

# ASSESSMENT and EVALUATION

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Mr. Chairman, Ladies and Gentlemen.  
My brief this afternoon concerns the subject of Assessment and Evaluation particularly that aspect of it relating to the Educational Process.

I intend to present for consideration methods we have found suitable for evaluating the study of Radiographic Technique in Nigeria.

It is apposite at his stage to come to an understanding as to the meaning of the words "Assessment" and Evaluation".

The Oxford Universal Dictionary defines "assessment" as "the action of assessing; the amount assessed, the official valuation of property or income for the purposes of taxation, the value assigned to it". It also defines "evaluation" as the action of evaluating, working out the value of; finding a numerical expression for, reckoning up; ascertaining the amount of; expressing in terms of the known.

From the foregoing, I propose to cull out definitions which are relevant to the object of this paper namely that 'Assessment' is a way of measuring a student's ability using his initial performance as the parameter (Standard of Judgement). It is a measure of progress. 'Evaluation' would be the measurement of a student's ability against a known standard (external criterion).

## Teaching Method

The acquisition of skill in the practice of the radiography of any part of the body or system involves both the teaching and learning processes.

Ideally, these processes commence in the classroom and end in the radiographic department. The method of instruction depends on the subject matter and the teacher's fancy. Generally we have adopted the "lesson" method,

by which I mean, imparting knowledge partly by lectures and partly by tutorials and or demonstration.

As already stated the classroom teaching should ideally precede the department but situations arise such as in the radiography of the chest where students are more likely to have gained a preliminary acquaintance with the practical procedures before formal lectures on the part are presented to them. In such cases the students practical 'experience' is reinforced by theory as presented in the classroom followed by demonstrations the students using dolls and their colleagues in practising positioning techniques under the close supervision of their tutor. This eliminates the tendency for students to ape any undesirable habits from their mentors in the departments.

Radiographic dolls may be used in producing actual radiographs by students thus apart from giving them an opportunity of practice without danger to a living patient, allowing the teacher to assess the individual student's practical performance preparatory to real clinical radiography. The Teacher (and fellow students) may ask the student being tested questions which give an insight into her level of understanding and her appreciation of the reasons for the various manoeuvres.

## Relationship of Theory to Practice.

New students coming into the school (Federal School of Radiography) are not allowed straight into the X-Ray Departments. They spend the first three months learning about Hospital Organisation and Hospital Staffing and their place in relation to the patients and other members of hospital staff. They are also introduced into the terminologies of radiographic technique leading gradually to the examination of the anatomical systems. Paripassu with this they are taught in general

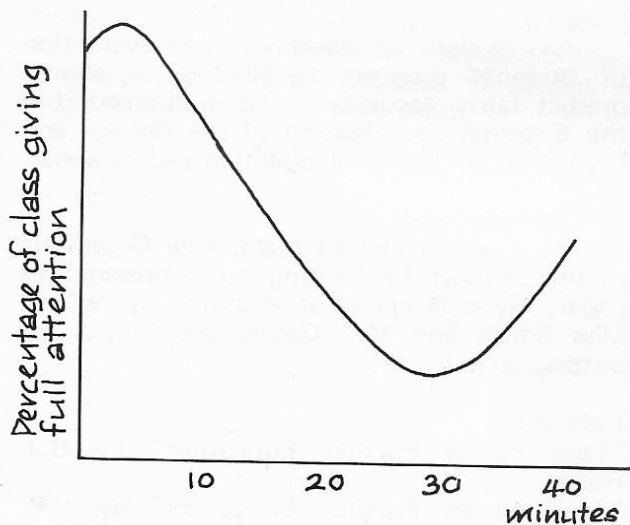
survey, the anatomy and physiology of the body systems.

We have a Demonstration X-ray department yet to be commissioned wherein we hope to introduce students to patients and radiographic practice under the supervision of the tutors before posting them to practising departments as at present obtains.

**Assessment** We undertake this in various ways and at various times in any of the following forms:-

- i. Spot Questions during lesson which may be written or oral.
- ii. Assignment and Homework
- iii. Weekly/Terminal/Sessional Tests
- iv. Practical Assessment by—
  - (a) Inviting individual students to demonstrate during lessons
  - (b) Terminal Exercise (Proforma I)
  - (c) 'Radiographers' Confidential Report (Proforma II)
- v. "MOCK" DCR Examination preceding the External Examination for the Diploma of the College of Radiographers.

- V. Spot Questions:— This is aimed at motivating, stimulating and holding the attention of the students at all times to achieve the defined objective through class control. Participation by the students is encouraged



by impromptu questioning and activities designed to offset the tendency to diminishing attention. (vide Graph below showing the variation with time of the % age of students in an average class giving full attention to a lecture.

Spot Questions suitably timed, therefore, not only offer a means of assessing a student's degree of attention and assimilation of the subject matter but also create diversion from the inevitable boredom of a lecture in monologue.

We have found also that impromptu written tests, despite students' initial feeling of mild resentment, stimulate the students' ability to recall from memory what they have learnt, and also help in assessing the students' true knowledge at anytime as opposed to what is hastily crammed overnight when notice of a test is given. Such tests frequently given, compel the students to master quickly and in sequence, what they are taught rather than to accumulate same and attempt to gobble them in one fell swoop when a major examination is imminent.

As we all know too well, such rushed studies very rarely succeed in making the students satisfy the examiner or become good radiographers. Impromptu Tests give both students and teachers the opportunity of assessing their progress and indicate what revision is necessary. Like Tests in general, they reveal to the teacher what she is doing well and what she needs to do better; they also tell the student the result of his personal effort at study, his attention at lectures and to the practice of radiography. We do not however record the results of these impromptu tests in the student's progress report file.

**(ii) Assignment and Homework:**— This is designed to induce a sense of self reliance in the student by giving him work to do at home where help is not readily available. It is a form of "do it yourself". The homework when written is marked and handed as soon as possible back to the student to guide him in his future studies. Students are given assignments involving presentation of papers on selected topics in class. Fellow students (and the teacher) are expected to ask questions and to offer relevant criticism on the mode of presentation.

(iii) **Weekly Terminal/Sessional Tests:-** Students are forewarned for the tests which take the form of written scripts, based on work covered during the term or session. The results of these tests form part of the student's progress record.

(iv) **Practical Assessment:-** Because the Department of the Federal School of Radiography is yet to be functional owing to our inability to recruit clinical instructors and the lack of some infrastructure we are obliged to send our students out to the main hospitals in the Lagos State and a few others outside Lagos for the purpose of practical work. The main disadvantage is that radiographers working in busy departments may be unable or unwilling to supervise the practical work of the students and so our assessment tends more to be theoretical than practical. We try to rectify this by introducing two Proformas as guidelines in the assessment of the students' practical skills (psychomotor skills.)

**Proforma I** is completed by a Senior Radiographer in the Department of Practical Instruction and a Radiography Tutor from the school. Each student is forewarned of the exercise but he is not told beforehand the project area concerned. Assessment is based on the assumption that "skill is knowledge of the methods of accomplishing a given task and the ability to use that knowledge effectively in the performance of that task". A student will be deemed to have acquired skill only when he obtains satisfactory results within reasonable time.

**Proforma II** is completed by the most senior Radiographer or any other departmental staff to whom the responsibility has been delegated, at the end of each two-month period of practical work in the department of posting. The information obtained from this assessment is, however, too generalised and does not permit as true an appraisal of each student as might be obtained in the discussion of each student with the supervisor radiographer concerned. We hope presently to evolve a new Proforma that will yield a more objective appraisal of individual student indicating to the teachers the areas of study needing more emphasis.

**"Mock Examination for the Diploma of the College of Radiographers" (DCR)**

Prior to the DCR Examination the students are made to appear for a full scale examination

under the stipulated conditions for the definitive examination. All subjects for the DCR Examination are presented including Radiographic Technique.

The Principal is guided by the results of this examination as to which students are fit to appear for the external examination. Generally, Literal Marks are awarded for each student's performance using an eleven point scale. (0 - 10).

It has been argued that this system is subjective and that the teacher's assessment of a student may be coloured (howbeit unconsciously) by any unfavourable impression created in the teacher's mind by an extra-curricular act of the student, that this 'halo effect' would almost invariably affect the students score adversely. However, most teachers try to be as objective as possible in awarding marks and the setting of objective or structured questions will very largely mitigate this so called "halo effect"

**Conclusion:-** Getting the required knowledge across to students and developing their skill, as in most fields of human endeavour, require a continuous monitoring of the individual student's theoretical and practical ability with feed back to the student concerned to help him realise his individual progress and his achievement in relation to generally accepted standards.

The results of the external examination for the DCR are not only decisive for the student in his aspiration to his chosen career but offer an opportunity of evaluating the effectiveness of the system of training to which he had been exposed.

Any system of assessment and evaluation of students' progress, to be effective, should predict fairly accurately a student's rating in the External Examination of the College and his ultimate skill as a qualified radiographer.

#### **Acknowledgement**

Finally I would like to thank the Organisers of this seminar for inviting me to present this paper, my colleagues for encouraging me and Miss Smith and Miss Gasper the typists for putting up with me.

#### **References**

- "Teaching in Further Education" by G.J. Russell
- "Teaching in Further Education" by L.B. Curzon