TRENDS AND ISSUES IN AFRICAN EDUCATION
TRENDS AND ISSUES IN AFRICAN EDUCATION

In this Issue focus on

Assessing Expected outcomes of Education

What every student should know and how to assess it.

December 1985
CONTENTS

Foreword.................................................................(i)

Chapter I: Assessing the Expected Outcomes of Education:
what every student should know and how to
assess it; The Kenyan case................................. 1

I Education and the Expected outcomes
II The Assessment of Educational outcomes.............. 5
Annex I: Items that have a high degree of relevance,
efficiency and equity............................................. 8
Bibliography........................................................... 13

Chapter II: What Every Secondary Student should know and how
to assess it: Analysis of Nigeria's National
Policy on Education.............................................. 15

I Introduction........................................................... 15
II Need for Different Assessment Techniques............. 17
(a) Cognitive Domain.............................................. 17
(b) Affective Domain............................................... 19
(c) Psychomotor Domain......................................... 22
III Suggested tools and techniques with reference to areas
and frequency......................................................... 22
IV Conclusion.......................................................... 26
References............................................................. 27

Chapter III: Perspectives on Educational Assessment in Lesotho......... 28

I Introduction........................................................... 28
II Primary school Learning Examinations.................... 29
III Junior Certificate Examination............................ 30
IV COSC Examinations.............................................. 32
V Standardization of Examination Marks.................... 32
VI The Role of Educational objectives........................ 34
VII Continuous Assessment....................................... 35
VIII Evaluation of Vocational Technical Education.......... 36
IX Assessment of Relevance of Education.................... 37
X Conclusion........................................................... 38
References............................................................. 39
Chapter IV:
Assessing Expected outcomes of Education:
What every student should know and how to assess it........41

I Introduction.................................................................41

II Possible and Desirable objectives..................................42

III Assessment of Expected outcomes of Education...............45
  (a) What is assessment.................................................45
  (b) What do we assess.................................................46
  (c) The Need for Assessment........................................48
  (d) How do we Assess Expected outcomes.......................51

IV Conclusion.................................................................53

Bibliography.................................................................55
Foreword

This is the third volume of a series of Education Monographs concentrating on Trends and Issues in African Education. The contributions in this volume are papers on assessing the expected outcomes of education; that is what every student should know at the end of a programme and how to assess it. Three of the contributions are by scholars in institutions within the region while the fourth is by the Commission.

The first article examines the issues connected with the assessment of expected outcomes of Education in Kenya. It argues that one of the major assessment problems is to prepare tests which are all purpose. It points out that one and the same examination is used to rank candidates and schools; to predict future performance; to select for placement to jobs and to institutions of higher learning, to measure the quality of the schools; and to determine the worth of an individual. This is in spite of the fact that, technically, assessment should do no more than rank candidates on a given criteria. To this should be added the fact that in Kenya there is intense competition for places in institutions of higher learning, the scarcity of job opportunities and the importance of a 'good' certificate in determining a salary and employment. These factors tend to influence the expected outcomes of education as students may learn simply to pass an examination.

In the second article, an analysis is made of assessment in relation to Nigeria's national policy on education. It points out that Government policy is opposed to assessment of students' work based on one final examination. Instead there should be continuous assessment and for this matter students should know what continuous assessment is. It therefore makes a distinction of four types of continuous assessment. It then analyses the need for different assessment techniques since students are subjected in the course of their programmes to three general domains (cognitive, affective psychomotor domains). The paper concludes by suggesting tools and techniques with reference to the areas to be examined and assessed and how often or frequently assessment should be done.

The third article is on perspectives on educational assessment in Lesotho. It provides an overview of procedures used in Lesotho for assessing the educational outcomes. It analyses assessment conducted in primary, secondary and high schools, and makes reference to assessment conducted in technical, vocational and non-formal education programmes. No reference is made to assessment at the tertiary level.

The final paper argues that developmental changes produced by the school constitute only part of the components of the total outcomes of one's life. It points out that although education from school can produce significant changes in students, not all learners can change exactly in the same manner and to the same level or degree because so many factors influence learning: the teachers, family, society, environment, curricula, instructional facilities, health, nutrition etc. It therefore argues that not every student will know what is expected of him to know. If thus examines what is educationally possible and desirable and how best such educational objectives can be assessed.
The foregoing are some of the issues reflected in this third volume of the monograph on education. It is hoped that they will generate some comments by our readers who may wish to contact us at this address:

Chief,  
Public Administration, Management and Manpower Division,  
P.O.BOX 3001  
Addis Ababa, ETHIOPIA
CHAPTER I

ASSESSING EXPECTED OUTCOMES OF EDUCATION:
WHAT EVERY STUDENT SHOULD KNOW
AND HOW TO ASSESS IT:

THE KENYAN CASE

\[1/\]

---

\[1/\] Contribution by the Kenya National Examination Council
I. Education and the Expected outcomes

Education is the process of socialising and professionalising the individual learner. One of the main educating agencies, and the subject of this paper, is the school, in which pupils are subjected to the influence of a selected and controlled environment so that they may undergo certain development and acquire competencies.

As a socialising agent, the school inculcates the values and attitudes that are of practical importance in that society while it fulfills its professionalising role by equipping the pupil with skills that will enable him to be useful to himself and an asset to his society. In this dual role, the school reconciles the needs and rights of the individual which are often egocentric, with the broader needs and demands of society.

Education, therefore, is a product of society and influenced by a society's philosophy, its economy and its politics which in turn influence the nature, content and delivery of the curriculum. The outcomes of education will vary according to the differences in the societies. At the same time, however, the pupil who is both the subject and the context of education has needs and drives that are universal. It is this universality which makes it possible to discuss what every pupil should know on an international basis. To do this effectively, it is necessary to get behind the numbers of subjects taught and the diverse practices that confuse the wood for the trees to the underlying principles which make education a universal theme. This is what this paper attempts to do.

Narrowed down to the core, education has three basic outcomes. First, it gives the pupil knowledge - to know what exists that is of relevance to his life and where he can find it. Secondly, it teaches him how to use that knowledge. This the pupil can do at several levels. He can use the knowledge as he finds it, or apply it in order to build upon it, extend it, or create from it. One mark of an educated person is his ability to get the highest possible surrender value of his knowledge in any given situation. Thirdly, education must equip the pupil with the tools of the trade. The three Rs are the basic tools - until a pupil can read, write and do some arithmetic he cannot gain very much from formal education. Ideally, all pupils should be able to decode, manipulate and use words and numbers as a vehicle for thought. Other tools that may be considered secondary and which the pupil needs include the ability to select, make judgements, reason, synthesise and evaluate.

What knowledge is relevant to a pupil, when should it be given, how should it be given and tested? Such a tremendous amount of knowledge is available and so much of it is relevant to the student that the decision on what is to be imparted to him involves subjective selection based on the needs of the learner and of the society. This has often resulted in an over-democratisation of the curriculum. Africa seems to be inevitably caught up with broad curricula in an attempt to accommodate the diversity of its educational needs. While most of the countries in Africa are primarily rural and agricultural, they simultaneously have to train high level manpower who can operate effectively in a modern technological world. While accepting the need for an international language, they at the same time must promote national languages. While adopting the philosophies of other countries,
they have to keep alive their cultural and religious endowments. Consequently, timetables are over-crowded and the breadth of choice available to students is so great that it threatens the validity of defined outcomes of education. In Kenya, secondary school pupils can choose 6 to 9 subjects out of a variety of 68. Only English and Mathematics are compulsory and therefore, there are over 20,000 acceptable combinations!

The belief seems to be that a subject will not be considered important unless it is assigned a place on the timetable. Every year witnesses the multiplication of subjects and papers within those subjects often resulting in duplication of skills. In Kenya, there have been five syllabuses containing a Physics component, five with some Chemistry and five with some Biology. These have now been reduced to 3, 3 and 4 respectively.

This pushing of specific subjects is counter-productive for several reasons. Firstly, very few students end up taking any one of the options. Table 1 below shows the percentage entry figures for the ten most popular subjects in the 1981 K.C.E.

<table>
<thead>
<tr>
<th>Subject</th>
<th>Percentage</th>
<th>Candidates</th>
</tr>
</thead>
<tbody>
<tr>
<td>English Language</td>
<td>100%</td>
<td>(21,275)</td>
</tr>
<tr>
<td>Mathematics</td>
<td>97.8%</td>
<td></td>
</tr>
<tr>
<td>Geography</td>
<td>91.4%</td>
<td></td>
</tr>
<tr>
<td>Lugha ya Kiswahili</td>
<td>78.3%</td>
<td></td>
</tr>
<tr>
<td>C.R.E.</td>
<td>77.9%</td>
<td></td>
</tr>
<tr>
<td>History</td>
<td>57.5%</td>
<td></td>
</tr>
<tr>
<td>Literature in English</td>
<td>57.8%</td>
<td></td>
</tr>
<tr>
<td>Biology</td>
<td>46.8%</td>
<td></td>
</tr>
<tr>
<td>General Science</td>
<td>38.6%</td>
<td></td>
</tr>
<tr>
<td>Commerce</td>
<td>36.8%</td>
<td>(74,499)</td>
</tr>
</tbody>
</table>

As many as 41 out of the 68 subjects had fewer than 1,000 candidates and 21 subjects less than 100 entrants. This position creates fundamental problems in defining and measuring educational outcomes. It means that pupils are acquiring different skills. Skills obtained from a study of English Language, Mathematics Geography, Physics, Chemistry, Biology and Agriculture differ significantly from those obtained from a combination of English Language, Literature in English, Kiswahili, C.R.E., Fasihi ya Kiswahili, General Science and Music. One is predominantly scientific while the other is mainly cultural. And yet, every student should have a more equitable balance of the two. It also makes assessment unreliable in that results thereby obtained, pertain to very diverse skills but are treated as indication of some uniform qualities. The second source of unreliability is that not all subjects receive equal weighting on the timetable. While English and Mathematics are each allocated 8 periods per week, others like History and Religious Education are allocated 3-4 periods a week while yet others such as Commerce are two year courses instead of four.

Secondly, the multiplicity of subjects puts undue stress on resources - the teachers, books, classrooms, libraries and laboratories. One would expect a lowering of quality of education from this - it is more cost effective to provide ten well qualified teachers than forty mediocre ones, and the same applies to the other resources.
Thirdly, this multiplicity is illogical given what we know about the rate of retention. Only about 15% of what we learn and do not constantly use is remembered. The retention rate is even lower when the learning is superficial, unrelated to other knowledge, irrelevant or meaningless. Most of us would fail examinations we passed when we were in secondary school. There is rationale in these arguments for a core curriculum.

The recommendation for a core-curriculum was in fact made in the NCEOP (1976)

"Secondary school curriculum should be developed on the basis of a core of compulsory subjects related to basic skills, knowledge and attitudes."

It has however not yet been implemented - subject specialists seem to have maintained the upper hand in decisions involving curriculum content and all of them are by trade, purists.

An examination of the goals of education in the last twenty years indicate three basic outcomes:

- affective outcomes such as ethical, religious and cultural values, national unity and a sense of nationhood, attitude to work, good citizenship.

- a cognitive survival kit in the form of social and political awareness, knowledge of the why and how of the environment, and competence in a variety of development tasks.

- economic outcomes - NCEOP recommends 'development of the personal qualities of creativity, innovativeness and thinking which are related to the need for many students to create their own income - earning opportunities'.

These goals are best realised through a study of all the subjects in the curriculum! Since this is impracticable and since as we have already indicated, giving a choice is counter-productive, the solution lies in combining the subjects that are related and teaching them as one discipline. A core-curriculum that all students should follow, would include the humanities, the sciences, mathematics and a language.

The humanities which include religious education, literature, history and sometimes geography are about man, real or imagined, and his response to his world. Well taught, the humanities can build up a set of scenarios from which personal inferences can be drawn. These inferences help to crystallize and contextualize the pupil's philosophy of life. In a core curriculum, the approach would not be who, were, what and when but rather why and how. The subject specific approach tells us who Julius Caesar was, when the Mau Mau war was or who
led the Israelites out of Egypt. The core curriculum approach would be thematic—how human beings react to tyrannical rule and the three examples could be cited alongside the numerous instances we have all around us in the world today.

This approach makes learning more meaningful to the student and it also reduces the amount of content a student needs to carry in his head. It also helps the learner to build upon the knowledge he has because it builds relationships and breaks down the subject compartments. The humanities largely fulfil the affective goals of education.

The sciences which include Geography, Physics, Chemistry, Biology and Agriculture help the pupils to approach the world more systematically and objectively. The common skills in all these subjects are observation, manipulation, experimentation, estimation, measurement, making abstractions, and drawing conclusions. These are key skills in the survival kit earlier mentioned. The sciences give answers to the whys and hows of things. Once the pupil has these answers, he is in a position to manipulate, control and change his environment.

The main shortcoming with the teaching of science is that too many advanced principle are taught too early. This is unnecessary given the finding that in 18 year old who has had some scientific education but studied a specific O-level course is able to pick up all the facts and principles of the four year course in 3-4 months. In the core-curriculum, knowledge is taught only when it is needed.

Mathematics is essentially a language. Well taught, Mathematics equips the learner with symbols and notation as an aid to clarity of thought. Of all the subjects so far discussed, however, Mathematics is the most notorious in remaining purist in its approach. Mathematicians are unapologetic about their lack of touch with reality and insist that:

'Mathematics is independent, stands on its own and is self-contained. Applications are only accidental to its concepts and meanings'

and 'mathematics is a language of complete abstraction, it deals with properties and ideas, the symbolism is purely artificial'.

The pure mathematician sees his discipline as a mystical religion with its own articles of faith, not available to the initiated while the man in the streets wants mathematics is the most poorly performed subject at 'O' level with failure rates of over 60%. One can think of at least two reasons for this. There is too much unreal notation and symbolism (in the 1980 paper I, only 4 out of 30 items had any resemblance to a real life situation. The Pythagoras Theorem, for example, is taught as an algorithm without it being translated to the familiar and practical 3:4:5 application that all builders use to get right angles. As a result, both pupils and teachers get lost in the symbolism and abstractions long before they grasp the main numeracy skills.
For different reasons from those that result in a low rate of numeracy, pupils finish secondary school with inadequate language skills. The main problem here is that English, which is the medium of instruction, is in competition with other languages which are more easily accessible to the pupils and which are more meaningful to them. Pupils hardly use English outside the classroom, their attitude to it is at best ambivalent - they realise the importance of knowing English well as a means to further knowledge but they are more attached to their national language or mother tongue. Consequently, very few of them ever gain total mastery of English. They use English in a stilted and formal way and hardly ever develop a feel for it. It is difficult to know the effect a tenacious hold on language has on knowledge acquired through it.

II. THE ASSESSMENT OF EDUCATIONAL OUTCOMES

Assessment is a sine qua non of education because it quantifies the effectiveness of the educational programmes. In deciding how to assess educational outcomes, it is necessary to know the use to which the results of the assessment will be put. An assessment of a particular course of study is different from one used for placement purposes or another used to diagnose pupils weaknesses.

Unfortunately for us in measurements, we are called upon to prepare tests that are all purpose. The same examination is used to rank candidates and schools, to predict future performance, to select for placement to jobs or to higher institutions of learning, to measure the quality of the schools, to determine the worth of an individual! This is in spite of the fact that technically, assessment should do no more than rank candidates on a given criteria.

In Kenya, as in many third world countries, the preparation of multi-purpose tests is a fait accompli. The intense competition for places in institutions of higher learning, the scarcity of job opportunities and the importance of a 'good' certificate in determining salaries necessitates a fair and objective measure to be used as a criterion for allocation.

After seven years of primary education, the open access cycle ends. Only 37% of those who finish primary school go to secondary school. In 1982, a total of 350,000 candidates sat for the terminal examination, Certificate of Primary Education (C.P.E.) Out of these, only about 129,000 were selected for entry into secondary school. In the same period, out of 120,000 candidates who sat for the terminal examination, Kenya Certificate of Education (K.C.E.), only about 15,000 continued to advanced level work. The job opportunities in any one year do not exceed 50,000 and when they are available, salaries are based on the strength of the pass at either C.P.E. or K.C.E.

While accepting that there are merits in using the examinations for selection, one is consciously aware of the fact that the educational system is inequitable and that some of the differences in the levels of attainment are a reflection of different learning environments rather than of innate abilities of the pupils. One is also sensitive to the criticisms, not always unfounded, of the iniquities
of examinations. They are blamed for dictating curriculum instead of following it, of encouraging rote learning, of determining life chances on the basis of a very small sample of students' abilities and of giving unfair advantage to particular social groups.

Whatever the mode of assessment and regardless of the level, these are some of the parameters that must guide the measurement process. The results of the examinations will be used for multiple purposes the major use being determining the life chances of pupils. Secondly, there is need to respond positively to these criticisms by identifying those which arise as a result of poor examinations and correcting them, and turning the others to the advantage of the learner.

In Kenya, this approach has proved very successful at the C.E.P. level and several programmes are underway to extend it to all examinations. We start on the premise that in these circumstances, examinations have to serve both an allocational and an educational role. To allocate places effectively, they must be efficient and fair while in order to fulfil the educational role, they must be relevant and aimed at improving the learning process. This, it can be argued, is operating outside the purview of measurements as a discipline but it is an alternative chosen from many that are more detrimental to the learning process.

Efficiency as used here refers to the ability of the examination to discriminate effectively between able and less able candidates. The efficiency of the question is measured by the discrimination index which indicates how pupils who get that particular item correct perform on the rest of the paper. Efficient items have high D indices - candidates who get them correct also perform best in total. Equity refers to the ability of the items to reduce the element of bias in the examination. It is realised that even good examinations cannot make up for poor teaching. Some of the bias, such as the rural urban, boys versus girls can be reduced by testing higher level abilities such as reasoning and deduction which tap innate abilities more effectively and by basing questions on material which is within the experience of the pupil. Relevance, as was discussed earlier, is based on subjective judgement. Tests that demand only recall of factual information or isolated fragments of knowledge are, however, less relevant than those which demand synthesis, understanding of principles and all those other skills mentioned on the second page of this paper. Examples of items that are relevant, efficient and fair are given in Appendix I.

Coupled with this strategy in approaching the content of the examinations, the Kenya National Examinations Council does not leave the consequent formative effect of the examination to the deductions of the teacher. The feedback system is used in which the performance of candidates vis-a-vis what the examination expected is communicated to the schools. Changes that may have been put in the examination are also explained and the schools' performance relative to others in their district and in the entire country given. This information gives both guidance to teachers and offers them an incentive. For C.P.E., a newsletter is sent out every year and given free to all the schools. It has produced remarkable results.

When the composition paper was re-introduced in the C.P.E. examination in 1973, nearly half of the candidates were totally illiterate. Some of them could barely write their names and others could not even copy the question out correctly. This so startled the then Examinations Section that it was decided to establish a communication system with the schools to point out such findings and to alert them on changes in the examination. The first such newsletter was sent out in 1976. In 1977, the most common mark in composition was 2/40, which indicates just bare decoding of letters of the alphabet. In 1980, it was 6/40 which is indicative of a general improvement where most of them could write in recognisable English. In 1981, it was 10/40, an indication of not just recognisable English, but ability to write sensibly in continuous prose. In 1982, the modal mark was again 10/40 with a tendency to bimodality at the 16 - 20 mark range. Although this is still a long way from the ideal, it is a remarkable improvement over a period of three years. What the C.P.E. newsletters seem to have done is to create an awareness in the schools that they were being judged on a national level and that most of them were coming through in very poor light; they realised that it was possible to do much better than they were doing (the newsletter includes a range of compositions from the poorest to the best) and many of them have since improved. If this trend continues, and we hope that it will, there will be a very strong case for institutionalizing the feedback system as part of the educational process rather than leaving it as an incidental process of examinations.

At the secondary school level, assessment is more complicated because of the diversity of the curriculum. Over and above the considerations of equity, relevance and efficiency, K.C.E. also takes into account the elements of choice, the phrasing of questions and the reliability and accuracy of marking schemes. The choice of questions must be such that it is not so wide as to create diversity of response and that the questions which have an element of choice are as similar as possible. The wording of the questions should avoid ambiguity and jargon and ensure that the task demanded of the candidates is specific.

Once these considerations are borne in mind, the mode of assessment is selected on its appropriateness for that examination. Some of the modes in use at the Kenya National Examinations Council are given in Appendix II.
Appendix I

ITEMS THAT HAVE A HIGH DEGREE OF RELEVANCE
EFFICIENCY AND EQUITY

Questions 1 to 15

Read the two passages below. They contain blank spaces numbered 1 to 15. For each blank space, choose the best of the four answers given.

Kipenu Primary School,
P.O.Box 51,
KIPENU.

10th January, 1983.

Dear Uncle Mjomba,

Happy New Year to you, Aunt Shangazi and all my cousins. Everyone at home is fine. Aunt Rehema came to see us last week but she did not stay for as long as we would have wanted.

I have some good news! The C.P.E. examination results are out and, believe it or not, I got 3 A's! I am very excited, especially because I feared I had failed. I have been appointed to join Furaha High School. I am sure my parents are very proud of me.

You remember that you promised to buy me a watch if I passed. I will have enough time to stop by your house on my way to the new school but I hope you will bring the watch with you when you visit me at the new school.

I look forward to seeing you soon.

Your loving niece,
Halima Suleiman

ID Index

1. A. will not stay D. Cannot stay 0.66
   B. did not stay                   C. did not stayed
2. A. information B. knowledge C. news D. message 0.70
3. A. failed B. felt C. failed D. fallen 0.94
4. A. picked B. elected C. appointed D. selected weak
5. A. for B. of C. in D. with 0.97
6. A. passed B. will pass C. past D. have passed weak
7. A. have no B. have not C. not be having D. not have 0.72
8. A. you will visit B. you are visiting C. you visit D. visiting very weak
9. Muli carries his bag to school with a strap over his shoulder. When the bag is heavy he finds that the strap hurts his shoulder. To reduce the pain, Muli should get a new strap that is

A. wider
B. narrower
C. longer
D. shorter

10. You and your friends are herding goats near your village. You notice a stranger taking away one of the goats. Which one of the following would be AGAINST the law for you and your friends to do?

A. Shout at the stranger in order to attract attention from the village.
B. Arrest the stranger and take him to the chief.
C. Run after the stranger and beat him up.
D. Take away the goat from the stranger.

11. A dealer buys a car for sh 35,000. He spends sh 5,350 on repairs and then sells the car for sh 51,000. How much profit did he make?

A. sh 10,650
B. sh 16,000
C. sh 21,350
D. sh 40,350
THE TYPES OF EXAMINATIONS CURRENTLY USED BY KNEC.

<table>
<thead>
<tr>
<th>TYPE</th>
<th>NATURE</th>
<th>ADVANTAGES</th>
<th>DISADVANTAGES</th>
<th>USED FOR</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Written examinations</td>
<td>Require the student to express himself in his own words, using information from his own background and knowledge.</td>
<td>1. Can tap high levels of reasoning such as required in inference, organization of ideas, comparison and contrast.</td>
<td>1. Covers only a limited field of knowledge in any one test. Essay questions take so long to answer that relatively few can be answered in a given period of time.</td>
<td>Academic subjects such as History, Literature, English, Chemistry where the development of an argument is part of assessment criteria.</td>
</tr>
<tr>
<td>a) Free response</td>
<td></td>
<td>2. Good at revealing qualities such as creativity, originality, sensitivity.</td>
<td>2. Very time consuming to score. Introduces a large subjective bias. Requires a great deal of human input e.g. at KCE, we require about 250 markers for the Literature paper. At CPE, we need 1,500 examiners for the composition paper alone.</td>
<td></td>
</tr>
<tr>
<td>(Essay type)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b) Fixed response</td>
<td>Requires students to select answers from given options or to supply answers limited to one word or phrase.</td>
<td>1. Efficient at measuring specific facts.</td>
<td>1. Requires very refined testing skills if it is to be effective. The feedback on teaching does not encourage organization of ideas.</td>
<td>Subject where specific facts are required such as sciences, mathematics. Also large entry examinations e.g. CPE where 350,000 scripts need to be scored in one month.</td>
</tr>
<tr>
<td>TYPE</td>
<td>NATURE</td>
<td>ADVANTAGES</td>
<td>DISADVANTAGES</td>
<td>USED FOR</td>
</tr>
<tr>
<td>---------------------------</td>
<td>------------------------------------------------------------------------</td>
<td>----------------------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------</td>
</tr>
<tr>
<td>3. Oral and Aural</td>
<td>Requires candidate to perform to the assessor either by answering</td>
<td>Allows for direct interchange between assessors and candidate.</td>
<td>1. Expensive in time, personnel and equipment.</td>
<td>Language learning currently used in music French and German.</td>
</tr>
<tr>
<td>examinations</td>
<td>orally or by listening and responding to questions.</td>
<td></td>
<td>2. Highly subjective.</td>
<td></td>
</tr>
<tr>
<td>4. Practical</td>
<td>Requires assessing candidate's production or assessing candidate at</td>
<td>1. Possible to measure specific psychomotor skills.</td>
<td>1. Demands experienced assessors who are conversant with the task.</td>
<td>Practical subjects such as the sciences, technical subjects.</td>
</tr>
<tr>
<td>examinations</td>
<td>work. Project assessment.</td>
<td></td>
<td>2. Very time consuming.</td>
<td></td>
</tr>
<tr>
<td>5. Skill based</td>
<td>Requires candidate to demonstrate specific skills in set tasks.</td>
<td>1. The success in performing a given task can easily be established -</td>
<td>3. Difficult to verify the authenticity of a candidate's work.</td>
<td></td>
</tr>
<tr>
<td>Assessment</td>
<td>- requires candidate to communicate in writing related information.</td>
<td>e.g. typing 40 w.p.m.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- requires candidates to demonstrate creative abilities in a</td>
<td>2. The tasks are very specific.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>specialized area.</td>
<td>3. Criteria for success is very specific.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1. Expensive in terms of time and material.</td>
<td>Vocational courses e.g. typing, shorthand, carpentry.</td>
</tr>
<tr>
<td>TYPE</td>
<td>NATURE</td>
<td>ADVANTAGES</td>
<td>DISADVANTAGES</td>
<td>USED FOR</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>------------------------------------------------------------------------</td>
<td>-----------------------------------------------------------------------------</td>
<td>-------------------------------------------------------------------------------</td>
<td>---------------------------------------</td>
</tr>
</tbody>
</table>
| 6. Continuous Assessment      | The teacher observes and assesses the pupil over an extended period of time. | 1. Teachers best know their pupils and can therefore best judge their capacities.  
2. They have a larger time to observe their pupils and therefore they have a more stable record of pupils achievements.  
3. They are more useful for instructional purposes as they provide instant feedback to both the teachers and the learners. | 1. Introduce a large component of bias and emotional involvement.  
2. Difficult to tighten the criteria of assessment.  
3. Difficult to compare performance across board and therefore difficult to set standards. | Vocational courses and all skill based courses e.g. mechanical drawing, electrical fitting |
Appendix II

BIBLIOGRAPHY

Anderson, John

Court, D and Ghai, D

and

Kinyanjui, K

Ethiopia

- "Development Policy and Educational opportunity: The Experience of Kenya and Tanzania"
  (Nairobi, IDS Occasional Papers No. 33 1980)

IAEA

- Criteria for awarding School Leaving Certificates
  Ed. Ottobre P. M. Pergamon Press 1977

- Broadening Opportunities Through Assessment in Education
  Ed. Valismo, M.D. IAEA 1982

- A Teachers Guide To Assessment
  Compiled by Macintosh H, and Frith D.

Keller, E. Jr

Kenya

- Education, Manpower and Development
  The impact of Educational Policy in Kenya (Nairobi: Kenya Literature Bureau 1980)

- Education Commission Report, Part 1
  (Ominde Commission) Nairobi: Government Printer 1964

- Report of the National Committee on Educational Objectives (NCEO)
  (Nairobi: 1976)
Kenya National Examinations Council (Unpublished papers)

- 'The Humanities, Why Study and Examine?' (Makau, B.M. 1982)
- The Place of the K.C.E. Examination in the Educational System (Makau, B.M. 1982)
- Language Testing (Kagia, R. 1982)
- The Core Curriculum (Roberts, I.K. 1983)
- What is happening to mathematics? (O'Connor J.P. 1982)
- Examination Reform: The Kenya Experience
CHAPTER 2

WHAT EVERY SECONDARY SCHOOL STUDENT SHOULD KNOW AND HOW TO ASSESS IT: ANALYSIS OF NIGERIA'S NATIONAL POLICY ON EDUCATION

1/ Contribution by the Faculty of Education, University of Ife.
I Introduction

In Section 3 paragraph 15 (8) of Nigeria National Policy on Education, it is stated that:

"Government Plans that progress along the educational cycle will be based on continuous overall guidance-oriented assessment by teachers and headmasters. However, Government recognizes the implication of the implementation of such a measure for teacher education and will accordingly ensure that programmes of pre-service teacher education in the teacher training colleges......will incorporate training in the continuous assessment of pupils"

In Section 4, paragraph 23 (?), it is stated that "the first school leaving certificate examination will ultimately be abolished and Primary School Leaving Certificates will be issued by the Headmasters of individual schools and will be based on continuous assessment of pupils and not on the results of a single final examination."

Furthermore, in Section 9, paragraph 70, it is categorically stated interalia, that:

"the existing practice in most of our institutions of learning of basing the assessment of students' work on one final examination and on one type only is no longer tenable. Continuous assessment based on a variety of evaluation techniques should be henceforth adopted, and there should be some means for ensuring some common national standards both in the areas of public examinations as well as in the internal ones."

In view of the fact the primary and secondary school students of Nigeria have not been used to the above policy statement, it therefore becomes necessary to make them know, particularly secondary school students, what it is meant by continuous assessment and how it is going to be carried out. But what is Continuous Assessment? Simply put, it is a systematic process of finding out how much a pupil has acquired from learning activities in terms of thinking, knowledge, reasoning, character development and industry. This is an operational definition of continuous assessment as it relates to school setting. It is a comprehensive system in terms of evaluation and measurement, cumulative in record keeping, and guidance-oriented in use. Implicit in the above definition are some characteristics of continuous assessment.

Four of such would be clearly mapped out: Systematic, Comprehensive, Cumulative, Guidance-oriented. (Yoloye et al 1982)
1. Systematic: Continuous assessment is said to be systematic in the sense that it requires what measurements are to be made of the pupils' performance, at what time intervals or times during the school year the measurements are to be made and the results recorded, and, the nature of the tools or instruments to be used in the measurements.

ii. Comprehensiveness: An important aspect of its comprehensiveness is that the pupil is seen in his totality - his cognitive, affective, and psychomotor domains are considered. And this is done using many types of instruments and methods which include tests, projects, assignments, observations, questionnaires and interviews.

iii. Cumulative: Continuous assessment is cumulative since any decision to be made at any point in time on a pupil takes into account all previous decisions made on him. This requires the keeping of up-to-date cumulative records on each pupil.

iv. Guidance-oriented: Continuous assessment is guidance-oriented in that information obtained is used to guide the student's further development. This directional focus of continuous assessment is embedded into the whole procedure of its operation. Useful information thus derived would be used to place the student in an appropriate study programme.

It is very interesting and exciting as it is stated earlier to find out that the issue of continuous assessment runs through the vein and marrow of the National Policy on Education (1979).

Vital relevant areas include those of Primary Education, Secondary Education, Higher Education including Professional Education, Teacher Education, and even the Administration, Planning and Financing of Education.

From the definition and characteristics of continuous assessment, it is clear that a number of 'new' things will be introduced into the secondary school system. For a democratic society, like Nigeria, there is therefore a very great need for the products or the ingredients and participants of the system to be aware of what is coming to them. Some other questions that may come to mind are:

How will the students be assessed in the various educational domains?

What assessment techniques are available for the classroom situation?

Which of the techniques shall we use?

How frequently will the assessments be done for effective and meaningful judgement?
And more seriously yet to be solved problems are related to combination of scores for certification purposes.

Which of the school scores or combination of scores shall we use to certificate the secondary school leavers?

How much weight shall we give to the achievement of the pupils from class to class for certification purposes?

II Need for different Assessment Techniques

The objective of our assessment will determine the technique to be used. The objective may be determined by the classroom teacher for the lesson he/she intends to teach; it may be the national objective based on the philosophy of the programme as determined or laid down by policy makers. From whatever source the objective comes, the school programme or education generally should expose students to three general domains. The domains include:

1. Cognitive Domain
2. Affective Domain
3. Psychomotor Domain

The procedure for measuring each of the domains will be different depending on which of the domains we intend to measure. For example, 'honesty' (an affective trait) can only be directly measured by means other than tests and examinations; whereas tests and examinations can be used to measure the cognitive domain. Even then, we do not ask students to write an essay on knowledge (an aspect of cognitive domain). Let's take each of these domains and enumerate some of the techniques for assessing them.

(a) Cognitive Domain

Cognitive domain refers to knowledge, comprehension and application of facts. An immediate example of cognitive domain is the knowledge of or level of achievement of an individual on Mathematics. Most of the school activities and final achievement of the Nigerian students are hitherto unfortunately based only on this aspect of education. Nigerian students are aware and used to this approach.

One other typical broad area which may be assessed in cognitive domain is knowledge of job. Knowledge of a job implies intellectual ability to perform a particular job. To determine the level of intellectual ability there are aptitude tests which may be used. However, Nigerian Secondary School students are not used to such tests and they deserve to know that such instruments are forth coming to their schools. The results of the tests would be used to their benefits and counselling purposes.
At the classroom level, the various forms of tests which will be used to ascertain the standard of education annually will be expected to be administered to students. The administration will be done annually. Students should be aware of this and should be prepared for the tests. However, they should not over-stress themselves because of this. Various other tests which might be developed and administered by the class teacher at specific intervals will be available in the school. Tests which would be collected from item banks (to be developed by various bodies; local, state and national bodies) will also be available. The students might be forced to see the school as an examination factory because of the rawness of the concept. It therefore becomes demanding on the part of the school authorities to make the students know this approach.

Like any other enterprise, schooling at the secondary school level requires certain attitude to be able to perform satisfactorily. In fact, to be able to cope with the demand and the competitive world of secondary education, there are specific and definite levels of traits which the individual ought to possess. The assessors are thus asking if the assessee is able to cope with the school work. A detailed analysis of the subject matter is quite necessary to be able to develop an adequate test.

Achievement Test

Achievement test is an instrument used to determine how much a candidate has gained from a course of instructions. The test may be teacher made or standardized one. To be able to measure achievement of Nigerian secondary students continuously as proposed by the policy, 'standard' instruments must be available. Achievement tests can tap adequately the several aspects of cognitive gain.

Standardized achievement tests are very few in Nigeria; the present situation calls for development of such tests by test specialists. Professional test developers should be encouraged to carry out the exercise of developing such standardized achievement tests. This is one of the main ways to realize our selves here that the use of achievement test is the most paramount and common exercise in the classroom.

Projects and assignments

Assignments are usually given to students for either practice or submission for grading. But it is often difficult to assert that the accomplishment of such assignments are necessarily the effort of the students. However, the teacher has no choice other than to award credit to such works if done collectively. Continuous assessment will use this approach in assessing students; and record of such work will be used cumulatively to assess the student. The students therefore have a right to know that such assignments will be used.

On the other hand, assignments should be graded with caution since such assignments will be done from home. The amount of weight given to it should be well guided with principles. It will, for example be unwise to give assignments, at the secondary school level, 80% of the semester or year's work.
This is particularly dangerous since such jobs may have been carried out by more knowledgeable individuals who may be living in the same environment with the student. Notwithstanding this seeming problem of home work and assignment, it may be justifiably claimed that even if the candidate copied the work from some other source other than his effort, he will acquire some minimum knowledge.

Generally speaking from both projects and assignments, pupils should be graded on whatever point scale is chosen in the areas such as:

(a) member cooperation during project
(b) ability to tackle the given problem or assignment
(c) degree of participation of an individual in information gathering, or write-up of project, etc.

Thus a project or assignment that is well designed and carried out, under the guidance and effective supervision of a teacher constitutes a useful technique for making meaningful continuous assessment of learners.

(b) Affective Domain

Hitherto, we have been talking about measurement of achievement of different school subjects. Usually, they can be measured for an individual child by the use of paper pencil test. But is that all that the school is meant for? Are there other aspects of the child that the school can cater for? What about honesty, punctuality, interest and attitude of the child? Assessment of student of developing nations do not make use of these traits. It is time they started. Continuous assessment calls for inclusion of such traits.

The affective domain has been labelled as the main concern of the school by some educators. It is felt that the ultimate intention of education is to make the individual a 'complete man' - a complete man in respect of his ways of life, a man in terms of acceptable societal norm and use of what the school has given him. Some people feel that what is left after the school knowledge (Chemistry, Physics etc.) have been forgotten is called education. The left overs are the internalized traits or outlook of the individual.

The affective domain has a knowledge base. Attitude to some things is usually based on ones knowledge of such things. Racism, or discrimination is based on the lack of knowledge of the other group of people. Tribalism can be traced to the knowledge of one group and lack of knowledge of the other group. The ultimate aim of science education is to cultivate scientific attitude in the students while the goals of nursing education is, among other things, to contribute to the overall aim of health care of individuals and the entire society. To develop these habits in the students, one does not mount the pulpit and preach the concept but one has to teach the pupils science and let them gradually internalize the values of science; teach them health care and let them practice it and finally internalize it. Give them information on human right and let them practice it.
Subjective Approach

The subjective approach is of two types: interview and observation. These two techniques are subjective because of the influence which the assessor may wield on the data as a result of his personality. However, the subjectivity can be reduced on interview approach if the interview is structured. Observation can be made less subjective too if well planned. Among other things, in these two cases (interview and observation), the assessor must identify what he intends to measure before he sets out.

Again one is hereby reminded that the issue of data collection with the use of these various techniques is new to the populace (teachers and pupils too) of Nigeria. They regard this as an extra job on their part as teachers.

There is a need to educate all who are concerned.

Objective Approach

The objective approach is said to be objective because the influence of the assessor has been removed to a very reasonable extent. Among others, the following are examples of the objective approach:

(i) Rating Scale. Students may be asked to rate themselves on certain issues or subjects. One of the commonest formats of scales is the Likert format. e.g. They may be asked to rate themselves on how they see the school subjects, the class teacher, and other issues of interest. For example:

This is a list of words which are approximate words. I want you to put an 'X' where you think the school environment fits best between each pair of words.

<table>
<thead>
<tr>
<th>Cold:</th>
<th></th>
<th>Hot</th>
</tr>
</thead>
<tbody>
<tr>
<td>Busy:</td>
<td></td>
<td>Idle</td>
</tr>
<tr>
<td>Neat:</td>
<td></td>
<td>Dirty</td>
</tr>
</tbody>
</table>

This method is known as semantic differential approach.
(ii) **Interest Inventory**

The school ought to be concerned about the area of interest of the students. One of the ways of knowing this is by the use of interest inventory. Some students are there just because they have to, but not out of interest, (like any other profession). One can ask them to tick if statements like these are true or false for them:

1. T F TF I like school
2. T F TF I skip school at least once a month
3. T F TF I have been absent from school more than 20 days last year.

The above instrument may be extended and used to identify potential dropouts.

(iii) **Standardized Questionnaire**

This is another approach for collecting information in respect of the pupils affective domain. I will leave this topic entirely because it is one of the commonest instruments in most developing nations, including Nigeria.

(iv) **Sociometric Scale**

Sociogram is a very simple approach used to identify social relationships among group members. For example, one may like to identify an isolate in a class. The sociometric approach is a useful example.

A teacher once asked a class of 8 students to identify their best three friends in the class and the outcome is as below:

<table>
<thead>
<tr>
<th>Pupil</th>
<th>Chosen</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>B C D</td>
<td>4</td>
</tr>
<tr>
<td>B</td>
<td>C E A</td>
<td>5</td>
</tr>
<tr>
<td>C</td>
<td>D A B</td>
<td>3</td>
</tr>
<tr>
<td>D</td>
<td>B C E</td>
<td>4</td>
</tr>
<tr>
<td>E</td>
<td>D A B</td>
<td>2</td>
</tr>
<tr>
<td>F</td>
<td>A B D</td>
<td>-</td>
</tr>
</tbody>
</table>

**Analysis**

- D is most popular and accepted.
- F is not chosen at all. Why?
- He needs your help
- This is affective.
Psychomotor Domain

Psychomotor deals with skills and performance. It requires some expertise to be able to handle even the simple instruments in the science laboratories. Preparation of chemicals is a skill that must be known by students, they need to know how to handle thermometers of different categories. Physical education may teach the skills. The pupils will like to play soccer and other games in the school. They are thus acquiring some skills.

To measure the acquired skill, the only solution and most appropriate one is by the use of performance test. There seems to be no plausible alternative to this. With emphasis on this vocational skill, the students must be assessed on pure performance. For example, to employ a capable typist, the only solution is to make him type or look at her accumulated performance. We dont tell her to sit down and ask her how many words she can type in a minute.

Let her type for you. But hitherto, Nigeria has been most concerned about certificate and this seems to be dragging us behind. Less emphasis should be placed on certificate and more on performance. However, with the introduction of continuous assessment, reduced emphasis will be placed on certificate and in fact, certificates will take into consideration the psychomotor domain of an individual.

The classical example of assessing skill is given in the life of a prospective mechanic/draughtsman in a factory. The interviewees have to pass through a hall before going into the room for the interview. In the hall was placed a vehicle with a mechanical fault. The interviewee will only be given an opportunity to attend the oral interview if only he is able to put the vehicle right. If the candidate cannot, he has heard the result. This is definitely a performance test.

By the definition and characteristics of continuous assessment, most of the above techniques must be used in the school. It therefore seems that continuous assessment will turn the schools into examination factories. Schools may be made to lay unnecessary emphasis on the measures other than cognitive. The next section hereby suggests tools and techniques with reference to areas and frequency.

III Suggested tools and technique with reference to areas and frequency

Continuous assessment as part of instruction is carried out throughout the school time in an informal manner, but the school is required to provide for it formally at predetermined intervals so that systematic records of the pupil's progress may be maintained, while determining these intervals and areas to be measured the following format may be a useful guide:
<table>
<thead>
<tr>
<th>Scholastic Aspect Areas</th>
<th>Frequency</th>
<th>Tools and Techniques</th>
</tr>
</thead>
<tbody>
<tr>
<td>Curricular areas such as Maths, Chemistry, Physics etc.</td>
<td>At least two times per term in a school year of three terms.</td>
<td>Written tests and examination Oral examination practical examination Achievement tests Standardized achievement tests.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Non-Scholastic Aspects Personal and social qualities Areas</th>
<th>Frequency</th>
<th>Tools and Techniques</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regularity, Punctuality, Discipline, Habits of cleanliness, Emotional Stability, Initiative, Cooperation, Sense of responsibility, Industry, Civil Consciousness, Spirit of Social Service</td>
<td>Once in every month</td>
<td>Observation Anecdotal Records Rating Scale</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Interests</th>
<th>Frequency</th>
<th>Tools and Techniques</th>
</tr>
</thead>
<tbody>
<tr>
<td>Literary, Scientific, Musical, Artistic, Social Service</td>
<td>Once in each term</td>
<td>Observation Rating Scale Anecdotal Records</td>
</tr>
</tbody>
</table>

NOTE: All pupils are not expected to have all above-mentioned interests. An individual pupil may be assessed in respect of only that interest which he displays in his activities in the school.
### Attitudes

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Tools and Techniques</th>
</tr>
</thead>
<tbody>
<tr>
<td>Once each term</td>
<td>Interview</td>
</tr>
<tr>
<td></td>
<td>Rating Scale</td>
</tr>
<tr>
<td></td>
<td>Anecdotal Records</td>
</tr>
<tr>
<td></td>
<td>Observation</td>
</tr>
</tbody>
</table>

4. **Towards Teacher**
- Towards Studies
- Towards School-mates
- Towards School programmes
- Towards School property

5. **Physical Health**
- Height
- Weight
- Chest expansa
- Physical defects
  - If any
- Eye sight
- Hearing
- Adenoids
- Teeth
- History of disease

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Tools and Techniques</th>
</tr>
</thead>
<tbody>
<tr>
<td>Once every half-year</td>
<td>Interview</td>
</tr>
<tr>
<td></td>
<td>Medical Check-up</td>
</tr>
<tr>
<td></td>
<td>Rating Scale</td>
</tr>
</tbody>
</table>

6. **Co-curricular Activities**
- Literary and Scientific Activities
  - Library
  - Debate
  - Recitation
  - Creative Writing
  - Talks (speech making)
  - Science Hobby
  - Arts Hobby

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Tools and Techniques</th>
</tr>
</thead>
<tbody>
<tr>
<td>At least Twice a Year</td>
<td>Observation</td>
</tr>
<tr>
<td></td>
<td>Anecdotal Records</td>
</tr>
<tr>
<td></td>
<td>Rating Scales</td>
</tr>
<tr>
<td></td>
<td>Inventory</td>
</tr>
</tbody>
</table>
Cultural Activities
- Drama
- Music
- Drawing and painting
- Sculpture
- Artistic embroidery

Frequency: At Least Twice a Year.
Tools and Techniques:
- Observations
- Anecdotal
- Rating Scale.

NOTE: Every pupil may be evaluated in respect of one activity from each of the above-mentioned groups.

Outdoor activities
- Games
- Sports
- Gymnastics
- Swimming
- Scouting
- Red Cross
- Gardening

Frequency: Once in each term.
Tools and Techniques:
- Observation
- Anecdotal
- Records
- Questionnaire

NOTE: 1. All the students may be assessed in respect of their participation in sports and games.

2. Every pupil may be evaluated in respect of at least one of the outdoor activities.

Problems of implementation of continuous assessment are not the concern of this paper, but the writer is aware of the impending problems such as finance, personnel, and acceptability. Maintenance of educational standard and readiness of the consumers of secondary school pupils are also apparent as problems. The school pupils should be aware of the problems and they should be ready to accommodate them.

Most importantly are the various measures which would be taken in respect of each student at suggested intervals. Students should be informed as to when tests would be administered and how such tests will be conducted on all the domains.
Without doubt, continuous assessment is more advantageous than the traditional method. This fact has been demonstrated in a study conducted by Ojerinde (1979). The study was carried out among university undergraduate students of the University of Ife. Various measures were taken into account for final grading - attendance was even scored and used for the final course grade.

CONCLUDING REMARKS

For the purpose of combination of grades for certification, multiple-regression design is a solution but this will not be discussed here. Some individuals have suggested 60% weight for the school work and 40% for the external examination while others suggest 50-50. However, these suggestions are not based on any empirical approach. Adequate care must be taken in determining the various weights.

With the various data collected for cognitive, psychomotor and affective domains, one is faced with the problem of certification of students. For example, is it adequate to award a student who is found to be a soccer star the secondary school certificate or can it be rightly claimed that because of a student's trustworthy behaviour over a period of six years of secondary education, he/she should be awarded the secondary school certificates? More importantly what do we do to a high achiever (cognitive) but an affectively defective individual (as it may happen that a student is a thief, or a dirty individual) when it comes to certification? This writer feels strongly that a candidate should not be unnecessarily punished for being defective in one area. The report sheet should contain different columns for the various domains. The duty of the prospective consumer of the product is to determine (through process of job analysis) which of the domains will be most appropriate for the job or task for which the candidate is being recruited.
REFERENCES


CHAPTER 3

PERSPECTIVES ON EDUCATIONAL ASSESSMENT IN LESOTHO

1/ Contribution by the Institute of Education, National University of Lesotho
Introduction

Lesotho is a small country with a population of about 1.3 million. It is completely surrounded by the Republic of South Africa. It is classified by United Nations as one of the twenty-five poorest countries in the world. Because of scarcity of employment opportunities, most of the male labour force works in the mines of South Africa as migrant workers.

The management and administration of education system in Lesotho is a tripartite arrangement between government, churches and the parents or community. The structure of the formal education system is as follows: Primary education is a seven-year cycle at the end of which pupils take the Primary School Leaving Examination (PSLE). The junior secondary education takes three years, leading to a Junior Certificate (JC) examinations. The next two years lead to "O" level Cambridge Overseas School Certificate (COSC). There is only one university, the National University of Lesotho (NUL) and one teacher training college, the National Teacher Training College (NTTC). There are three technical schools, one run by government and the others by churches. There is one agricultural college, the Lesotho Agricultural College (LAC) under the Ministry of Agriculture, and a number of vocational schools.

In 1981 there were 1087 registered primary schools in Lesotho, of which 51.6 percent were complete, that is, offered classes up to standard 7. In the same year there were 54 junior secondary schools and 51 senior secondary schools (high schools). In 1980 enrolments stood as follows for various levels: primary: 244,936, secondary 19,300, and high school: 4,000. The current average pupil teacher ratio is 48:1 for primary and 21:1 for secondary schools. About 35 percent of primary school teachers and 21 percent of secondary and high school are unqualified. Further, 41 percent of secondary and high school teachers are degree-holders. Expatiate teachers make 30.8 percent of the total teaching force at secondary and high schools. This figure also constitutes 71 percent of all degree-holding teachers and 82 percent of the degree-holding science teachers.

Curriculum development for primary has always been the responsibility of the Ministry of Education. In 1950 the Ministry established the National Curriculum Development Centre (NCDC). This centre is now developing a new curriculum which replaces the one that had been in operation since 1967, after independence. The National Curriculum Committee (NCC) oversees the work of NCDC but up to now it only serves in advisory capacity. The curriculum for secondary education is developed by subject panels under the auspices of the Lesotho Examinations Council. The regional Examinations Council of Botswana, Lesotho and Swaziland was disbanded a few years ago, although there are still working relations between Lesotho and Swaziland. For COSC the curriculum is set by the Cambridge Examination Syndicate in England.
The three bodies responsible for developing curricula as described above are also responsible for running the respective external examinations.

This paper is designed to provide an overview of procedures used in Lesotho in assessing the educational outcomes. Emphasis is laid on assessment in primary, secondary and high school education. To some extent a reference is also made to vocational, technical and non-formal education programmes. Discussion of assessment at university level is omitted intentionally.

II Primary School Leaving Examinations

These examinations are the most sensitive of all external (national) examinations for two main reasons. First, they affect the largest single group of examination candidates. In 1982, for instance, about 20,000 pupils sat for PSLE. This is a big number by Lesotho standards. Secondly, they serve both certification (achievement) purpose and as a selection device into secondary education. Parents are aware that education qualification are a gateway to worthwhile employment and that with only a primary school certificate their children would have no chance of obtaining employment.

The PSLE are under direct control of the Ministry of Education, specifically, under the Principal Education Officer. Unfortunately, this officer is already overloaded with work and cannot pay full attention to examinations affairs. There is a senior education officer in charge of primary education as a whole. His duties in relation to examinations are unclear but peripheral at best. There is also a primary school examinations officer (based at the Examinations Section of NCDC) who does mainly clerical work of sorting, dispatching and receiving examinations materials. There is, therefore, no high-level administrative cadre devoted to PSLE.

These examinations consist mainly of objective-type of items. Essay questions are found only in languages. The examination questions are set by the inspectors and, in some cases, subject panels and staff of NCDS. Originally, teachers used to be involved in the construction of items, particularly during the time of the now defunct national office of the Regional Testing Centre (RTC). Item writing workshops were held for teachers of various subjects. These teachers would then continue to submit items to RTC on a regular basis. The items would be trial tested and refined for possible inclusion in the item bank. This practice has now been discontinued, except in the mathematics under the supervision and guidance of the Mathematics Section of NCDC. As the report of the Task Force (1982) on Education Sector Survey points out, "the most valuable opportunities of in-service training are lost" (p.21) as a result of lack of involvement of teachers in the construction of items for PSLE. The system of item banks has also not been operative for about three years.
There is yet another unfortunate situation obtaining in PSLE. In the early 1970's the development of ability tests (numerical and verbal) was started. These tests were meant to serve as selection into secondary education. Since their predictive validity was professionally established, children who performed well on them could be regarded as having the potential to succeed in, and benefit from, secondary education. The tests were written together with the achievement tests, but their results were processed separately. What is happening now is that results on the ability tests are combined with the rest of the achievement tests when considering the performance of candidates. This constitutes both a misuse of these type of instruments as well as contribute to invalidation of assessment of overall achievement. It is an untenable situation.

On the whole PSLE has been criticized as being a poor instrument to assess the level of knowledge, skill or competence acquired by graduates of primary education (Task Force Report, 1982). The situation is aggravated by two other factors, namely the lack of curriculum and course objectives and the method of grading, that is standardization of scores. We shall come back to these issues in later sections.

It is recommended that other ways of assessing the outcome of primary education be explored. It has been suggested, for example, that standardized tests may be useful in assessing student's competence or skills (Keilthy, 1975), in spite of questionable validity of these type of tests (Hadjad, 1979). Other suggestions have included the use of continuous assessment procedures and development of separate achievement tests on a nation-wide basis for traits like numeracy and literacy (Task Force Report, 1982). Such tests could be developed after thorough analysis and improvement of the PSLE.

It is also suggested that performance on PSLE should be analyzed subject by subject and school by school every year and the information on students' competence fed back to schools. This would be helpful to teachers. It would be advisable, though, to use raw scores rather than the current standard scores in which the results are expressed.

III Junior Certificate Examinations

The Junior Certificate examinations are taken at the end of the third year of junior secondary education. Like PSLE, they are used for selection purposes, but this time into COSC. Their other function, that of certification, is very important since JC holders can branch into different specialized programmes like vocational, technical and teacher training if they so wish.

These examinations are co-ordinated by the Lesotho Examinations Council, a parastatal body related to the Ministry of Education. The Council used to perform primarily administrative functions until about two years ago when a professional educational evaluator was hired. It has been recommended elsewhere that the Council should be upgraded and a strong professional component be established within it (Task Force Report, 1982). Another way of improving its efficiency would be to merge it with Examinations Section of NCDC. At the Ministry of Education headquarters there is an officer in charge of secondary education in general, including some matters related to assessment.
The JC examinations are set by subject panels. The members of various panels are educators and specialists in their own areas but not necessarily on educational assessment. Questions are a mixture of objective tests and essays, plus some practicals. According to the Task-Force Report (1982), the examinations are not aligned to "important objectives of the curriculum (p. 22) and the grading of candidates involves standardization of marks (see also Railise, 1983) rather than indicate specific competencies of students. The Council does not give schools "feedback on how they might help pupils improve their performances" (Task Force Report, 1982, p. 22).

In fact this would be difficult to do since the manner in which marks are expressed does not reflect competency levels of students, but rather shows how individual candidates perform in relation to others. The examiners' reports are often sketchy and not very useful as feedback to teachers and students.

It has often been argued that there is no link between JC curriculum and that of COSC. The two are developed and examined by different bodies. This discontinuity, it is felt, is a contributory factor to the declining "standards" as reflected in the poor COSC results lead to inadequately prepared candidates for NUL, particularly in the B.Sc. programme. The university has had to launch remedial programmes like the Lesotho Pre-Entry Science Course (LESPEC). LESPEC is a seven-month course intended to upgrade annually a selected number (about 130) of students who have passed COSC and want to pursue science-related studies at NUL, LAC, NTTC and Leretholi Polytechnic. It is a joint project between these institutions on the one hand and the Free University of Amsterdam on the other.

In an attempt to synchronize JC and COSC, the Ministry of Education announced in 1981 that, starting in 1983, the secondary and high school education would consist of five-year continuous curriculum leading to the award of "O" level COSC. However, as in the present set-up, there would still be a hurdle after the third year, that is, an external examination leading to certification. This time it would be known as the Intermediate School Certificate (ISC). At this point in time it is not clear how far operative the new system is. For example, a new syllabus was supposed to be developed, and some negotiations would definitely have to be undertaken with Cambridge Examination Syndicate.

During the first half of the 1970's the Ministry of Education launched, on an experimental basis, what was known as the Jet System. This was a four-year programme leading to COSC "O" levels. Three high schools in the country were involved in the experiment. However, in 1981 the Ministry abruptly terminated it. Apparently this was purely an administrative decision, based on no empirical evidence regarding the systems' merits or lack of merits. The programme had never been systematically evaluated before (even though it had existed for five to seven years). Its termination coincided with announcement of the introduction of the five-year COSC programme discussed in the preceding paragraph.
The picture we have before us is that of a tradition of regular changes in the curriculum and structure of secondary education in Lesotho. Unfortunately, most of these changes are introduced without adequate planning, consultation or even support of teachers and other educationists. No wonder teachers often feel that these innovations are an imposition on them (Sebatane and Baholo, 1980). This situation tends to undermine the morale of teachers, which in turn affects their teaching and assessment effectiveness. Further, changes are often made without scientific empirical justification. Finally, the high frequency of changes may be a reflection of lack of firm aims and objectives of our secondary education.

IV COSC Examinations

These examinations are run by the Cambridge Examination Syndicate in England and co-ordinated locally by the Lesotho Examinations Council. In Lesotho they are used for certification as well as for selection for admission into university and other tertiary institutions. It is a two-year programme, after junior certificate and leads to "O" levels. Only one high school in the country offers "A" level leading to London General Certificate of Education (GCE). Questions are predominantly essay type. There is a relatively high emphasis on application of knowledge, particularly in practically-oriented subjects.

No empirical studies have been conducted on the quality of COSC examinations as they relate to Lesotho. One reason could be that these examinations are run by foreign-based body. However, COSC examinations have an international reputation and the Syndicate has a long experience in running examinations.

The performance of Lesotho candidates on COSC have been declining seriously in recent years. For example, in 1981 and 1982 the pass rates were 20 percent and 19 percent, respectively. Some people have attributed this deterioration to the fact that COSC examinations are foreign and they suggest that Lesotho should establish its own senior certificate relevant to her needs. Localization of senior certificate has been accomplished in other countries in Africa. In Lesotho, however, it would not be wise to undertake this at this stage. We do not have adequate expertise, even if the Cambridge Examination Syndicate were to assist initially. Secondly, our efforts have to be directed to improvement of the severely poor conditions and status of the primary and junior secondary schools. Localizing for the sake of it might lead us into a situation where we establish a system of poor quality that does not measure up to international standards. However, the possibilities of localization of the senior certificate as a long-term exercise should be explored.

V Standardization of Examination Marks

The marking and reporting of examinations at both PSLE and JC are based on norm-referenced measures. Marks are transformed into standard scores (T Scores) and the performance and standing of an individual student on any given subject are determined by how the rest of the other candidates have performed. There is no comparison against a set standard. Related to this is the fact that the Ministry of Education can and does determine the cut-off points on the aggregate scores. These
cut-off points may shift for different years, depending on the "required" percentages of candidates at various pass levels (1st class, 2nd class, 3rd class, or failure). At JC, for example, the total pass rate shifts between 72 and 75 percent. Again, this practice, based as it is on "internal" standardization alone and not on comparison with an accepted standard of performance (criterion-referenced measure), constitutes a deception on childrens' competence. Further, considering that the level of examinations may change annually, this practice may mean that some students who obtain class 1 in one year may be far less competent than those who obtain class 1 in another year.

A number of scholars have pointed a finger at the fallacy of standard scores in cases where one is interested in assessing individual students' attainment of specific skills. According to Somerset (1982), the use of standard scores may be "positively misleading" if interpreted to indicate the student's degree of achievement in a particular subject. This is particularly the case where performance level is poor. Standard scores, he argues, tend to be higher than raw scores. As such they should always be interpreted in relation to the raw scores from which they were derived. Somerset (1982) states that:

Standard scores are essential when the results from different papers must be combined to give an overall total, and they are useful for comparing the relative performance of a candidate or group of candidates from subject to subject or from year to year. But for planning and evaluation purposes standard scores are quite inadequate (p.57).

The Task Force Report (1982) is very critical of the use of standard scores:

Perhaps the most important observation concerns the method of grading the papers. It is an inappropriate technology which has at once disguised actual performance and contributed to the decline of education quality. The public believes that the grades of the PSLE are awarded for standards of actual competence; that they indicate whether pupils can add and divide, spell, reason, organize information and express themselves. The public does not know that in fact the grades are derived from a "normalization" of the pupils' actual scores. The pupils are not measured against specific competencies, but against each other. As a consequence, the percentage of failures is determined not by how well the pupils performed, but by a decision in the Ministry of Education as to what proportion of them should pass. Hence, however excellent or poor the general performance, only that certain percentage will fail, and the rest will pass. The grades given will depend only on the quality of the pass measured against the average performance (pp. 22-23).
The report goes on to describe conditions under which the use of standard scores may be tenable:

Measuring pupils against each other rather than against standards is relatively safe where the teaching force is homogeneously well qualified, where instruction is relatively standard in all schools and where the performance of the pupils can safely be assumed to satisfy minimum standards of achievement. In such circumstances, variations in examination performance from one year to the next can be assumed to be due less to variation in the attainments of the pupils and more to variation in the difficulty of the examinations. Where, as in Lesotho, a large proportion of the teachers are unqualified and the constraints on good learning often severe, such an assumption is simply not tenable. It cannot be taken for granted that the average pupil will achieve the minimum competencies expected from primary education......it is inappropriate for certification or for guaranteeing that a learner has certain levels of knowledge, skills and understanding (p. 22).

Lesotho Distance Teaching Centre (LDTC) offers correspondence course for candidates who want to sit for Junior Certificate examinations privately. In his report on the evaluation of this programme, Brown (1982) recommends very strongly that LDTC should develop its own assessment system rather than rely on the JC examinations which do not reveal specific competencies of students.

VI The Role of Educational Objectives

The specification of educational objectives, either at the curriculum or instructional level, is a precondition for any worthwhile educational assessment effort (Keilthy, 1975; Weiler, 1978). The instructional objectives, if expressed in behavioural terms, could indicate the skill expected to be acquired by the learner. Assessment would then involve determining whether or not that skill has been acquired.

Unlike the 1967 primary school syllabus, the new syllabus being developed by NCDC spells out course objectives, both general and specific, as well as activities of the teacher and the pupils. In some subjects like mathematics, materials and evaluation procedures to be used are suggested. It is hoped that these syllabus will make it easier for teacher to assess their instructional outcomes. At present both PSLE and JC are criticized for neglecting course objectives (Task Force Report, 1982). The evaluation efforts of most of innovative and externally funded educational projects do not usually determine long-term effects of these projects on the clients (Sebatane, 1981). This is in spite of the fact that the major objective of such projects is to effect changes in the participants.
VII Continuous Assessment

Some form of continuous assessment has always been practiced in Lesotho primary and secondary schools. It generally takes the form of quarterly tests. However, it has never been uniformly applied so that one could make comparisons among teachers of the same subjects within or across schools. More importantly, the test results are usually not used for promotion, certification, or remedial instruction purposes. The assessment for promotion and certification purposes is the realm of end-of-year or external examinations.

In 1980 the system of continuous assessment was formally and legally introduced in primary and secondary schools. It was to replace the automatic promotion system which had been operating officially during most of the 1970's. It is important to note that automatic promotion system was abolished by Act of Parliament mainly as a result of public outcry against it (Sebatane and Baholo, 1980). The general public complained that teachers did not teach but just "pushed on" the children. This is what Lordon (1979) calls "neglect of responsibility" (p. 199). The professionals criticized the system on the grounds that it had been introduced without proper planning and consultation, and that it had never been evaluated.

There is no evidence to suggest that continuous assessment is being practiced any differently from the unsatisfactory way it has been conventionally. The following are some of the reasons for this situation (see Ralise and Nomvete, 1981; Sebatane and Baholo, 1980; Sebatane, 1980).

(a) The system was introduced haphazardly, without proper planning.

(b) Lack of clarification of the concept of continuous assessment to implementors of the system.

(c) Lack of follow-up on the part of the Ministry of Education.

(d) Lack of standard implementation, monitoring and control procedures. A survey by Ralise and Nomvete (1981) on this was too sketchy and confined itself to education officers.

(e) Lack of orientation of inspectors, managers, headteachers and teachers to the use of proper assessment techniques.

(f) Absence of a standard format for keeping cumulative records of students' performance. Cumulative record cards were not designed and approved of in time. Related to this is lack of secure file system in schools, where records can be kept. Without basic facilities like these, the system cannot run smoothly.

Other outstanding issues regarding the implementation of continuous assessment programme are as follows (Sebatane and Baholo, 1980):

(a) Determining the acceptable frequency of assessment.

(b) Deciding on the continuous assessment final examinations ratio, from the point of view of both the syllabus and marks.
(c) Deciding on the degree of centralization of the system.

(d) Deciding on whether the system will apply to assessment of non-cognitive areas as well.

The advantages of continuous assessment have been discussed elsewhere (Somerset, 1982; Task Force Report, 1982). Meanwhile Lesotho has to be congratulated for making the system mandatory in primary and secondary schools. What is needed now is to develop proper logistics of implementation. In the primary schools there are special problems like high pupil teacher ratio and multiple classes per teacher, all of which may make it much harder for teachers to implement continuous assessment adequately.

VIII Evaluation of Vocational and Technical Education

In Lesotho there are a number of vocational and technical training institutions that offer courses to school leavers (post-primary, secondary and high school levels). Other ministries like the Ministry of Health and the Ministry of Agriculture offer respective full-time training courses.

Since the programmes offered by these institutions have strong practical skills components, they are relatively easy to assess. In other words, it is easy to determine whether one can fix the engine of a car or type so many words per minute. The product can be observed on the spot.

What is now known as non-formal education (NFE) is being practiced in Lesotho. The Task Force Report (1982) states that:

non-formal education today is recognized as being a potentially important partner to formal education in developing those skills and attitudes required for the development of Lesotho (p.7).

The Institute of Extra-Mural Studies (IEMS) at NUL and LDTC are the two major institutions that run a variety of NFE programmes. The outcome of the programmes are often assessed by determining the specific skills acquired by the participants and the degree to which those skills are put to good use. Observations, interviews and questionnaires are the regular tools used to collect data for assessing the impact of NFE programmes. Tests play an insignificant role, if at all. As Haddad (1979) points out,

tests, even when properly used and interpreted, measure a very limited number of educational outcomes, and consequently their results do not justify the determination of educational success and failure (p.17).
There are three main institutions that usually carry out evaluation of NFE programmes. These are the Research and Evaluation Unit of LDTC, the Planning and Evaluation Unit of IEMS and the Research and Evaluation Unit of the Institute of Education at NUL.

IX Assessment of Relevance of Education

The outcomes of education in Lesotho can also be examined from a broader social perspective. One would like to agree with Sirken (1982), however, that it is difficult to measure social benefits of education because such benefits are long-term. It is when one defines education in broader terms that one begins to appreciate the need to assess the impact of education on social development. The Task Force Report (1982) puts it as follows, in relation to Lesotho:

An effective education system for any national, and particularly for Lesotho is not a luxury but a matter of survival. By education we do not mean schooling, although schooling is one part of it. An education system is the total set of activities that increase a people's competence to perform activities important for their well-being. Lesotho's survival and well-being will depend on its ability to shift from dependence on wage remittance from migrant workers in the mines of South Africa to increasing self-sufficiency at home and expanding exports. This will demand competencies and motivations that the education system as a whole is not fostering (pp. 52-53).

One of the major aims of education in Lesotho is to train manpower to undertake development programmes. It looks like formal education is not the one and only answer. The question one asks is, why is Lesotho still so poor and yet it has one of the highest literacy rates in Africa (Sebatane, 1982)? The Task Force Report (1982) suggests that "rural development and transformation require a broader and more appropriate basic education, both through primary schooling and non-formal education for adults and youth" (p.8).

On the whole, the relevance of education to socio-economic development of Lesotho is being questioned, even by politicians. People judge the products of education, that is, the trained manpower and determine their overall contribution to socio-cultural, economic and political development of the country, as well as their own personal development and advancement. Such overall assessment of quality of education is basically qualitative and may ultimately persuade decision-makers and professionals to do something. As Haddad (1979) indicates, "social goals ... are considered a major component of educational objectives" (p.16) but the attainment of these goals cannot be measured through conventional techniques alone.
Concluding Remarks

The status, quality and techniques of educational assessment in Lesotho, and I believe other countries as well, must be discussed and understood within the context of the conditions operating in schools, that is, school environment (Gebre-ab, 1992). In Lesotho we have such problems as lack of facilities, inadequate school supervision (Canadian Team of Educators' Report, 1979), a high rate of unqualified teachers, and high primary school pupil teacher ratio. All these are a contributory factor to outcomes of education. World Bank (1980) says that "the availability of textbooks has been found to be the most consistently positive determinant of academic achievement." (p.35). Haddad (1979) argues that achievement is a result of many other factors besides academic performance:

Academic performance is only one component of the learning process which is one of many elements of the school environment which is one of many determinants of achievement which is the least to say, one of many predictor of future success (p.15).

In Lesotho people have started taking positive steps to overcome the inadequacy of educational assessment in the country. One of the problems we have is lack of trained personnel on educational assessment. In 1982 a professional association called Lesotho Educational Research Association (LERA) was established. Its overall objective is to enhance the country's capacity to undertake relevant research on education. We have also joined hands with our sister countries, Botswana and Swaziland, to form a BOLESWA Educational Research Association, again in the interest of solving problems related to the quality and relevance of educational input and output.
REFERENCES


CHAPTER 4

ASSESSING EXPECTED OUTCOMES OF EDUCATION: WHAT EVERY STUDENT SHOULD KNOW AND HOW TO ASSESS IT (ECA)
I. INTRODUCTION

The concept of "education" like that of "freedom" is shrouded with complexities and difficulties. To some, it is not easily defined because of what it connotes; and to others, while education is intimately bound to the culture of the community it serves, what education has in common with development after taking these cultural differences into account is "teaching" and "learning". Thus to "educate" means etymologically "to educe or draw out of a person something potential and latent; it means to develop a person morally or mentally so that he is sensitive to individual and social choices and able to act on them; it means to fit him for a calling by systematic instruction; it means to train, to discipline or form abilities. The act or process of achieving one or more of these objectives is as a first approximation, what education is about. Viewed in this way, therefore, education is a process which changes the learner's behaviour in that each programme, course or unit of education aims at bringing about some significant changes in the students.

Basically, students who undergo an educational process should be different at the end of a programme from those who have not had that programme. Admittedly, there are changes that arise out of maturation, changes arising out of growth, and others out of varied experiences from the family, the environment and the school. In this paper, however, our concern is with changes produced by education and in the last analysis determined by school, its curriculum and its instruction. The problem of instruction and its direct outcomes are of concern to many of us because what children learn in school derives from the nature of their experience in the school setting in which the teacher not only imparts but facilitates the students' acquisition of symbolic skills, knowledge, information and national tradition.

Further, our concern is not just the traditional symbolic outcomes, but normative outcomes that emerge through pupils experience in coping with the sequences of situations whose character is defined by the structural properties of schools. These outcomes are formulated not in terms of the explicit goals of the schools peculiar relevance to family life, the community and society, but to the occupational and political worlds.

There is no doubt that schooling forms an important linkage between the family life of children and the public life of adults; it provides experiences conducive to learning the principles of conduct and patterns of behaviour appropriate to adulthood; and that it contributes to the acquisition of knowledge and skills through instruction. But these developmental changes produced by the school constitute only part of the components of the total outcomes of one's life. What is more important is that although education from school can produce significant changes in students, not all learners will change in exactly the same way and to the same level or degree because not all teachers, curricula and schools will be equally effective in changing their students or will do so in the same way or manner and to the same level or degree. It is therefore not possible within the title and scope of this paper that every student will know what is expected of him to know. This paper will thus examine what is educationally possible and desirable and how best these educational objectives can be evaluated.

II. POSSIBLE AND DESIRABLE OBJECTIVES

Given that the primary role of education is to produce changes in learners, it is important that someone has to decide on what changes are possible and what are desirable. This is not an easy matter on deciding what are possible and desirable educational objectives or outcomes because such a decision is not the prerogative of the one group or party of people. It involves teachers, students themselves, parents, politicians, curriculum planners, textbook and syllabi writers, the community and the employment world. There is no doubt that both the school, the family and the community provide different experiences for children and students and since experiences are an intermediate step which must be present if people are to learn from them, schooling therefore does bring about additions to the psychological repertoire of learning. It does not replace the prior learning obtained in the family or community. The impact of schooling is one of accretion rather than displacement in as far as individuals remain members of some family unit or community during their whole life: they have always to act in a way that sustains the relationship, and provide means for sustenance and employability.

The question that may be asked is: what are the educational objectives that should be pursued and are they possible of attainment? Certainly the two handbooks of the "Taxonomy of Educational Objectives: Cognitive Domain and Affective Domain" do indicate some of the broad classifications of educational objectives which are possible of educational attainment by students. However, an educational objective which is possible of attainment by some students is not necessarily possible to all for attainment because of the various factors such as age and level of the learner, the type of previous learning, the level of ability, attitude and interest of the learner, family background, the environment, the teachers, the school setting, facilities available and a whole set of other factors. To a greater extent it is for the teacher to decide which objectives are possible of attainment and in this respect it is up to the teacher to influence the attainment of such objectives based on his teaching style, his ability, experience and personality. It is worth of note that on the whole the teacher does not represent the major factor nor is he the main factor in determining the objectives which are possible of attainment by students.

On the other hand, an objective which is desirable for particular students is in part dependent on their present characteristics and their goals and aspirations for the future. If it were possible to look into, and read, the seed of time so as to decipher a person's future life, there would be no problem in setting desirable educational objectives for every student. We would be in a position to emphatically say that every student should know this and/or that at the end of each programme, course or unit, every student should demonstrate these or those outcomes. Life would be much easier. But since it is not possible to look into a person's future life, we can only set objectives which are likely to give the maximum flexibility in making a great variety of possible life decisions. It can be argued that what is desirable for the student may coincide with the greatest range of possibilities available to him in the light of his ability, previous achievement, and personality. Educational objectives must therefore be selected with maximum range of possible developments to cater for an individual's self-fulfilment, for income generating activities and for the pursuance of ideals and service to society.

What is learnt in school is many things to many people and to try to answer this question is but to give a hypothetical answer which considers the outcomes related to the experiences of pupils and tied to their participation in a social setting. Traditionally therefore, our approach to educational process is concerned with the explicit goals of schools as expressed in curriculum content, that is: the cognitive knowledge and skills involved in reading, arithmetic, and the like; subject matter content, national tradition, how to think, vocational skills, citizenship, self-confidence, tolerance, patriotism, co-operation and benevolent attitudes. All these cannot be learnt from school instruction only, because both schools and families instruct children in areas of cognitive development. Some children learn to read and count before coming to school in so far as instruction can be had from mass media, travel, museums, libraries, and personal contacts. In fact, "the greatest teacher of them all is the street".1

What is learnt in school is that students learn to acknowledge that there are tasks they must do alone and do them in that way; they must act by themselves, accept personal responsibility for their conduct, and be accountable for its consequence. They have to perform tasks actively and master the environment according to certain standards of excellence, and they must acknowledge the rights of others to treat them as members of society on the basis of societal norms. In a school setting students must work independently in so far as assignments given warrant personal attention and no help from others, because in the last analysis it is individual assessment of what a person has learnt in school that counts. Hence the rigid administration of tests and examinations to make sure that an individual's output is produced and not an output with others' help or through cheating. The contribution of school to the outcomes of students is that of adapting the learning potential of the pupil to the various skills and

1/ Brown Claude - Man-Child in the Promised Land Macmillan, New York (1965) p. 43
knowledge which a pupil must acquire for a productive adult life and employability. The capacity to hold a job or to earn a living involves not just adequate physical capacity but also appropriate intellectual and psychological skills to cope with the work-world.

And yet by assigning all pupils/students in a school or a class the same or similar tasks to be performed, teachers and educators are in effect making them confront the same set of demands or at least be subjected to same or similar experiences. Secondly, parity of age creates in students a condition of homogeneity according to their developmental stage. Therefore although students may be given similar tasks the outcomes arising out of those tasks will not be the same. Thirdly, through yearly promotion based on stringent examinations (especially in Africa) from one grade to another, students cross the boundaries separating one age category or one ability group from another. In the final analysis, what matters is what the student does and learns and not what the teacher does. We should never forget that students will always have different experiences even if the external conditions in which they operate appear to be the same.

As Tyler pointed out some years ago, the problem of selecting learning experiences is one of determining the kinds of experiences likely to produce given educational objectives and how to set up situations which will evoke or provide within the students the kinds of learning experiences desired. Tyler went on to argue that objectives must be stated in such a way as to be helpful in selecting learning experiences. Objectives can be stated as things which an instructor/teacher should do; or stated in listing topics, concepts, generalizations or other elements that can be dealt within the courses; they can be stated in the form of generalized patterns of behaviours; or expressed in forms which identify both the kind of behaviour to be developed in the student and the content or area of life in which this behaviour is to operate. In whatever manner the objectives are stated, whether they are possible or desirable objectives, it is important to select learning experiences that will effectively contribute to the attainment of such objectives. We can therefore select learning experiences that will help students develop skills in thinking; in acquiring information; and in developing social attitudes and interests.

1/ Tyler, Ralph W. - Basic Principles of Curriculum and Instruction, University of Chicago Press, London Second British Impression 1973 p. 65

2/ Tyler, Ralph W. op.cit. p. 43
It is the responsibility of teachers/instructors to make various decisions regarding effective experiences conducive to helping students change their behaviours in the desired ways. However, it is the role of evaluation to provide appropriate evidence to help both the teachers and learners attain the desired goals of instruction and the objectives of education. This then brings us to the central issue of assessment and evaluation of expected outcomes of education.

III. ASSESSMENT OF EXPECTED OUTCOMES OF EDUCATION

If we accept the fact that one of the purposes of education is to impart specific knowledge, attitudes and skills, then the purpose around which educational systems should be designed is instructional, and that knowing is the purpose around which the educational system should grow. Therefore the interaction between the learner and the environment through which the learner is making progress towards the attainment of specific knowledge, attitude and skills is viewed as instruction. An instructional system can be assessed by the degree to which it provides an effective system for the learner, that is, the contribution made to the attainment of desired performance. The development of such an instructional system (i.e. system for learning) is a decision making operation as to what should be learned, how and by whom, when and where, what resources should be involved in preparing and providing for learning; and how learning should be evaluated and improved. It is this last aspect that is our concern in this section of the paper to which we will devote our attention by asking the following basic questions:

(a) What is assessment?
(b) What do we assess?
(c) Why do we assess?
(d) How do we assess?

(a) What is Assessment

Etymologically, the word 'assess' means 'to sit beside' or 'to assist the judge'. It therefore seems appropriate in evaluation studies to limit the term assessment to the process of gathering the data and fashioning them into an interpretable form; judgements can then be made on the basis of this assessment. In this way assessment is often used interchangeably with evaluation and measurement, but when used precisely, it has a narrower meaning than evaluation and broader meaning than measurement. However, whether it is used broadly or precisely,

1/ Anderson Scarvia B.; Ball Samuel; Murphy Richard T. and Associates; Encyclopedia of Educational Evaluation, Jossey-Bass Publishers San Francisco (1975) p. 27
assessment is multitrait and multimethod that is, it focuses on a number of variables judged to be important and utilizes a number of techniques to assay them, such as tests, questionnaires, interviews, ratings, unobtrusive measures etc. It employs a multi-source techniques of collecting data on the same variable using trainers, teachers, instructors and course records, and uses a multi-judge approach of ratings of the same student performance obtained from several assessors and then judgement pooled together.

Whether we are concerned with the outcomes of education or those of a programme or project, assessment precedes the final decision stage in evaluation, e.g. the decision to continue, modify or terminate an educational programme or course. In fact, assessment is not entirely divorced from decision making because the entire assessment must be planned in the light of possible and plausible alternative decisions. However, in designing a good assessment programme, it is important to identify the range of relevant behaviours and characteristics to be measured; and then secondly to select or design reliable techniques for measuring these behaviours. This brings us to the question of what is to be assessed.

(b) What Do We Assess

Since evaluation is essentially the process of measuring to what extent educational objectives have been achieved it is necessary to appraise the extent and degree to which these changes have taken place. Such an appraisal should not be done once only but at least twice. Secondly evaluation involves getting evidence about behaviour changes in students so that any valued evidence about behaviours which are considered as educational objectives provides an appropriate method of evaluation. The question however is: whether we should assess or evaluate in terms of objectives, or evaluate the objectives themselves?

It is possible to evaluate the expected outcomes of education by direct reference to the objectives - human, social, pedagogical, cultural, economic, political etc. which the educational system as a whole, or its various sub-systems considered separately, propose to attain. This approach can be used to evaluate educational programmes or courses. It does assume that one can clearly identify the objectives of the educational system but which are usually implicit or couched in very general terms. At the same time it assumes that one can establish indicators or indices be they social or economic, whenever one needs to assess how the objectives laid down have been or are in the process of being attained.

This concept of evaluation, however, appears too limited and therefore an assessment of the value of educational policy must certainly extend to the objectives themselves i.e. we need to assess the extent to which the objectives themselves have been achieved. In this connection therefore we need to assess educational policies, educational programmes, and the internal effectiveness of the educational system of a given country.
(1) **Assessment of Educational Policies**

Assessment of educational policies involves establishing the coherency between, on the one hand, the objectives of the educational system, the means devoted to them and the results gained from them; and on the other, the main economic and social objectives of a development plan. Looked at this way we can talk of assessment criteria which embrace the means devoted to education and assessed with reference to national resources as a whole; and also the results obtained in the cultural, human, social, economic etc. fields.

In the assessing of educational policies, the four basic concepts of evaluation should never be lost sight of viz:

- Planned significance
- Planned productivity
- Real productivity
- Real significance

<table>
<thead>
<tr>
<th>Planned significance</th>
<th>Planned fulfilment of main goals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Estimated total costs</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Planned productivity</th>
<th>Planned production targets</th>
</tr>
</thead>
<tbody>
<tr>
<td>Estimated direct costs</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Real productivity</th>
<th>Real production</th>
</tr>
</thead>
<tbody>
<tr>
<td>Real direct costs</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Real significance</th>
<th>Real fulfilment of main/sub-goals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Real total costs</td>
<td></td>
</tr>
</tbody>
</table>

The point at issue here is that in taking cognizance of these concepts, assessment should make it possible for us to measure the gap between the planned significance and planned productivity on the one hand, and the real productivity and real significance on the other. This also makes it possible to examine the objectives of education and see whether the policy followed is feasible and capable of fulfilment. At the same time we can test the major disequilibria and effectiveness of a policy by reference to its results. In practical terms, if a country's policy is to give primary education to as many children as possible, given that education is neither compulsory nor free, we can assess the effectiveness of such a policy by looking at the actual number of pupils who complete the primary course and compare it with the planned output.

It is necessary, however, to assess the coherence of the objectives of education in relation to the social and economic objectives of a given country i.e. in relation to the indicators of economic and social coherence. The point is that to assess our educational policy, account should be taken of the social and economic factors that have bearings on the outcomes of education. For instance, an index of economic coherence is to be found in the adjustment of the output of the educational system to the manpower needs of the country or to the employability of such output. In terms of social coherence, there is need to assess the fulfilment of educational policy in respect of regional distribution of educational opportunities and facilities and the need for regional distribution of educational facilities in relation to population density.
Further, to the question of "what do we assess?" we find that evaluation studies produce comparative results in terms of specified student outcomes rather than assessing the outcome of each school. There is always the tendency of comparing students in boarding schools doing better than those in day schools; and the urban students doing better than rural students without actually taking into account the difference in costs. Certainly in the assessment of educational policies, it is worth asking whether greater benefit can be obtained at less the cost; i.e. whether we can attain our educational objectives at less the cost.

(ii) Assessment of the Internal Effectiveness of Educational System

Another important aspect of what to assess is in respect of the various factors operating in an educational system. First, if assessment is to be undertaken with any hope of success, the educational objectives should be concrete, pertinent, feasible, consistent and quantifiable. But since there are a number of factors influencing internal effectiveness of an education system, it is preferable to concentrate on the educational content rather than on non-educative aspects. Attention should be focused on the decisive factors in internal effectiveness such as: pupils themselves, teachers and other staff, curriculum, the administration, the premises, and parents and other clients. Basically, what happens to the pupils is in essence, what happens to the education system itself i.e. the change of behaviour exhibited by the product of the system is in fact the manifestation of the educational system's external and internal effectiveness, because effectiveness of a system means attaining the objectives previously proclaimed. However, while it is relatively easy to measure external effectiveness especially when account is taken of the fact that educational objective must go beyond the too narrow approach of the familiar equation of "education equals employment". Therefore what we assess must certainly go beyond the expected outcomes and stated educational objectives. This then brings us to the question of why we assess.

(c) The Need for Assessment

Much as we may formulate clear educational objectives, and select and organise learning experiences, the actual teaching involves a number of variables such as the students themselves, environmental conditions, the teacher's personality and his teaching style and the school facilities - all of which have direct influence on the learning outcomes. There is no way in which we can be sure that the expected outcomes will be fulfilled unless we institute within the educational process mechanism to guide teachers and their teaching towards their desired goals. To make sure that the desired outcomes are attained, there is need to develop evaluation techniques so as to find out how far the learning experience as selected and organized are actually producing the desired results.

We are interested in evaluation as an attempt to describe, appraise and in fact influence the changes which take place rather than to analyse all the processes which bring about that change. In this way the primary role of evaluation in education is to describe and influence change because evaluation is then considered as the systematic collection of evidence to determine whether in fact certain
changes have taken place in learners as well as to determine the extent or degree to which these changes have occurred in individual students. At the same time, evaluation can be viewed as one of the major factors influencing decisions about education or training programmes. To this effect, therefore, we can identify four types of evaluation for four major types of decisions in education viz:

(1) **Context Evaluation**: In the planning of on-going educational programmes and activities, context evaluation which is diagnostic in nature, helps to discover any discrepancies between programme goals and objectives and the actual impact of educational programmes and then to allow for planning decisions to match the intended and actual outcomes.

(2) **Input Evaluation**: Since we are concerned with making educational programme goals operational which have been identified and clarified by context evaluation, there is need to assess the optimal utilization of resources in relation to the results. Input evaluation helps us reach such decisions and some of the important issues which demand our concern are: the feasibility of accomplishing the goals and expected outcomes; the availability of strategies for accomplishing such goals and objectives; the potential costs of the various strategies employed to attain the goals and objectives including the advantages and disadvantages of such strategies and the probabilities of success based on past experience; the optimal utilization of staff and other resources (financial or material) including the utilization of external resources be they for teaching or the administration of various assessment or evaluation techniques.

(3) **Process Evaluation**: Evaluation and assessment should provide a feedback to the managers, administrators and educators of an educational programme. The focus of such evaluation should include the assessment of interpersonal relationships, teaching logistics, and the adequacy of staff performance and facilities. Process evaluation which in this case is synonymous with formative evaluation, is used to make decisions during the course of the programme.

(4) **Product Evaluation**: In assessing the extent to which the anticipated outcomes have been achieved we are engaged in product evaluation or summative evaluation. The need for this evaluation is to decide whether to continue or to terminate an educational programme based on the results of our findings. If the gap between the anticipated goals or outcomes and the actual outcomes is too great, we shall be forced to adjust and make necessary changes to the programme; and if it is too small, we are encouraged to pursue the objectives as planned.

Generally, whatever evaluation process we may be engaged in, the primary purpose of assessment is to provide information for decisions about the programme under appraisal and that the evaluation results obtained should be useful not only for improving a programme but for deciding whether to terminate or continue with it. This however presupposes that the process of obtaining evaluation information does meet the appropriate criteria of objectivity, reliability, validity, utility, practicability and ethical responsibility. These criteria are important considering that evaluation is a human judgemental process which is usually applied to the results of programme examinations and through feedback, we can adjust our objectives.
On the other hand, evaluation may be looked at as the final class of the cognitive variables as presented by Bloom in the Taxonomy of Educational objectives. It thus involves a combination of all the five behaviours - of knowledge, comprehension, application, analysis and synthesis. Evaluation then becomes making judgements about ideas, works, solutions, methods, materials etc. on the basis of established criteria and standards. Our problem however, is that once the need for assessment has been recognised, the question is how to set about it.

In setting about assessment we can distinguish different forms and different moments. The different levels of assessment may be at an overall, or at an operational levels. The overall level involves the general diagnosis of the system i.e. it involves an analysis of the educational policy so that we are able to judge the choice of priorities and the general results obtained. At the operational level assessment is concerned with the fulfilment of the objectives of a programme or project.

Different forms of assessment involve drawing a distinction between the internal and external effectiveness of educational systems. The former, measures performance in the light of the system itself i.e. success in the final examinations is the primary element of internal effectiveness, although other elements such as costs in relation to results and teacher's performance ought to be taken into account too. On the other hand, when we ask "what is the good of the school?" we are assessing the external effectiveness of the system taken from different points of view - economic, social and cultural. The focus of external effectiveness is on the quality of the output of the educational systems in the light of the needs and hopes of the society and of individuals themselves. We need to ask whether the value added to the individual by the system meets the expectations of society and individuals and whether it leads to progress in the direction of socio-economic and cultural development.

Different levels and forms, however, should be associated with different moments at which assessment can be made, although it should be emphasized that assessment should be a continuous process taking due cognizance of the resources needed. Yet in assessing expected outcomes of education, we are not just concerned with testing students for recognition and recall of facts, especially if the programme objectives include more than that, but we are also assessing other outcomes than mere recall of facts. Thus in the final analysis, summative evaluation instruments offer not just operational definition of the matrix of content but also behavioural outcomes of students. To select an appropriate evaluation instrument, however, entails defining something about what the student should learn and to give detailed operational definition of a sample of the problems, questions, tasks, situations etc. to which the student should be able to respond in an appropriate manner. We therefore turn to the question of how to get the response from the student i.e. how do we assess expected outcomes.
(d) How do we Assess Expected Outcomes

In education the process of assessment of outcomes starts with the objectives of educational programmes. The main purpose of evaluation is to determine how far the objectives so far set have actually been realized and to this end it is necessary to have assessment procedures that give evidence of the kind of behaviour implied by each of the major educational objectives. But since objectives may be classified according to their cognitive, affective and psycho-motor content, assessment procedures should be devised in such a way as to sample and test the anticipated behaviour at an appropriate level.

If, then, an educational programme seeks to improve the technical writing skills of students, then the assessment criteria should require the student to demonstrate their proficiency through actual writing of either prose or verse. But it is not easy to measure such outcomes because in life, people, society, job requirements and learning environments change and therefore few assessment procedures have lasting and undiminishing value. But whatever assessment procedures we adopt, it is important to ensure in the students and achievement of minimum competency. Tests designed for the purpose should ensure that:

1. The content and ability which each test task is intended to measure are important and necessary educational outcomes or adequate indicators of job performance;

2. The set of test tasks in an adequate sample of the expected outcomes of a student who has completed a given programme;

3. Prepared and qualified students to take the test have sufficient knowledge and ability to respond correctly to each test task; and,

4. The minimum acceptable level of performance on each test task is established by the competent assessment authorities. Such authorities may wish to employ modern assessment techniques such as PERT (Programme Evaluation and Review Technique) observation techniques and other methods.

Our concern here however is to examine three generally used models to assess academic attainment through the popularly known tests or examinations as administered by assessment or examining authorities in many countries viz:

1. The One-shot Model - this simply measures the status of the group under study at a single point in time. For instance the examination taken at the end of the primary course in which the average scores for each school are compared among schools which presented candidates without taking into account differences in aptitude of the students and the circumstances in which the tests or examinations were administered.
(ii) The Longitudinal Model - which measures the growth of the students as they progress through the system from one grade to another. Success at each examination barrier or grade entails that the expected outcomes of the system have been adequately attained by the students to proceed to the next grade or level. In this model the test will be designed according to the purpose for which it is intended i.e. if the system of education is highly selective for a person to move from one grade to another, such selective measures will be applied; and if it is for placement or guidance the tests will be administered accordingly.

The longitudinal model is useful in guiding teachers towards the students' growth in the attainment of objectives and provides indicators as to whether the student is capable of continuing with the programme at the next grade or level.

(iii) The Cross-Sectional Model - Since neither the one-shot model nor the longitudinal model are in themselves sufficient measures of expected outcomes, the cross-sectional model can be used as a compromise between them. The model is a test or examination which is given not to the same students but to the current students in the same grade at the same level and the achievement scores used as proxy input to the grade higher than the one being tested. This model does not assess the students' individual growth but is used to measure the growth of the school or of the system. It is therefore reasonable to argue that this year's students performed better or worse than last year's students and therefore should do better or worse at the higher grades.

Many of the usual examinations administered in many countries are designed to show how far a student is above or below the average marks of the group with which he was being compared; and how far the average marks of the class or school were above or below the average or group with which they were being compared. At the same time, there is a marked difference between examinations designed for selection of students to the next grade or level, or those examinations designed to sort out students between the above-average and below-average groups; and test designed to measure how far the objectives of education were achieved. What needs to be stressed here however is that while traditional examinations relating to knowledge are usually designed to measure individual differences and to provide exact average marks for classes or schools, assessment exercises should aim at providing information on the overall progress of school children and not merely assemble data on the knowledge of the average child in school.

In Africa, most countries assess the outcomes of education through the traditional examinations or through standardized tests. In general it would appear that there is no difference between the two (traditional examinations and standardized tests), although such a difference appears to be one of form. But since the objectives of assessment pursued by both traditional examinations and standardized tests are different, the main difference between the two must lie in the techniques used. To this end therefore, examinations tend to judge the pupil in relation to other, whereas, the test tends to judge the manner in which the message had been conveyed.
Whatever measures we prefer to use, (tests or examinations) it must be emphasized that if the main aim of assessments is to determine the acquisition of knowledge and skills and the extent to which the value added by education has been attained, then there is need to select better measuring instruments and not just traditional examinations and tests. Evidence shows, however, that research in the selection of measuring instruments is far from complete. There is need for refinement.

One major problem of assessment of educational outcomes is that assessment of terminal pattern of skills and knowledge of the individual, must also reflect the expectations of society in which the individual lives or enters. To this effect then, it would be expected that an individual’s worth was measurable prior to undergoing an educational process so that upon completion of the educational programme, assessment instruments could measure the value added by computing the difference. But since we do not have such refined instruments to measure such a difference, and because there is generally a lack of clearly defined educational objectives, assessment can only remain superficial, that is, a certificate of performance in conformity with broad objectives as spelt out at national level. Provided the important criteria for assessment instruments are embodied - namely - objectivity, reliability and validity, present assessment procedures will continue to be used until better ones are devised.

IV CONCLUSION

In this paper, it has been argued that the main task of education process is to change the learners in desirable ways. To this end, therefore, we need to define clearly the aims and long-term objectives of educational systems so as to help students change in the right direction. Secondly, it has been pointed out that it is the primary task of teachers, administrators and curriculum planners to specify in precise terms the ways in which students will change by the learning process. Further we have argued that teachers are expected to make a series of decisions if they are to effectively help students change in the desired ways. We then postulated that it is the role of evaluation to provide appropriate evidence to help both teachers and learners attain the goals of instructions, and hence the need for assessment. This situation is best explained in diagramatic form as an instructional system design (Annex I), that is a system for learning. It is a decision making operation involving decisions about what should be learned, how, by whom, when and where, how learning should be evaluated and improved and what resources should be involved in preparing and providing for learning.

Thus in assessing student outcomes, we pointed out that evaluation instruments (especially summative evaluation instruments) offer an operational definition of the matrix of content and behaviours. Traditional examinations, therefore, administered at the end of a course or programme tend to be used as an appropriate evaluation instrument to determine what the students have learned by responding appropriately to questions and tasks situations given to them. In this way evaluation plays a vital role in providing both the teacher and society with the information needed to determine the extent to which students behaviours have changed. Unfortunately, evaluation techniques and measuring instruments need perfection if we are to derive satisfaction from both the individual’s and society’s points of view.
Development of Instructional System Design and its Evaluation

ANALYSIS AND FORMULATION OF OBJECTIVES

- Statement of purpose
- Specification of objectives

ANALYSIS AND FORMULATION OF LEARNING TASKS

- Inventory of learning tasks
- Assess input competence
- Learning tasks identification & characterization

DESIGN OF THE SYSTEM:

- Function analysis
- Component analysis
- Distribution of function
- Scheduling

Implementation & Quality Control

- System training
- Install
- Evaluate

Source: Modified from T.A. Razik - IIEP Lecture Discussion Series No. 45 Figure 10, IIEP Paris, 1965
BIBLIOGRAPHY


Gagne Robert M. - "Educational Objectives and Human Performance" in Krumboltz J.D. Learning and the Educational Process, Chicago, Rand McNally, 1965

Mager Robert - Preparing Instructional Objectives California, Fearon Publishers, 1962


Tyler Ralph - Basic Principles of Curriculum and Instruction, Chicago, University of Chicago Press, 1949

