvement will raise the level of performance of LA students, it will not do so for MA and HA students. Sarason's theory suggests that for the MA and HA student, the positive motivational benefits deriving from the ego-involving instructions are cancelled out by the operation of task-irrelevant responses which are also elicited.

This conclusion suggests that the widely adopted practice in education of attempting to motivate students by placing strong emphasis upon the importance of examinations and the need to do well and avoid failure will be of value only to low test anxious students. In the present study with respect to the performance of moderately and high test anxious students on the factual learning task, little was achieved by increasing level of ego-involvement and, through this, anxiety. In fact, it may be that this emphasis, from a long term view, will have quite harmful effects. Since, at high levels, anxiety is such an unpleasant and exhausting experience, this emphasis may serve to engender a strong dislike of school which may eventually lead the student to drop out of school prematurely. Some support for this possibility is provided by Spielberger (1962) who observed, in one study, that HA college students had a higher drop out rate than LA students of comparable ability.

In addition to the implications provided for education practice, the results of the present study also provide implications for theory. The conclusion that in a test-like situation, anxiety will interfere with performance on a complex task is, as we have seen, consistent with the viewpoint of Sarason and his colleagues (Mandler and Sarason, 1952; Sarason et al., 1960). It is also, however, consistent with the Spence-Taylor theory, although in this theory it is the drive function of anxiety that is emphasised rather than the cue function. Spence and Taylor (Spence and Spence, 1966), conceive of anxiety as a drive which combines multiplicatively with the habit strengths of responses present in the individual's response hierarchy. When the desired response is not clearly dominant in the response hierarchy, as tends to be the case in complex performance situations, increase in drive (anxiety) serves to heighten competition among potential responses and in so doing disrupts performance.

The conclusion reached that increase in level of ego-involvement (stress) serves to raise the performance of LA individuals but not MA and HA individuals is, again, consistent with Sarason's theory. This conclusion, however, is not easily accounted for by the Spence-Taylor theory. Although, in the most recent statement of their position (Spence and Spence, 1966), they give passing reference to the question of situational factors (such as ego-involving instructions) that serve to elicit anxiety, they have not considered this question in detail, nor attempted to manipulate such factors in their research studies.

A number of directions for future research are suggested by the results of the present study. In this study the subjects used were male and of above-average ability. There is a need, then, for research to be carried out to determine if the conclusions reached in this study also hold for females and students of average and below-average ability. It is important, too, that ways be found to control the interfering effects of anxiety in the classroom. In particular, ways need to be found by which the HA student may be challenged but his anxiety kept within non-debilitating limits. One suggestion that arises from the present study is the possibility of using open-book examinations where reasoning is the major objective of assessment. Being able to consult appropriate reference material in the examination situation reduces the strain of having to remember and recall large bodies of information and in so doing may serve to reduce anxiety and the interference to reasoning that results. Sieber (1969) in an important recent article, provides further experimental evidence that

the provision of memory supports will be a particular aid to HA students in counteracting the interfering effects of anxiety. In that article she also suggests a number of other ways by which the HA student may be helped to perform more effectively. In particular she discusses the benefits that may be derived from instruction in the use of verbal encoding skills, diagrams, mnemonic devices, notational systems and outlining systems for organizing general ideas prior to the development of detail. There is a need for these suggestions to be followed up in classroom-oriented research.

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DEVELOPMENT OF THE CANADIAN SCHOLASTIC APTITUDE TEST

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The Canadian Scholastic Aptitude Test (CSAT) for English-speaking students is one of a battery of objectively scorable tests being developed by the Service for Admission to College and University (SACU). CSAT is designed to measure what may be described as the general verbal and mathematical abilities of students in their final year of secondary school. The test is divided into four sections each requiring 30 minutes of administration time. Two sections test verbal ability, one with antonym, verbal analogy and sentence completion items, the other with questions on the content of several short essays dealing with diverse topics. The remaining two sections of the test each contain a heterogeneous collection of mathematical items which assess the examinee's ability to reason numerically, algebraically, or geometrically. In addition to these four sections, CSAT contains a fifth section composed of items being pretested. Performance on this section, which also requires a half-hour of administration time, does not count towards the scores an examinee achieves on the test. The motivation of examinees to perform pretest questions is maintained by concealing their identity in the test.

CSAT was first given in February, 1969 and is presently scheduled for administration once per year. The test is new each year in the sense that it consists of a different set of items drawn from a secure item pool. It should be noted that different forms of CSAT can be made very similar in the sense that each form can be built from items drawn to match similar specifications with respect to type, difficulty and level of discrimination. The specifications are laid down by a test development committee consisting of one member from each Canadian province plus representatives of SACU and of the Ontario Institute for Studies in Education, the institution responsible for item development and test assembly under contract with SACU.

Two "raw" scores are derived for each examinee who takes CSAT, a verbal and a mathematical score. Both scores are obtained from a formula in which a fraction of the number of wrong answers is subtracted from the number of correct answers. The penalty is imposed to discourage random guessing on the test. Examinees are fully informed of the penalty and the rationale underlying its use in a handbook they are given to study several weeks before the administration date. The handbook also contains practice items to make examinees better informed of the nature of CSAT.

For the purpose of reporting on the performance of an examinee both to him and to the universities he designates, raw scores are converted to standard scores. The distribution of standard scores has a mean of 500 and a standard deviation of 100. Thus the effective range of CSAT scores is from 200 to 800.

At this point several questions that are frequently asked with reference to CSAT warrant consideration:

1. Why does Canada need a national university admissions testing program? One answer to this question begins by recognizing two facts of contemporary Canadian education, that it is a matter of provincial responsibility and that control of education is becoming decentralized in important respects. Provincial control of education has resulted in the development of interprovincial differences in secondary school programs. The differences are substantial enough to make difficult any direct and meaningful comparison of records of school achievement from different provinces. Decentralization of control has occurred in some provinces to the extent that the teaching and administrative staff of individual schools have sole responsibility for determining curriculum and evaluating student performance. Consequently, it is often difficult to compare in a meaningful way the school records of applicants from different secondary schools in the same province. National admissions tests, such as CSAT, hold forth the hope of providing universities with a valid basis for comparing applicants from different schools and different provinces.

Another reason for university admissions tests is that they help the universities reach early admission decisions. The policy of admitting some applicants several months before they finish secondary school, subject only to the proviso that they successfully complete secondary school, has been forced on Canadian universities by the practice of provincial governments to finance universities on a formula basis and by the practice of most students to apply to more than one university. Under formula financing, universities typically receive government grants in direct proportion to the number of students they have enrolled. To ensure a full first-year enrolment, thereby ensuring full enrolments in succeeding years and qualifying for maximum government grants, a university will admit students in two phases. Many of the applicants admitted in the first phase will decide ultimately to go elsewhere. When a university knows which applicants are not coming, it is able, in the second phase of admissions, to complete its first-year roster by admitting from the pool of remaining candidates. Inasmuch as the first phase of admissions is made in the absence of a completed secondary school record, universities find it advantageous to have the information provided by valid admissions tests to guide their decision making.

2. Why does CSAT attempt to measure verbal and mathematical ability, nothing more nor less? Our first response to this question is that these abilities seem to represent characteristics of considerable practical and theoretical significance. Over the past 60 years psychologists and educators have found them, either separately or in combination, to correlate moderately well with academic accomplishment of many different types. Moreover, verbal and mathematical ability appear with great consistency in factor-analytic studies of academic achievement. They are central to theories such as Vernon's (1961) on the structure of human abilities. One would expect a good test of verbal and mathematical ability to provide scores with considerable relevance for admissions work.

Another response to the second question focuses on the fact that verbal and mathematical scores are only moderately correlated. This implies that a test like CSAT should provide information about two substantially different aspects of an examinee's capabilities. Consequently, the test should enable university admissions officers to judge applicants in terms of the ability most relevant to their proposed programs. Verbal ability should probably receive more weight in comparing applicants who want to study a language or history. On the other hand, mathematical ability would be expected to receive more weight in comparing applicants for work in mathematics, physics or engineering. More than this, the availability of scores on both abilities should enable admitting institutions to counsel students about the advisability of entering one program of study as opposed to another.

3. Why does Canada require its own test? Why can it not use admissions tests prepared elsewhere? It is true that CSAT is very similar to the Scholastic Aptitude Test (SAT) of the College Entrance Examination Board (CEEB) of the United States. The reason for this is not coincidence. In fact, CEEB has been very generous in its provision of assistance to SACU in initiating CSAT. Moreover, the underlying rationale for the two tests is very similar. These facts notwithstanding, there are points that can be made in support of the development of a Canadian test.

One quite obvious point is that the population of examinees for CSAT differs in some respects from the population for SAT. For example, it appears that in order for the test to be ideally suited to Canadian examinees the mathematical items in CSAT must be somewhat more difficult on the average than the mathematical items in SAT. Also, differences between Canadians and Americans in cultural background and in the use of English means that some questions that would be appropriate for use in one country are inappropriate for use in the other.

Another reason for Canada to build its own university admissions tests is that by so doing it retains control of the specifications for the test. If CSAT should prove to be unsatisfactory in certain respects, given its present specifications, it will be possible to make revisions in an attempt to achieve a better instrument. Such revisions would probably be difficult to have incorporated in a test designed primarily for a United States population.

An additional factor which suggests the need for a Canadian test for English-speaking students is the parallel requirement in Canada for a test for Franco-phone students. Such a test, Test d'aptitude générale aux études post-secondaires (TAGEPS), has been developed by the Institut de recherche pédagogique and was also administered for the first time in 1969. The design of TAGEPS is essentially identical with that of CSAT but the items have been produced and validated independently. In the near future, an attempt will be made to equate scores on CSAT, TAGEPS and SAT.

4. What results have been observed to this point? There has been only one administration of CSAT thus far. The test performed well in the sense that satisfactory estimates of internal consistency reliability were achieved. The coefficients for both the verbal and mathematical scores exceeded .90. Moreover, the distributions of scores were as desired, being unimodal and roughly symmetrical and bell-shaped. Satisfactory discrimination among students across a broad range of ability levels appears to have been achieved in that standard scores extended the full range from 200 to 800. What is relatively unknown at the moment is the predictive validity of CSAT. This cannot be determined satisfactorily until those students who took CSAT in 1969 complete at least their first year of university in 1970. However, some indication of validity is available for a test similar to CSAT which was administered in Ontario in 1967 and 1968. For that test, validity coefficients as high as, or higher than, .60 have been observed for some programs in some Ontario universities. The median validity coefficient across all programs in all Ontario universities was unfortunately considerably smaller, about .30. Thus, it is with an air of wary optimism that we await the initial validity results for CSAT itself.

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THE DEVELOPMENT OF EXAMINATION TECHNIQUES FOR TECHNICAL SUBJECTS

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Background

Prior to 1968 technical subjects received little attention in schools as more than ninety per cent of school leavers in Singapore schools were in the academic stream.

In 1968 the Technical Education Department was formed within the Ministry of Education to be responsible for general policy relating to technical education and industrial training and to concentrate on the problems of training to meet Singapore's anticipated shortages of craftsmen and related skilled workers for industrialisation.

By 1971, the Technical Education Department established the

(1) Successful restructuring of secondary schools system to give the required technical bias as well as a fully developed Technical Stream up to Pre University level.

(2) Channelling of secondary students into Technical Stream.

(3) System for industrial training within the Vocational Institutes.

(4) Industrial technician training programme arrived at turning out a higher calibre worker who could be further trained on the job for factory-floor supervisory functions.

At the end of 1972, the Technical Education Department had completed the groundwork for the industrial training programme of workers within industries. An Industrial Training Board would take over the responsibility for Industrial training both institution and industrial based.

On 19 February 1973, the Industrial Training Board was officially established which replaced the Technical Education Department. The reorganised technical education system within the schools under the former Technical Education Department are under the responsibility of the Ministry of Education.

Part I

Trade Testing

The Trade Testing Unit of the Examinations Division in the Ministry of Education at the outset of the reorganisation in 1968 planned a National Trade Testing Council designed to co-ordinate the work of the various Trade Testing Committees on standards for certification in the various trades.

Development of the National Trade Testing System

The Ministry is grateful for assistance given by ILO and UNESCO Advisers in the development of a system for national trade testing.

The establishment of the National Trade Testing system comprises two main areas:

(1) Preparation of Skill Analyses and National Trades Standards.

(2) Working out an Assessment System for National Trade Testing.

The Trade Testing System is the uniform national mechanism by which a candidate's skill is gauged objectively. It is, therefore, important that tests are reliable and valid. The reliability and validity constitute a sound foundation on which every test should be constructed and scored. A reliable test yields accurate and consistent results. A valid test yields accuracy with which it measures what it was designed to measure, in this case, the candidate's skill against the National Trade Standard and to distinguish between the semi skilled (Grade III), the skilled (Grade II) and the highly skilled (Grade I) candidates. In Trade Testing 2 kinds of validity are of importance: Content-Validity and Face Validity.

Content Validity

Test items must be sampled so that a test will show the actual stage of skill in the trade concerned on the basis of trade test syllabus.

Face Validity

(a) The instruction given to candidates must be adequate in order to provide them with full information and detailed job requirements.

(b) The acceptability of the marking scheme by markers in their applications.

Preparation of a Marking Scheme will consist of the following Areas:

(a) Marking criteria contain all the parameters which should be taken into account when scoring a test (e.g. trade of Turner).

---------- time taken to perform the test.
---------- quality of work.
---------- economy in the use of materials.
---------- use of materials and tools.
---------- function of work pieces.
---------- the observance of safety precautions.

(b) Basic awards and multiplication (weighting) factors

The Four-Point Scale for grading a test performance combined with a simple weighting system, has proved to be a reliable and a valid measuring instrument.

(i) Basic Award

3 points (very good performance)

2 points (good performance)

1 point (slightly below standard)

0 point (poor performance)

(ii) Weighting System will comprise the following multiplication factors

3 points (difficult test item)

2 points (test item of medium difficulty)

1 point (simple test item)

(c) Pass standard

The Pass Standard states the minimum score level which a candidate has to reach in order to pass the test.

Grade III	(semi-skilled)	60% Pass Mark
Grade II	(skilled)	60% Pass Mark
Grade I	(highly skilled)	70% Pass Mark

Objective Type Testing is far more applicable to the field of Trade Testing such as
(i) True-false,
(ii) Multiple choice,
(iii) One work answer,
(iv) Completion,
(v) Short statement (listing of facts),
(vi) Matching-type,
(vii) Trade calculation, and
(viii) Trade drawing items.

Item Bank

Constructing reliable and objective type tests are time consuming. An item bank saves time, provided the bank items are analysed and acceptable ones to the items. The card will also contain the level of difficulty and discriminate power of the items.

Practical Tests

In order to maximise the reliability of the marking procedure, markers operate in pairs. Each of the markers in a pair assesses the same candidate independently. An average mark is then taken into account for final scoring.

Preparation of National Trades Standards (Syllabuses) Testing System

The purpose of the system of National Trade Standards is to provide an objective method by which it is possible to establish measured national work performance standards and to gauge skills against these standards. The system defines each skill within the Rules and Regulations for the award of the National Trade Certificate which is nationally acceptable. The system also provides a means for discovering ineffective training areas and sets out the standards which should be achieved.

Preparation of Skill Analyses (Specification)

In the preparation of skill analyses, the Trade Testing unit has developed the following skills for

(1) Motor Vehicle Mechanic
(2) Heavy Duty Diesel Mechanic
(3) Vehicle Body Repairer
(4) Metal Fabricator
(5) Arc Welder
(6) Gas Welder
(7) Machinist Fitter
(8) Platemaker
(9) Turner
(10) Electrician
(11) Refrigeration and air conditioning mechanic
(12) Plumber/Pipe Fitter
(13) Barbender/Concretor
(14) Bricklayer/Plasterer
(15) Building Draftsman
(16) Building Carpenter
(17) Wood machinist
(18) Furniture Maker
(19) Construction Painter/Decorator
(20) Decorative Tile Setter
(21) Offset pressman
(22) Compositor
(23) Photo-engraver (Blockmaker)
(24) Letterpress Pressman
(25) Book binder.

The Trade Skill Analyses are prepared so that the National Trade Standards meet the up-to-date requirements of industry. Each skill analysis is carried out on the basis of Trade Definition and Scope of Activity. The Trade Definition is based on international classification (International Standard Classification of Occupations, published by ILO). The Trade Definition also states the technical skills that are expected. The Scope of Activity specifies the type of work expected at semi-skilled level (Grade III), Skill-level (Grade II) and highly skilled level (Grade I). The Analysis is intended to show the operations and related knowledge that a skilled worker necessarily will require when working in a specific trade for earnings.

The implementation of trade tests on a national scale from full-time Vocational Institutes students to industrial workers on the job will identify workmen of varying degree of skills. This will in turn encourage effective employment of skills which has a direct bearing on the eventual development of the national economy in sustaining high productivity. The National Trade Testing System will motivate workers to upgrade themselves. The results in trade tests will exhibit ineffective areas of training and, therefore, the gearing and adjusting of training programmes to meet national industrial requirements.

Part II

Technical Education in Schools

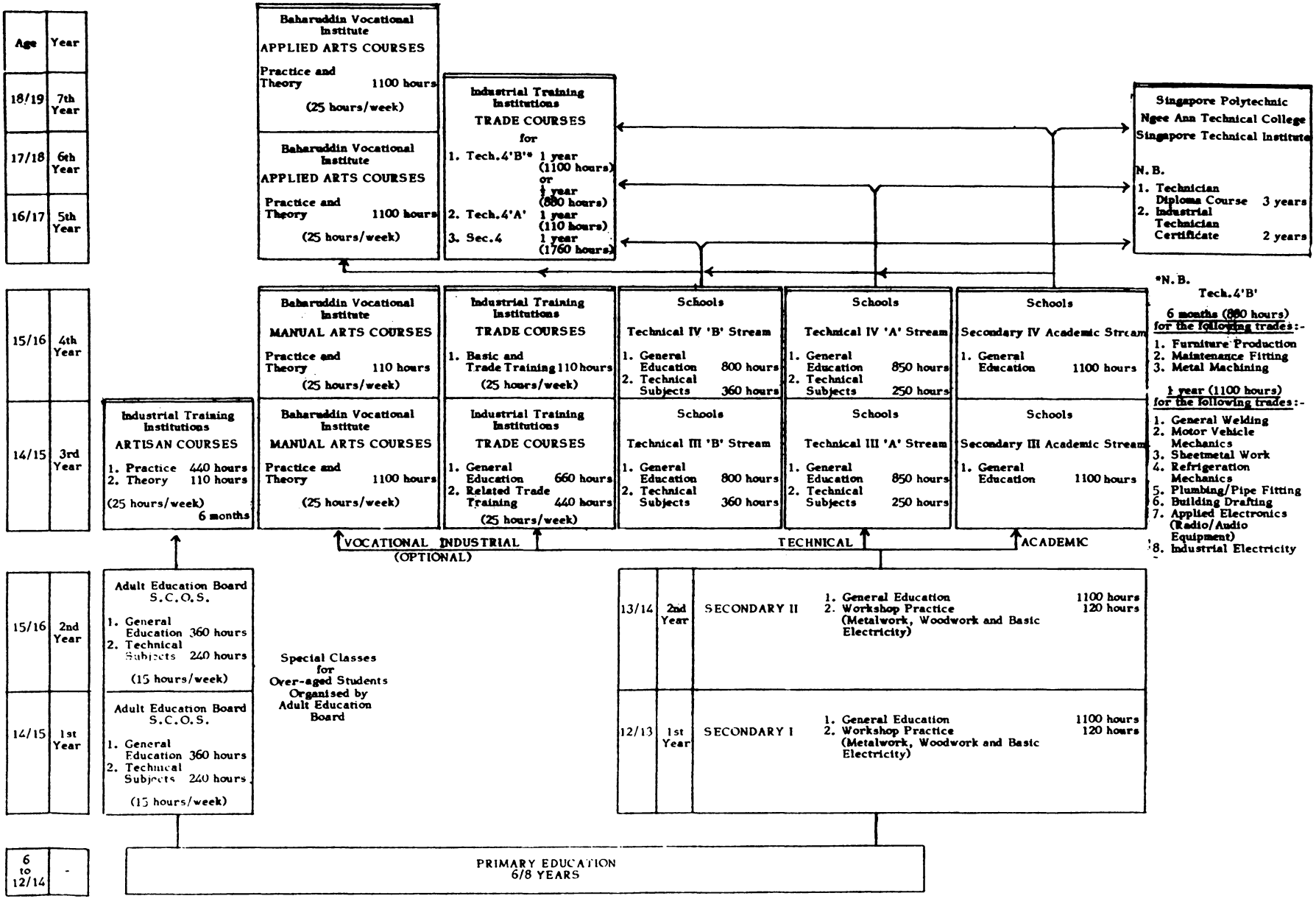
Since 1970 all male students in their first and second year of secondary education after they have completed a six year Primary Education and 50% female students are given technical workshop practice for 3 hours weekly outside school curriculum hours in Metalwork, Woodwork and Basic Electricity. All students in addition are taught Technical Drawing as a classroom subject.

A system of channelling students who completed Secondary II into the technical and academic streams for Secondary III and Secondary IV was introduced in 1970, through an aptitude test, performance in workshop subjects and the cognate group of academic subjects to assist parents in exercising their option.

In the Pre U II classes, no school candidate offered technical subjects in 1968. In 1972, 202 candidates entered technical subjects in the H.S.C. Examination in Metalwork and Geometrical and Mechanical Engineering Drawing. These subjects are given equal consideration as other subjects by the Faculty of Engineering of the University of Singapore for purposes of undergraduate admissions.

The Ministry of Education runs 8 Vocational Institutes and a hotel catering training school in the engineering, refrigeration, building, electrical and electronic, woodwork and building, metal, automotive manual and applied arts trades. Examinations are conducted at Trades and Artisan levels to produce an adequate number of skilled workers from the Vocational Institutes. Trade Tests at the Vocational Institutes are conducted to determine whether the students have attained the required level of proficiency to qualify for the award of the certification bestowed by the institutes upon completion of their courses.

EDUCATION SYSTEM OF SINGAPORE
SHOWING RELATIONSHIP BETWEEN SCHOOL EDUCATION AND INDUSTRIAL TRAINING



TESTING WITH EDUCATIONALLY DISADVANTAGED CHILDREN

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Every country has its educationally disadvantaged children, even those in which educational development is most advanced. Britain is now replacing a selective system of education by a comprehensive one in an endeavour to eliminate, or at least reduce, unequal educational opportunity. Superimposed on this task, she is now faced with the responsibility of educating an increasing number of young immigrants from other Commonwealth countries. The United States of America, despite the fact that in principle her educational system has never been other than comprehensive, has not yet achieved her avowed aim of de-segregation and the quality of education offered to some of her citizens is still inferior to that enjoyed by others.

It should not surprise us that this state of affairs exists a fortiori in countries at an earlier stage of development. In such countries, through sheer force of circumstances, education in any way comparable in quality and adequacy to that taken for granted for the majority in some advanced countries is available to only a small minority. The allotment of a large proportion of scarce resources to the more extensive education of a relatively small proportion of children is understandable. Pre-requisite to speedier progress in the future, further technical advance, increased economic development and wider educational expansion, is the production now of a necessarily small number of people possessing the knowledge, skills and dedication essential to the achievement of these aims.

It is no accident that in many of the new countries educational objectives tend increasingly to resemble those in others more fortunate in having advanced further along the path of development. According to Doob (6), the pressures forcing the new countries in the same direction are inevitable, irresistible and irreversible. This does not mean that all will arrive at the same place. A country on its way 'up' will be selective in what it absorbs and will adapt its acquisitions from elsewhere to its own traditions and needs. Nevertheless, since both less and more developed countries share a number of the same objectives, their educative processes will have much in common. At the same time, a process evolved over a lengthy period and geared to the norms of a society or culture already well developed cannot be transferred ready-made to another less so without giving rise to problems, even though the objectives are similar.

These problems are reflected in the testing procedures which are an integral part of any and every educational process. The situation previously mentioned implies that a relatively small number of pupils must be selected for secondary education from a very large primary school population. Countries where this situation exists are likely to be characterised by primary education of poor and uneven quality. Children living in towns may be more fortunate in their primary education than others living in villages.

In this case, restrictions are imposed on the interpretation of scholastic attainment test results. Though such tests may still accurately

measure a pupil's achievement in specific subjects to date, their use as prognosticators of future success is precluded or at least limited, however successful they may be in this respect with children more fortunately circumstanced. The poor performance on an arithmetic test of a pupil who has hitherto been taught arithmetic either badly or not at all is a fair index of his present ability in that subject. But as a predictor of his likely progress if this defect is remedied its value is questionable. If assessment of potential or aptitude is at issue some other means must be found.

If experience in countries more educationally advanced is anything to go by, the use of tests of verbal reasoning might seem to offer a solution. Tests in this category differ from tests of scholastic attainment in that they are less closely geared to the school curriculum; good performance on them is less dependent on exposure to the usual range of school subjects. They have been extensively used for 11+ selection in Britain, where numerous follow-up studies have consistently shown them to be among the best predictors of academic success.

However, difficulties still remain. There may be several native languages or dialects while the accepted medium of instruction in the secondary schools is a second language such as English, the pupil's acquaintance with which is limited by factors such as his primary teachers' command of it.

Bernstein's (3) work on language habits in Britain bears on this situation. He points to the relation between class structure and the varieties of English used by school children. Social stratification is related to differential availability of language codes. The lower working class child has a group-oriented 'restricted' code; the middle class child has both this and an individually-oriented 'elaborated' code. These codes differ in that the first is more fluent, repetitive and predictable, the second more hesitant, idiosyncratically planned and complex. Educationally, the child from a poor background is at a disadvantage since he finds himself having in effect to translate what he hears from his teachers. As Bernstein points out, differential difficulty in communication is likely to be reflected in differential verbal test performance.

The problem is exacerbated when the differential is not merely intra- but inter-language. It is therefore natural to consider the possibility of assessing pupils' aptitude for further stages of education by some testing procedure which avoids the use of the differentially unfamiliar second language. On the face of it, one way of doing so would be to couch the tests employed in the pupils' own native languages. This however may be difficult in practice if several languages are involved. There is the further technical difficulty of equating the performances of different children on different tests - for, let there be no mistake about it, even the same content translated into different languages produces different tests, the results of which, expressed numerically, are not necessarily comparable. Moreover, the problem of unequal primary school opportunity, and its implications for scholastic attainment, will still remain.

On all these counts, it may be thought desirable to go one step further, to eliminate the use of language so far as is practically possible, and to rely on non-verbal or non-language tests. Here, surely, it might be argued, is the way out of the difficulty. If the use of language-bound tests is seen as impracticable or leading to injustice, should not their substitution by non-language tests reduce the practical problems and promote 'fairness' for all concerned?

This is the kind of thinking behind the more general concepts of 'culture-free' and 'culture-fair' testing. The intention is wholly admirable. Any measure which will help to redress the balance in favour of children who are culturally deprived or otherwise educationally disadvantaged is surely to be encouraged. The laudable objective is to reduce these obstacles by the use of testing devices which transcend or remove cultural differences or educational inequalities.

However, the problem is by no means simple. The concept of 'culture-free' tests is highly dubious. Anastasi (1, p.256) is surely right when she says: 'No test can be truly "culture-free". Since every test measures a sample of behaviour, it will reflect factors that influence behaviour. Persons do not react in a cultural vacuum.' Wesmen (16, p.269) is even more forthright. 'I do not wish to impugn the high social motives which stimulate the search for such devices; I do wish to question that such a search, in its usual setting, is sensible. A culture-free test would presumably probe learnings which had not been affected by environment; this is sheer nonsense.' These statements represent the general view of most contemporary psychologists. Few would now regard the quest for culture-free tests as other than chimerical.

The prospect for 'culture-fair' tests is, on the face of it, less unpromising. In principle it is possible to build tests which, though not free of cultural influences, sample only behaviour common to several cultures. An alternative description of such tests is 'cross-cultural'. The amount of effort that has gone into the construction of allegedly cross-cultural tests is vast, particularly if we include also tests intended for comparisons among sub-cultures within a larger culture. Only a few can be mentioned here. In the nature of things, they are non-verbal in content. They fall into two main categories: performance tests, designed for individual administration, and in the main involving manipulation of objects; and non-verbal or non-language group tests, normally paper-and-pencil tests which do not demand of the testees the skills of reading and writing. Most such tests do however depend on oral instructions, it being assumed (perhaps too lightly) that these are of such simplicity that no semantic problems arise in their translation and that different language versions do not differ in difficulty. A few tests have been constructed in which the instructions can be mimed or demonstrated.

Examples of tests in the performance category are: Form-board (Sequin, Pintner-Paterson), Mazes (Porteous), Picture Completion (Healy), Block Manipulation (Kohs); Stencil Design (Arthur); Analogies (Leiter); and, of course, the General Performance Scale of the WISC (Wechsler). Examples from the group non-language category are the Draw-a-Man (Goodenough), Matrices (Raven), Pictorial Problems (Davies-Eells), Semantic Symbols (Rulon); and a number of tests intended to probe, using pictorial or diagrammatic material, mental functions - analogies, odd-man-out , series and the like - similar to those frequently occuring in verbal tests (Moray House Picture, Jenkins Non-Verbal, Cattell IPAT).

On closer examination, however, the prospect of producing 'culture-fair' tests is only slightly less unpromising than for tests that are 'culture-free'. By restricting test content to elements common to several cultures the relevance of the results in respect of any one of them is made questionable. To the extent that different cultures display unique features,

nurture disparate traditions and values, or foster or suppress different abilities or modes of behaviour, tests restricted in this way may miss their targets. To quote Anastasi (2, p.299) again: 'If we were to rule out cultural differentials from a test, we might thereby lower its validity against the criterion we are trying to predict'. It is as though in trying to please everybody, we succeed in pleasing nobody. Or, to change the metaphor, although the wave pattern for the fundamental tone emitted by different musical instruments is the same for all, it is the superimposed over-tones or harmonics which endow each with its peculiar timbre, its richness of quality.

The concepts of 'culture-free' and 'culture-fair' tests once received plausible support from the contemporary psychological theory. 'Native intelligence', like original sin, was reified and came to be regarded as a fixed entity rather than a developing attribute. By the exercise of sufficient inventiveness - Wesman (16) speaks of 'ingenious mining devices' - the influence of differential exposure to learning could be eliminated and the 'innate intelligence' of the individual revealed and recorded on a scale for all to see.

More recent theory is less accommodating. Hebb's (9) distinction between Intelligence A and B corresponds broadly to the geneticist's distinction between genotype and phenotype. Like the genotype, Intelligence A is not directly observable, still less measurable. Only Intelligence B, corresponding to the phenotype, can be observed; it results from the interaction of both nature and nurture. The title of a once popular song sums it up neatly:; 'It's what you do with what you've got that counts'. Vernon (14) playfully, in the first place, one suspects, but then more seriously, had added a further category. Intelligence C is what tests measure. It varies with difference in test content and is therefore not unique in the prediction it affords of Intelligence B. Hebb's theory offers but cold comfort in the search for instruments equally fair to differentially disadvantaged testees.

On the fact of it at least, the theory of 'fluid' and 'crystallised' intelligence attributable to Cattell and Horn (5) is distinctly more hopeful. They suggest that the general factor emerging from studies of batteries of disparate tests is a mixture separable into two components: G_f ('fluid' intelligence), reflecting constitutional equipment; and G_c ('crystallised' intelligence), the results of experience such as cultural and educational pressures. Unlike Intelligence A, G_f is measurable by tests tapping adaptability to situations so unfamiliar that previous learning experience is of no help. G_c, corresponding roughly to Intelligence B, is manifested in cognitive behaviour already patterned by previous experience. Even before biological maturity is reached, diversity in cultural opportunities, interests and personality traits produces substantial individual differences in G_c which, according to the theory, should not be parallelled for G_f.

This theory underlies the construction of the Cattell IPAT Culture Fair (formerly Culture Free) Intelligence Test. Predictably, the greatest success in removing 'contamination' by cultural differences is claimed for subtests involving mazes, identification of similar drawings, picture classification and symbol copying. At best, however, the success achieved is only partial. In view of the IPAT, Tannenbaum (12, p.454) concludes that 'the goal of demonstrating equality among national and international subpopulations by some measures of general ability has not been reached

by this test.' He questions whether this is a goal worth pursuing. 'Even if it were possible to devise a test so antiseptic as to clean out inequality not only among subcultures but also among other groups showing differences in test intelligence, such as those classified by sex, age, geographic origin, body type, physical health, personality structure, and family unity - what kind of instrument would we have then? Since such a test must perforce be so thoroughly doctored as to omit tasks that reveal these group differences, or substitute others that show "no difference", what could it possibly measure? What could it predict?' Vernon's (15, p.25) conclusions are equally definite. 'The main weakness in his (Cattell's) theory is the claim that fluid ability tests are largely immune to cultural influences. The skills required for reasoning with these abstract materials would appear to be built up in just the same way as those involved in verbal reasoning; and the evidence ... demonstrates at least as great variation attributable to cultural differences'.

For a very complete and up-to-date survey of this evidence, reference should be made to Vernon (15). Only some of it can be cited here. As already stated, the IPAT was found to be only partially successful in ironing out cultural differences. Although in cultures similar to that in which the test was developed the same norms were approximately applicable, this was not so for cultures more dissimilar; for these, average performance was often much lower. Bernstein (4) reports smaller differences in performance on Raven's Matrices between middle and working class groups than on tests of verbal reasoning. But in other studies, particularly in African countries, test results were positively correlated with amount of education. The Goodenough Draw-a-Man (8) test has gone through several revisions. After extensive use with a number of different cultural and ethnic groups, its authors have abandoned their original optimistic view and in their more recent reports have concluded that a culture-fair test of whatever attribute 'is illusory'.

The Davis-Eeels Games (7) were specially designed for American use to be relatively independent of social class bias. But differential educational disadvantage was still reflected in differential performance on these tests no less than on more conventional intelligence tests which were in addition more predictively valid in respect of tested achievement and teachers' assessments.

One of the most interesting and definitive studies in this area is that conducted by Ortar (10). She administered both a Hebrew version of the WISC Verbal Scale and also the Performance Scale to upwards of 1000 Israeli children. These were divided into five groups with different cultural backgrounds ranging from recently arrived Oriental immigrants to an Israel-born 'high status' group (mainly of European parentage). After re-standardising both Scales for Israeli children, she found the 'cultural distances' between the groups to be larger on the Performance than on the Verbal Scale. In a similar study conducted with Scottish children Tsakalos (13) found differences in social status to be reflected in differential performance on the Jenkins non-verbal test no less than on Moray House tests of verbal reasoning and scholastic attainment.

The conclusion is inescapable that it is fruitless to search for testing instruments that will somehow transcend cultural differences and educational inequalities. What are the implications?

In the first place, it must be recognised that belief in the essential

equality of man receives little support from the considerable research in this area which it has stimulated. It remains an act of faith. This need not deter us from acting on that belief. A warrant from psychologists qua psychologists is not essential to the maintainance of a fundamental principle on which the advance of civilisation is predicted.

Secondly, it has to be accepted that educational disadvantage is endemic and that there is no simple counter to it by way of tests purporting to reveal intelligence, talent, potential, or whatever we may choose to call it, irrespective of differences in cultural, social or educational background. Such tests are of dubious value to a primary school teacher in Britain faced with an influx into her class of immigrant children without a word of English among them. There is no simple way of helping her to differentiate among them, or between them and their native-born peers, in terms of 'basic' intelligence. Her best practical policy still is to do all she can to make them feel welcome and to teach them English. Likewise, such tests offer no panacea to a developing country where, because of scarce resources, stringent selection is necessary and too many children are chasing too few places in the educational sun. The brutal truth must be faced that there are plenty of other children whose claim for preferment is no worse than that of the fortunate few selected. The solution to the problem is economic, not psychometric.

From an educational stand-point, the best hope of advance in general and amelioration of educational disadvantage in particular, lies in the field of language-teaching. The mother-tongue may suffice if it provides for effective communication with other nationals and is suitable as a medium for advanced education. If not, a second language is necessary, taught, as Vernon points out, not peripherally, but as a central tool of comprehension and thought.

What then should be the role of the psychologist? There is no reason why it should change materially, though possibly a shift of emphasis is indicated. Any still engaged in the search for testing instruments equally 'fair' in different cultures should bear in mind the fruitless quest of the alchemists for the philosopher's stone; though they may console themselves by reflecting that (in a different sense from the original alchemists') the transmutation of metals has now been accomplished. There is a lesson here. That achievement was the outcome of 'pure' research not specifically aimed at transmutation, nor concerned with its consequences. So too with the psychologist. He should listen to Anastasi's (2, p.302) warning: 'It is not (the psychologists') role to provide ready-made solutions to insoluble problems. It might be salutory if testing gave less heed to the pull of practical needs and more to the thrust of behavioural sciences'.

But less heed is not the same as no heed at all. The psychologist, like the physicist, has responsibilities outside his laboratory. Despite all that has been said, he has yet much to give in the field of testing in the service of education. It is a truism that the best indicator of a child's learning potential is a test sampling previous learnings which are relevant to the criterion or criteria we wish to predict. For long enough this maxim has guided with reasonable success the construction of tests for educational purposes within western cultures. There is still room for further research of the kind that Schwarz (11) has engaged in, aimed at discovering the previous relevant learnings in cultures elsewhere in a stage of transition.

Let Vernon (15, p.229) have the last word. 'What is important is that in concentrating on abilities recognised by western cultures, psychologists should not neglect special talents that might be more highly developed in other countries'. To extend a metaphor employed earlier, in seeking out these special talents we may be taking a small but useful step towards the assembly of a cross-cultural orchestra.

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TESTS AND MEASUREMENT PROCEDURES, REVIEW AND EVALUATION.*

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PART I

TESTS AND MEASUREMENT PROCEDURES:

To a considerable extent modern education is characterised by the emphasis it places on adapting the educational programme to the needs of the individual child. Since these needs are governed by the child's level of ability and by the degree to which he has mastered the educational contents to which he has previously been exposed, it is important to determine these factors as accurately as possible. Once this information has been obtained, much can be done to individualize the educational process for each child, in part by grouping children into homogeneous instructional groups and in part by differentiating instruction within the classroom. It follows then that accurate educational measurement is a prime and key factor in modern educational trends.(1)

So if in modern education the emphasis is on teaching the individual it follows that we must have knowledge of, and differentiate between, individuals. Knowing the individual requires evaluating and testing. At the same time everywhere in the world the role of testing and evaluation in education is being questioned, criticized and scrutinized as never before.

Now before one goes further into the subject a definition or two should be made. The first is that Educational Evaluation is much broader than "testing". Educational Evaluation uses a variety of methods to measure and assess. These include questionnaires, surveys, cumulative records, projects, class work, oral answers, role playing and so on. Secondly the tools of educational evaluation are not a precise measure as are the tools of the engineer and physical scientist. In education one is trying to measure aptitudes, or intelligence, or content and processes - all very intangible and very difficult to assess. So it must be taken as a premise that the best of tests, under the best of conditions, provides large factors of error. When conditions (the training of personnel, administration and the tests themselves) are not ideal, results are even less reliable and less meaningful.

Testing had a traditional and fixed role for many years. It marked the end of one phase and the beginning of another. It meant passing out of one grade and into another. Successful completion of examinations allowed one to enter a profession, such as medicine. This type of testing has something in common with the initiation ceremonies characteristic of many non-Western societies and of various secret or exclusive groups within Western society. The examination or the initiation ceremony is a more or less

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(1) Test Service Notebook - Test Bulletin, Harcourt Brace and World Inc.

* Originally included in the documentation for the Commonwealth Conference on Education in Rural Areas, held at the University of Ghana, Legon, Accra, Ghana, 23 March to 2 April 1970.

difficult procedure; if the examinee reaches a certain level of performance, a level agreed upon by the elders of the society, then his status becomes altered and he becomes permitted to practice as a doctor: the high school leaver is enabled to seek employment. The characteristic of this type of examination is that it marks the end of one phase in the person's life, and it demonstrates that he is competent to enter a new phase. It is perhaps worth making another distinction between (a) the terminal examination in a particular vocation, which is intended as one indicator of the individual's competence (and the examination should not be the only indication which is used), and (b) the final examination at the end of a non-vocational course. The former should ensure that society is not plagued with incompetent doctors and other professionals, but the latter has a less clear social raison-d'etre, and would appear to be a potent agent in the development of a society in which every adult's status is determined by his scores on tests taken during his adolescence.

The second reason advanced for examining is as part of a continuous process of education, a method by which the teacher assesses what each student has and has not learned. This use of examinations has been going on for many years and it might seem hardly to deserve comment, - but the present renewed interest in "Measurement and Evaluation" seems to stem from a more precise analysis of the assessment process than used to be practised.

In modern education this first type of testing plays a less and less important role. Testing now is seen as one type of evaluative procedure and only a part of the overall educational process. There was a period recently when some advanced countries had an almost religious faith in tests, whether they were tests of aptitude, ability, achievement or intelligence. Test results were felt to provide final, definite, and reliable answers to many questions. In another, earlier, period educators ignored and discounted tests and their results as useless. It was felt that one could not measure "intelligence" and other "intangible" processes of man.

Today a middle-of-the-road approach which avoids either of the above extremes is gradually emerging. Educators are realising that tests are far from useless, and yet far from providing all absolute answers. It is realised that tests are only one factor, one piece of information which becomes valuable when combined with school marks, common-sense evaluations of teachers and a multitude of other data, some scientific, some less so. Also it must be kept in mind that measurements are only tools, a means to an end, and not an end in itself. We do not weigh or measure an article just for the sake of knowing how heavy or how long it is. We use this knowledge in some way. So it is with testing - there must be some definite purpose in the testing we do. Are the tests simply to measure achievement? Are they diagnostic tests only, to be used to diagnose teaching weaknesses and learning difficulties? Are the tests to measure a person's potential for academic or other fields, his capacity or aptitude? Do the tests try to measure interest, attitude, intelligence or personality? There are instruments available today which attempt each of these, or some combinations of these, and so the purpose must be clear from the start.

Generally the types of tests listed above are Standardized Tests - tests built by experts over long periods of time and with carefully selected norms and so on. However, both these and teacher-constructed tests have a role or purpose in the classroom. What are some of the purposes of classroom testing?

Let us examine some of the purposes and uses of such testing (this applies whether the tests are "teacher constructed" or "standardized"):

(1) To test pupils' achievement. This is probably the most common purpose of testing. The teacher should have constant feed-back on how well the skills taught have been mastered and how well the concepts and understandings can be applied. However, the diagnostic aspects of achievement tests should not be overlooked at any time.

(2) To assess the effectiveness of instruction. Educators are so prone to say, when looking at the results of a test, that the pupils have done "well" or "poorly". Frequently the results of a test are more an indication of how well the teaching has been done. If the results of a test show weaknesses, the teacher has the opportunity to re-teach, change the method of approach, or seek for other methods of increasing the effectiveness of instruction.

(3) To motivate pupils to improve in their work. Test results will encourage most pupils to put forth their best efforts. A word of caution is in order here. Every class has pupils of varying abilities. We do not expect all of them to run at the same pace when they are racing. In the same way it would be wrong to expect all pupils, the bright and slow ones, to achieve the same standards on a test. It would be wrong, therefore, to compare the mark of a pupil with lower ability with that of a pupil with higher ability. It is sound, however, to stimulate pupils to improve their own marks on successive tests rather than comparing them with the brightest pupils.

(4) To discover individual problems and weaknesses. The test results will identify pupils who have particular problems and the teacher then has the opportunity to provide individual help and instruction to such pupils.

(5) To provide a sound basis for keeping parents informed regarding pupils' progress. Parents are usually interested in knowing how their children are performing. If full records of test results are kept by the teacher, these form a good basis of communicating pupil progress to the parents.

(6) To locate or identify weak areas in the teaching-learning situation. If test results are analysed carefully "gaps" or weaknesses may be discovered and necessary steps taken to deal with them. Methods of doing this are mentioned later.

(7) To gain information for grouping pupils for instructional purposes. It has already been mentioned that pupils within a class vary greatly in their innate ability to learn. The slower pupils require simpler explanations and more instruction and drill. This frequently becomes boring to the brighter ones and causes them to lose interest. Test results would indicate which pupils might be grouped to provide the most suitable instruction.

(8) To gain knowledge about individual pupils for guidance purposes. If full records of test results are kept pupils' strengths and weaknesses as well as their special interests will be discovered. This information can be used in guiding pupils to make proper choices when they go on to further education or when choosing a vocation.

The above suggestions apply particularly to teacher-made classroom tests. Standardized Tests that are prepared for a wider use, such as throughout a school system or country, would serve other purposes as well. Such tests should provide even more help and information to teachers, parents, administrators, curriculum makers and educational planners and policy makers. This additional information would help:

(1) to evaluate courses or syllabuses for the purposes of revision, etc.;

(2) to compare different methods of instruction and assess teaching methods;

(3) to ascertain standards of classes within a school, a district, a region or the country as a whole;

(4) to assess the work of individual teachers;

(5) to assess pupils and recognise the individual characteristics of each pupil (we should know: (i) his difficulties and weaknesses
(ii) his strength and present knowledge);

(6) to provide a means for pupil and teacher review, an integral aspect of learning;

(7) to provide information for educational planning and policy making.

SOME OTHER GUIDELINES

It is worth emphasizing that testing should be done only when we know how and by whom the results will be used. Of all the functions for which tests may be used, the least valuable function educationally a test can perform is when it is used only by administrators and only in passing, failing, admitting or screening students. Yet examinations with this function alone are still quite common. The most valuable function of tests is in helping the pupil and teacher communicate, and derive benefits from the learning process. In addition tests should be constructed with a clear knowledge of all their educational objectives and should be critically evaluated to see whether they are valid (measure what they are supposed to measure) and are reliable (consistently measure the same thing in the same way). The interpretation of course must be logical, attributing no more, or less, to a particular result than it deserves.

It is worth noting also that if testing and evaluation are to become an integral part of the educational system, teachers must know something about the field. Generally today teachers learn how to demonstrate, explain and put a point across. But little or nothing is given them on how to evaluate

get feedback and measure what changes have taken place in the pupil. And yet to be truly effective a teacher must know (a) what the pupil has already; (b) what he has failed to learn and, if possible, why; (c) what the pupil is capable of learning.

There are, then, certain problems and pre-conditions to good testing that must be attacked simultaneously with any attempt to enlarge the role of evaluation in schools. These include:

(1) A FOUNDATION OF TEACHER TRAINING in the understanding, interpretation and use of tests. Programmes must be developed to improve this in the colleges and through in-service training. A basic record-keeping system (cumulative records) is needed together with teachers who can use it properly.

(2) DEFINED OBJECTIVES. Good evaluation programmes can help to show how far the school programme meets the objectives of education. This presupposes that there are measureable objectives set forth for general education as a whole and also detailed objectives for each subject. It is only against some objectives, however simple, that one can evaluate.

(3) OTHER GENERAL PROBLEMS TO TEST DEVELOPMENT IN A DEVELOPING COUNTRY.

(a) Difficulty with control groups due to seemingly high turnover among pupils and teachers, very different levels of teacher training, lack of records of ages and other data etc.

(b) Lack of pupil and teacher familiarity with the notion of (i) carefully timed tests (ii) objective tests.

(c) Greater differences than in developed countries between urban and rural cultural factors.

(d) Administration problems (developing the effective machinery necessary).

(e) Language problems. Literature and other evidence suggests that any standardized test meant to measure "anything". In countries where English is not the first language it will, in fact, measure largely facility with the English language.

THE INFLUENCE OF TESTS

In a modern technological world there is bound to be a great concern with accurate measurement. Scientists can calculate an exact point and time for a moon landing 240,000 miles away. It is inevitable, then, that this desire to evaluate accurately should spill over into education. And, as is pointed out elsewhere in this paper, the two extremes (a) of attributing too much, and (b) too little, significance to the role and value of testing, both exist.

One author says "Measurement touches upon and influences every phase of education. Whether it is marking, promotion, guidance and

counselling, curriculum development, instruction or some other aspect of the work, measurement plays an important part."(2) Examinations and marks can be called the currency of education. By these marks, or value assigned, people are passed, granted certificates, promoted, given degrees and so on. We often judge a man's worth by his academic percentages!

There is general agreement then that testing can and does have a profound effect on the educational system of a country. The methods of teaching, the emphasis in the curriculum, the attitude of teachers and students, are all affected or sometimes dominated by the examinations. The types of things stressed in examinations largely determine what happens in the classroom. It matters little what teaching notes or syllabuses are prepared unless the examinations reflect the same spirit and aims. This is especially true where there are large scale and important external examinations.

EXAMINATIONS

Although examinations should measure what is being taught in the classroom, it is very easy for the situation to develop where we teach what is tested rather than test what is taught. Curriculum development and examinations cannot be separated and should be developed in close harmony at all points. Persons sitting on Curriculum Panels or Examination Panels should both be familiar with the general national aims and objectives of education as well as the specific spirit and aims of a given sullabus.

All this does not mean that examinations are the only determining factor in education nor is this a criticism of external examinations. The important thing is that these things should be in the right order and priority; tests should serve the educational goals and needs, not determine them.

The author recently sat on a committee the members of which were drawn from the Ghana Ministry of Education and the West African Examinations Council. A paper produced as a result of these meetings had in part this comment on examinations:

"In spite of inherent weaknesses external examinations are useful and necessary in many situations. In Ghana, for instance, some common measure is needed to provide objective norms and maintain a common standard owing to great disparities in:

i) staff;

ii) training facilities;

iii) libraries and supply of textbooks, etc."

The point here, then, is not to weigh the advantages and disadvantages of external examinations not to debate how much external examinations can affect classroom practice, for such argument or debate has limited value.

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(2) V.H. Holl, Introduction to Educational Measurement, Haughton Mifflin Co., Boston, 1965.

INTEGRATING EXAMINATIONS AND CURRICULUM

The important thing, then, is to recognise

(1) that there is interaction between examinations and curriculum;

(2) that examinations are not simply passive instruments of assessment but an integral and vital part of the educational process;

(3) that both examinations and curriculum are important and powerful forces for change;

(4) that both form part and parcel of the educational process; and

(5) that both should be under constant review in terms of relevance to changing needs.

The central problem - which must be true of every educational system - is to find the most effective ways of ensuring that curriculum planning and examinations complement each other and work towards the same end. In other words, what should be done is to make sure that the examinations used (a) reflect the same goals (b) promote the same spirit, objectives, emphasis and priorities that the curriculum planners had in mind. Without the proper integration with curriculum, a tester starting from the same written syllabus could build several examinations, each one providing a different emphasis and different educational objectives and goals. It is for these reasons that the contacts between curriculum builders and the examiners must be continuous, and at all stages of development.

DEFINING OBJECTIVES

To establish contact between curriculum planners and examiners it is essential that the objectives and goals of education, both general and specific, should be clearly defined and clearly set out. Without clear direction as to the goals and objectives in education it can follow that there can be the situation where the main emphasis will be teaching what is tested rather than testing what is taught. Examinations can either lead or follow in education. When examinations become the key determiners of curriculum and education, it is usually by default, because the curriculum planners and syllabus writers have not been clear enough in their directions and objectives. Similarly if objectives are clearly defined but examiners are not properly informed about these and cannot translate them into the examination material the same unhappy situation may occur.

In order to meet today's needs, curriculum panels or testing panels must be conversant with:

(1) modern testing ideas;

(2) general aims and objectives of education for the country;

(3) the desirable objectives, spirit, and emphasis for that particular syllabus or subject.

CONCLUSIONS

Curriculum and examinations are two sides of the same coin and it is only when they operate together that the goals and objectives of education can be adequately reached.

The pre-requisites, then, are:

(1) that curriculum makers must build into the original curriculum evaluation and testing goals and objectives, and

(2) see to it that they reach the examiners who actually make up the tests;

(3) that the examiners (i.e. the examining body) must keep themselves fully informed at all stages of curriculum planning and defining objectives, and

(4) become conscious of the spirit, aims and implications of the written syllabus;

(5) that both curriculum planners and examiners, working as a team, appreciate where they are leading and heading from the earliest stages in terms of what will be measured and how.

PART II

REVIEW AND EVALUATION:

As indicated in Part 1, the focus today in progressive education is on individualizing education, focussing on the individual. This means getting to know the pupil. Knowing the pupil in turn requires a number of practices including the necessity of measuring and evaluating each pupil in order to recognize individual differences. Hopefully the day of considering examinations as something separate and apart in education is over. The curriculum, the teaching and learning process and test and evaluation procedures should all be part and parcel of one complete and integrated process. Evaluation procedures turn education from a teacher-to-pupil 'monologue' into an effective 'dialogue' and communication. Continuous evaluation makes the process truly fruitful and meaningful.

Two main reasons have been given earlier for having examinations: the first is the need to provide evidence of an individual's competence to move from one social status to another; the second is to provide, as part of a continuous process of education, a method by which the teacher can assess what each student has and has not learned.

An analogy to educational assessment could be the study of cybernetics, a comparatively new science which is concerned with the behaviour of control systems in the physical and biological worlds. Perhaps the basic law of this science is that goal-seeking systems are error-actuated. What does this mean? Here is an example: a missile which "homes" on a target does not, in fact, go straight to it. Its course is constantly changing and its direction is modified in accordance with "feedback" information about its errors. The missile receives feedback which tells it how it is off target, and it then makes appropriate compensatory movements, though it can never be said to be exactly "on target". The same process can be recognised in

many human goal-seeking activities, and it seems directly applicable to the educational process. The teacher can apply this process consciously if he draws up a list of objectives which he hopes to achieve (he hopes to effect certain changes in his students as a result of the course he is teaching) and then by frequently evaluating his pupils' progress. He then has the feedback information which is necessary to reduce the errors inherent in progress towards any goal.

Most control systems have an optimum frequency for receiving feedback, they will swerve this way and that in their progress towards their target, but if they receive feedback too frequently, they may be unable to process the data at sufficient speed. (e.g. the feeling when one set of essays is due for collection before you have finished marking the previous set?) So the first question is: How frequently should one obtain such information? As we shall see later the answer is, as often as possible, in fact, continuously (but systematically).

It is a common occurrence to find the classroom teacher most surprised at the results of a testing programme. Assuming the test is a good and valid one, it shows how often teachers know little or nothing about the progress and capabilities of individuals, or indeed of even a whole class. Perhaps the most vital point in sound educational evaluation is the fact that to be effective evaluation must be both diverse and continuous. Part 1 of this paper, on the role of testing, emphasizes that tests are not precise instruments and that even the best of tests under the best conditions leaves large margins for error. For the sake of accuracy and reliability alone, evaluation must be continuous and not just a periodic event for selection or admission. However, as has been pointed out already, testing should be the other side of the educational coin, the means whereby communication and feedback to the educators is established. So, in order that evaluation procedures may provide accurate information to (1) pupil, (2) teacher, (3) parent and (4) administrator, and in order that evaluation may become an integral and useful part of the educational process, it must be continuous.

As a periodic event applied at certain times for screening and selecting pupils, testing has a limited educational function. And this is mainly an administrative function since it allows those in charge to pick people, pass and fail people, and assign a certificate or value to the person in question. It has limited educational value because it does not necessarily help the teacher to teach better, or the pupil to learn more effectively, which is, after all, the core of the educational process. Evaluation taken in the many forms discussed later, and used for diagnostic and remedial purposes on a day-to-day basis is the type of evaluation which really is a valuable part of the teaching-learning process. In this sense, written tests, oral questioning, quizzes, projects, reports, classwork, homework, etc., etc., are all considered as evaluative measures. Records are kept and results are analysed first in the classroom to help the teacher teach better and pupil to learn better, and secondly in the larger area of planning, curriculum, etc.

This is not really something dramatically new. It simply involves a consciousness on the part of teacher and other educators of the need for constant feedback and communication from the pupil. It shows a mature realization of the weaknesses and deficiencies of any one test or group of tests. It simply means a greater emphasis on gaining more and better information about the pupil and what is happening in the classroom and then using this in the next stages. It also involves a recognition of the importance of individual differences and the realization that to know pupils well and

accurately, we must assess (1) very frequently and (2) in as many ways as possible. It means that the focus is taken off the class as a single entity which must absorb a certain amount of material and be able to regurgitate this in an examination. Instead, education with evaluation as an integral part focusses on:

(1) developing the full potential of each individual to his or her capacity;

(2) seeing education as a dialogue between the teacher and the learner, where both, communicating effectively and constantly, 'grow' together;

(3) providing more accurate information as a result of continuous, diverse, and multi-faceted evaluation to all the people who need it - first of all the teacher and pupil, secondly parents, thirdly curriculum builders, planners and administrators.

But to be successful, a wide-scale use of testing and evaluation as a continuous element in the schools requires certain basics and pre-requisites. The main one is in the training of the teachers both in training institutions and through in-service work. Before testing can play the role described above, an understanding of some testing theory along with enough technical knowledge to understand, use and interpret tests and evaluation procedures must be basic to all education officers and teachers. They must be able to make effective use of objective as well as essay questions and to be able to use all the other evaluation techniques. In the field of objective tests they should have a practical classroom knowledge about the construction and interpretations of the various types of objective tests such as multiple choice, fill-in blanks, true-false, matching and so on. In addition a "guidance approach" to the child and test results and cumulative records should be a part of the teacher's equipment.

It should be emphasized as well that testing and evaluation does not mean only large scale sophisticated standardized tests. Widespread use of classroom testing combined with effective records and use of results, could provide much of the evaluation data now lacking. "Measurement devices and techniques prepared by the teacher are often the best and sometimes the only means of determining how well a class or individual pupils are progressing towards the objectives of instruction."(3)

But in such continuous classroom testing the teacher must develop a certain level of sophistication. For instance, the ability to analyse test results (do a simple item analysis) can add a great deal to the teacher's knowledge of the effectiveness of his teaching and the extent of the learning. It is also a powerful tool for test improvement. Item analysis also indicates which items are too easy or too difficult to discriminate between better and poorer examinees and it can be done simply and with little loss of time in the classroom. Then, too, teachers must understand validity in testing - that is, that the test measures what it is supposed to measure.

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(3) Victor H. Holl, Introduction to Educational Measurement, Haughton Mifflin & Co. Boston, 1965.

The classroom teacher who has a sound knowledge of testing and who has available cumulative test records is in a far better position to understand the learning problems and difficulties of individual children. He is able to identify the most capable youngsters, who need enriched learning experiences, as well as the slow learners who may need special help and modified assignments. The slow learner who achieves less because he is slow mentally is a perfectly normal child; he should in no sense be considered a failure simply because he does not reach the average level of achievement of children of his own age or grade. On the other hand, the child with high ability who does mediocre work, is, in a truer sense of the word, a school learning problem. The concept of failure in school is one with which we could very easily dispense since it is never possible to determine with certainty who is failing - it may be the school quite as much as the child.

lt should be stated emphatically that standardized testing here is no complete substitute for an effective evaluation programme on the part of the classroom teacher. Such an evaluation programme includes the teacher's own locally constructed tests as well as ratings on specially assigned projects and daily classroom recitations. Nevertheless, the professional technicians who develop standardized tests can offer the classroom teacher many suggestions for evaluating the results of classroom instruction. Indeed, much in-service training is needed in this important area.

At several points it has been mentioned that evaluation must (1) be continuous (2) employ a wide variety of evaluative procedures. What are some of these ways of evaluating? Here is a list of some of the many common-sense methods for diverse and multi-faceted evaluation:

(1) Tests - there are many types including:

  (a) Achievement:

    (i) informal teacher-made

    (ii) standardized

  (b) Mental ability

  (c) Personality

  (d) Aptitude

  (e) Interest;

(2) Rating scales;

(3) Checklists, surveys, inventories and questionnaires;

(4) Observation;

(5) Records and reports:

  (a) cumulative folders,

  (b) anecdotal reports,

  (c) diaries and logs;

(6) Interview;

(7) Sociometry;

(8) Role-playing:

(a) sociodrama,

(b) psychodrama;

(9) Situational or performance tests;

(10) Student papers and projects:

(a) papers,

(b) notebooks,

(c) reports,

(d) autobiographies,

(e) personal data sheets;

(11) Case studies;

(12) Case conferences.

Tests must measure all the important outcomes of instruction such as course objectives, factual knowledge, understanding of human nature, the proper weight for each topic and so on. Benjamin Bloom(4) in his taxonomy lists six main objectives or outcomes of learning in the cognitive domain that should be measured. These include:

(a) Knowledge of specifics, ways and means of dealing with specific universals, abstraction from specifics;

(b) Comprehension, involving abstraction, interpretation, extrapolation of communication;

(c) Application of knowledge;

(d) Analysis of elements, relative principles;

(e) Synthesis;

(f) Evaluation.

Before continuous evaluation becomes a full and integral element in education there must be clearly defined educational objectives. Good evaluation shows how far school progress meets the objectives set out. These must be clear both to the policy makers, examination bodies and teachers. Unless these are clarified, testing cannot play its proper role.

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(4) Bloom, B.S. (ed) - Taxonomy of Educational Objectives, Handbook 1: Cognitive Domain, David McKay & Co., Inc., New York, 1956.

Then too in newly developing countries there are other problems which often require close attention before testing can be effective; these include:

(a) Keeping records. Records of pupils' ages are basic to many kinds of testing. Continuous evaluation is only useful when a cumulative record of each individual is kept and used.

(b) Both teachers and pupils must become familiar and at ease with such things as objective tests, the concept of "time tests" where every minute counts, and so on.

(c) Often in such countries there is a less settled population of teachers and pupils, both of whom move about and leave schools frequently. This makes for difficulties in establishing norms, control groups and experimental groups.

In newly developing countries differences between urban and rural groups tend to be bigger. Urban groups quickly become sophisticated in a variety of aspects and ideas while rural pupils remain almost totally unaffected. Language problems, administrative problems and others must all be tackled in a special way for rural areas.

It was mentioned earlier that in addition to evaluation being continuous it must include a wide variety of techniques and methods. In testing, we are measuring people and their responses and knowledge and not bricks or bridges. Physical things can be measured accurately and completely with a ruler or scale. Because of the complexity of man and the complexity of the facets we wish to measure, there is more chance of accurate assessment if a variety of techniques are used and used often. And by accumulating and combining results, we are more likely to measure accurately the many processes and facets that we see as the goals of education.

In summary, then, worthwhile testing should meet a number of criteria and requirements. An attempt is made overleaf to include the key elements in a graphic form:

GOOD WORTHWHILE TESTING

Proper Administration

Timing, testing conditions, uniformity, etc., are all properly done.

Good Sampling, Clear Objectives

Questions measure different aspects and levels (Bloom) - valid and reliable tests - the tests measure all the objectives of education and measure it always in the same way.

Continuous Evaluation

A variety of types of ways of testing are used continually as an integral part of the teaching and learning process. Testing must be continuous:

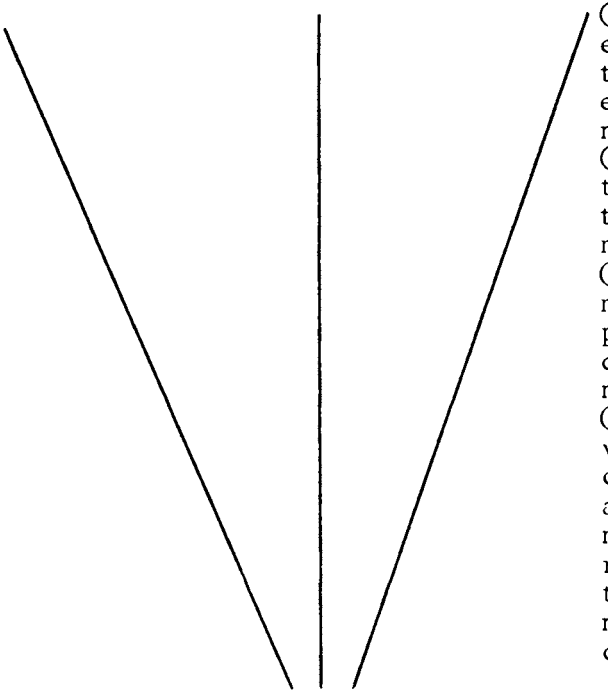
(1) to provide communication and dialogue between teacher and pupil;

(2) to make evaluation an effective teaching and learning tool by providing pupils and educators with feedback information on what is happening;

(3) to allow pupil and teacher to assess progress, assess their work and make adjustments;

(4) to provide up-to-date information to teachers, pupils, parents, administrators, curriculum builders and policy makers;

(5) to compensate for the inherent weaknesses in the results of any one test. The average results of a great many (continuous) assignments are much more valid, reliable, accurate and meaningful than the results of any one or two major tests however carefully constructed.



PROPER USE OF TESTS

Interpretation

Test results are interpreted for what they are. No more or less evidence or value is attached to them than they deserve. Test results are not regarded as "god-like" nor as "useless". They are given their proper due and right and used as one piece of information along with all other information available.

Well used information

A truly useful test provides information to all of:

1) pupils
2) teachers
3) administrators and inspectors
4) parents
5) school curriculum builders and policy makers.

Variety of Technique

Evaluation must take a variety of forms and include as many different kinds of evaluative techniques as possible. These should range from carefully constructed standardized terms to common-sense evaluative observations and ratings of teachers. This is because

1) we are assessing complex human beings;

2) the qualities being measured are tangible, abstract and difficult to measure;

3) more kinds of measurements taken more often ensure more accuracy, reliability and validity.

Part I of this paper presented some points to stimulate discussion on the topic of the nature, place and influence of tests and measurement procedures including examinations; Part II has focussed on continuous review and evaluation. As was pointed out in the opening statements of Part I, the author feels that the two topics are indeed only one. Evaluation is a continuous and integral part of education. The frequent repetition in Part II of points from Part I are meant to emphasize this point.

However, for organizational purposes, the paper was divided into two parts. It is hoped, however, that the overlapping and repetitions of similar points in the two parts may lead to a line of thinking that combines the two ideas.

This marks the end then of a few brief ideas in the field of measurement. Not all points are covered, nor are those that are mentioned covered adequately or completely. However, hopefully, enough has been said to provide the raw material so that discussion can whittle away the rough edges and produce a refined and finished product on this important and contraversial subject. Perhaps because of its deficiencies, this paper will serve the better to stimulate discussion, which is, after all, its purpose.

PUBLIC EXAMINATIONS AND THE CURRICULUM

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Public examinations play a vital role in the educational systems of many countries. The degree of their dominance over the educational system may vary as between advanced and developing countries, but the fact remains that they have come to stay in many systems. In India, an examination of this kind is usually taken at the end of ten or eleven years of schooling. Some States provide for a common examination at the end of seven or eight years of schooling. The examinations are conducted by State Boards of Education for each State in India and by the Central Board of Secondary Education for such schools as follow all-India course of studies. Sometimes more than a lakh of students take an examination. It is altogether an elaborate and involved process.

Owing to historical reasons, the public examinations in India came to dominate the educational system. In the middle of the nineteenth century, universities were established in India 'to ascertain by means of examinations the proficiency acquired by candidates and to provide a test of eligibility for Government service'. Thus, to succeed in examinations meant job opportunities. A thirst for education on a mass scale was evident in the initial phases of our educational development arising from the close connection between obtaining a certain standard in examination and getting good job opportunities. Examinations obtained a unique responsibility in society. They denoted excellence and were a passport for entry into the realm of lucrative careers. Examinations thus became the all-important motivating factor in education and relegated the true purpose of education to the background. As time passed by, not only was the true aim of education lost sight of, but also the true purpose of examinations. The purpose of examinations is, without a doubt, to reveal what progress the pupils have made, whether a desire has been instilled into them to continue to learn, and whether they have developed the capacity to reflect, enquire, investigate and draw conclusions. Indeed, examinations should serve the purpose of education. To do so, their techniques should be subject to constant evaluation and reform. Rigid, formal assessments should give place to internal assessment.

During the last three decades there has been a growing concern all over the world about the dominance of public examinations over the educational system. The question whether the entire system of examinations should not be abolished has also engaged the attention of the educationalists. In India, several Commissions expressed dissatisfaction with the examinations system. They found that the public examinations merely sought to measure the level of achievement of a pupil at a given moment of time. Their evaluation did not embrace the whole personality of the pupil. Even within their limited sphere, they were unreliable owing to their defective mechanism. But academically speaking, some sort of evaluation is necessary to ascertain whether the growth sought through formal education has been in the right direction and if so, to what extent. It was this view which was at the back of the 'National Policy on Education' issued by the Government of India in 1968, which laid down 'A major goal of examination reform should be to improve the reliability and validity of examinations and to make evaluation a continuous process aimed at helping the student to improve his level of achievement rather than at certifying the quality of his performance at a given moment of time'. It follows from this that in order to rid the traditional system of too much dependence on public examinations alone, it is vital that a two pronged attack is made. The first is changes in the evaluation techniques and reforms in the curriculum.

Taking note of the limitations of the public examination system, the Central Advisory Board of Education in India has recently set up an Examination Reforms Committee, which has produced a well-considered report. Among the reforms it has suggested is permitting a system of 'autonomous schools'. It recommended that some of our best schools which have a good tradition should be identified and freed from the restrictions of the public examination and allowed to examine their own pupils. If this recommendation is carried out, it will open the way for experimentation not only in the system of examination, but also in the methodology of teaching and learning in curricular construction and evaluation. It will help the effort to ensure that (a) examinations do not become an end in themselves but serve the purpose of education; and (b) that purpose of education is clearly reflected in the syllabus, textbooks and gradually in teaching practice. It will lead to improved techniques of assessment such as oral tests, questionnaires, anecdotal records, checklists, project reports, rating scales and so on, with the aim of testing the student's ability to comprehend clearly to apply his knowledge in new situations.

Public examinations are necessarily written examinations. They test one type of ability, the ability to answer questions within a limited period of one to to three hours. Pupil evaluation has, however, to be a continual process and should go side by side with learning. If education is to build up and foster the integrated and harmonious development of the human personality, which indeed, is its aim, the curriculum must provide for such growth. The techniques of teaching should be directed towards the discovery of truth. Examinations are only a part of the over-all education to promote this discovery. External examinations suffer from being too remote from the individual classroom and the teacher does not always have the opportunity to test. The teacher's fitness should not be confined to teaching but should extend to testing as well. And this is where internal assessment comes in. In India, we are now moving towards the gradual introduction of this type of assessment. This will supplement the annual examination and help the examiners to obtain a broader student profile. The weightage given to both ranges from 25% to 50%.

If examinations should effectively serve the purpose of education, both examiners and teachers should have a new orientation. They should be exposed to the several facets which are inherent in the educational system. It should be their endeavour to delineate curriculum objectives in terms of pupil behaviour, to frame objective based test items specifically to test certain behaviour, to validate those test items, to draw a balanced blue-print for a question paper keeping the various objectives in view.

All this has assumed great significance in this era of change and challenge and in the context of the upsurge of knowledge, the early obsolescence of this knowledge and its rapid replacement of more up-to-date knowledge. It necessitates a corresponding training of teachers on a massive scale at all levels, the proper orientation of paper setters and the strengthening of the dialogue between the examining bodies and the framers of curriculum. India has awakened to the need for these urgent explorations. For, the quality of education depends, to a large extent, on the quality of evaluation.

In recent years, much has been taken in hand, both at the Centre and in the various States of India, to promote an awareness of the need for continual examination reform and for the development of proficiency in the various areas of educational growth. There is no doubt that there is a great deal more which requires to be accomplished, to enable us to move from a situation where there is equal measurement of unequal opportunities towards a more rational system, which encompasses not only educational goals but also national needs. The point to bear in mind is that there should be a continuous quest, and efforts towards reform have to be periodical. As in all fields of human endeavour, in this field also, there is no room for thinking that the last word has been said.

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