Staff Development Center
Wayamba University of Sri Lanka

Improving Teaching in Higher Education Through Effective Assessment

Selected Topics

Edited by
Udith Jayasinghe, Ph.D
Ajith Jayaweera

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Foreword

It is with great pleasure that I write this foreword to the latest publication of the Staff Development Centre (SDC) under the theme of *"Effective Assessment Criteria for Students in Higher Education".* The launching of this publication is coupled with the Certificate Awarding Ceremony for the 3rd batch of the Certificate Course in Staff Development conducted by the SDC.

The SDC has impacted the teaching in higher education not only at the Wayamba University of Sri Lanka but at most of the other National Universities through the training of academic staff participating in the Certificate Course in Staff Development. Effective assessment is a very important aspect in higher education, which helps the teachers to assess the standing of the students and direct them to greater levels of achievement.

I take this opportunity to complement the SDC for their achievements since inception towards the improvement of the staff of the University system and thereby improving the undergraduate education. Thus, the SDC plays an important role in producing quality graduands to meet the needs of the country and the region.

While congratulating the Staff Development Centre for launching yet another batch of trained academic staff members to meet the challenges of higher education, I wish the participants and the Centre well for their future endeavors to reach higher levels of achievement.

Prof. A. N. F. Perera
Vice-Chancellor
Wayamba University of Sri Lanka

Preface and Acknowledgment

This text contains five articles written on the theme of *"student assessment"*, in general, and how the process of teaching in higher education can be improved by applying effective assessment criteria, in particular. The authors were Probationary Lecturers work in various National Universities in Sri Lanka who were trained by the Staff Development Centre (SDC) of the Wayamba University of Sri Lanka (WUSL) under its "Certificate Course in Staff Development" (CCSD), which is a 150-hour course accredited by the University Grant Commission of Sri Lanka.

This is the 3rd of a series of books published by the SDC, WUSL on similar topics. The response we received from various stakeholders in staff development in the national university system as well as others involved with the field of education has motivated us to publish this text at a right time it is needed. In fact, our opinion is that "assessment criteria" is one of the least addressed areas in higher education in Sri Lanka, and failure of the most well organized course structures is resulting from their inability to address proper assessment criteria.

In this shed of light, this particular book includes a number of articles written to cover a wide area in assessment, including the impacts of conventional and innovative assessments on teaching and learning environment in higher education, the ways and means a teacher can align his / her assessment criteria with the intended learning outcomes of the course, the impacts of effective assessment to enhance quality of university education, and some empirical studies such as effectiveness of continuous evaluation methods adopted in management faculties in Sri Lanka. We wish that the academics in the university systems as well as any personality involves with teaching at higher education level may use this text to enhance the process of teaching and learning.

Out of many who helped us from various points of views to come up this type of text, we would like to convey our sincere gratitude, first, to **Prof. A. N. F. Perera**, the Vice Chancellor of the Wayamba University of Sri Lanka for his continuance guidance and support extended to us to come up with this type of publication. Also, the support extended by the Registrar and the Bursar of the WUSL their staff is acknowledged.

While extending our thanks to **authors of the five articles** published in this book, we do not forget the good work of **all Probationary Lecturers** who participated to the *Certificate Course in Staff Development (CCSD) – 2008/09* conducted by the Staff Development Centre (SDC) of the WUSL by submitting articles written on various topics for consideration in publishing in this book. Also, a special thank goes to all **Resource Persons to the CCSD** who taught these and many others aspects of teaching and learning to these authors.

Special thanks go to **Mr. Ikram Mohideen** (Lecturer – Temporary at the Dept. of Agribusiness Management of the WUSL) for his untiring efforts to go through the final drafts of each article edited by us for appropriate formatting. Of course, that helps us to come up with much user-friendly version of this. Also, I extend my gratitude to **Mr. Kapila Ranaraja** (Computer Application Assistant of the Dept. of Agribusiness Management of the WUSL) for designing an attractive cover page for it and for page setting and to **Mr. Tharaka Wijesooriya** (Research Associate – NSF / DABM Project) for his support to make our efforts successful.

Prof. Udith Jayasinghe (Director)
Ajith Jayaweera (Course Facilitator)
Staff Development Centre (SDC)
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04th April 2010

Content

IMPACT OF CONVENTIONAL AND INNOVATIVE ASSESSMENT ON TEACHING AND LEARNING

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What is Assessment?

Assessment is the systematic collection, review, and use of information about educational programs undertaken for the purpose of improving learning and development. All forms of assessment provide estimates of the person's current status. In general, the outcomes of assessment may:

- Provide data/information for learning
- Engage in analyzing and using this data / Information to confirm and improve teaching and learning
- Produce evidence that students are learning
- Guide in making educational and institutional improvements
- Evaluate the improvement

Assessment plays an indispensable role in the education and it is a fundamental driver of what and how students learn. Moreover it makes the "*bridge between what is known and what is yet to be discovered*". When assessment tasks are

embedded in the teaching and learning framework, there is a greater chance that students will achieve the learning outcomes and be enriched by the experience. Used with the skill, assessment can motivate the unmotivated, restore the desire to learn, and encourage students to keep learning. Assessment methods and requirements probably have greater influence on how and what students learn than any other single factor (Boud, 1988)[1].

As below assessment can be used to achieve a number of different functions:

- To reward
- To motivate
- To know what they know
- To know what they don't know
- To punish
- To certificate
- To classify
- To compare
- To evaluate
- To diagnose
- To appraise
- To empower
- To improve the quality of learning

[1] Boud, D. (1998). *Current Issues and New Agendas on Workplace learning*, Adelaide: National Centre for Vocational Education Research.

Different Types of Assessments

Assessment is often divided into "formative" and "summative" categories for the purpose of considering different objectives for assessment practices.

Formative Assessment:

This is generally carried out throughout a course or project. It is often done at the beginning or during a program, thus providing the opportunity for immediate evidence for student learning in a particular course or at a particular point in a program. Classroom assessment is one of the most common formative assessment techniques. The purpose of this technique is to improve quality of student learning and should not be evaluative or involve grading students.

Summative Assessment:

This is generally carried out at the end of a course or project. In an educational setting, summative assessments are typically used to assign students a course grade. This is comprehensive in nature, provides accountability, and is used to check the level of learning at the end of the program.

For example, after completion of a program, students will have the knowledge to pass an accreditation test, taking the test would be summative in nature since it is based on the cumulative learning experience.

Assessment and Student Motivation

Assessment drives learning through motivation. The assessment informs students about the real goal or goals. Then, they have a feeling to achieve this goal and likelihood of reaching them. Therefore, assessment forces the students for learning on motivation and achievements. Students' motivations vary and may change throughout the course.

The distinction is often made between intrinsic motivation (to understand the subject) and extrinsic motivation (for the reward of a certificate or employment). For instances, many students may arrive more with the hope of gaining a degree than with a thirst for knowledge of computer science.

Conventional and Innovative Assessments

Conventional and innovative assessments, both of them have the same objectives although their methods of assessments, as well as benefits and drawbacks are different. Assessment can be used as both "*carrot and stick*", that means if any student performs better in their examination, he/she will get rewards and if their performances are bad they will receive punishments.

Conventional Assessment

Our traditional ways to use assessment of the students learning is most probably based on paper and pencil. It gives rewards and punishments. Reward behavior leads

to learning, doing homework and getting in it on time, preparing for class discussions, participating in class discussions, trying hard, and so on. Punish behavior does not lead to learning, doing homework or getting it in on time, being prepared for class, participate in class discussions and trying.

Characteristics of Conventional Assessment

- It is associated to a course or program
- It is included in final examinations
- It is used marking scales as passing criteria
- It should be done within limited periods of time
- It uses statistical comparisons
- It has not wide range of question styles
- It is difficult to maintain a question bank
- It is not easy paper marking
- It is used manual marks entering to the computer

Traditional assessment can be held as formative as well as summative. When the student is getting ready to face the examination, the teacher also has a major role for preparation of the exam papers. Usually, paper assessments are coming as common ways and it is very limited to change the way of presentation of the paper.

In addition to that, teacher is difficult to make the different types of questions since maintaining of questions bank is not an easy task. It takes place over a period of time (weeks or months) or at the end of a chapter or unit. Exam papers use multiple-choice, structured and essay type questions, or short-answer

tests. Students are tested individually. All students receive a letter or numerical grade and emphasis is on pass /fail. Subject areas are isolated as well as test material is often isolated from real-life situations.

Students achieve "success" with low levels of cognition. Students face the examination alone, therefore they may fear that. Some become much stressed and may suffer from depression. The teacher has to take more time to do the correction of papers; in addition to that, they need to enter the examination results.

Traditional closed examinations are de-motivating for most students. They predominantly generate negative emotions such as fear, panic, and anxiety. The traditional timed examination is likely to measure a great deal more than just the ability to acquire and utilize knowledge. For many students, the stress of examinations makes them ineffective tests, and unlikely to provide a positive motivation for many students. Students frequently criticize conventional assessment, especially traditional exams, seeing them as artificial and unfair but, at the same time, may prefer them because they are familiar and less time-consuming. Some students have always been good at exams; "*from their point of view - why rock the boat*"?

Innovative Assessment

Literally defined, innovative assessment could be any form of assessment which involves the application of a new technique or method. The students and teachers

have the tendency of innovative assessments than the conventional assessment. For the sake of argument, we can contrast traditional examinations and coursework with "innovative assessment" such as computer assisted assessment, group assessment, self assessment, peer assessment, and portfolios. Students often get more involved in innovative assessment and think innovative assessments are interesting and help them to learn. Mainly, it is a genuine attempt to improve the quality of learning in higher education. In addition to that, it aims to produce a more fertile learning environment and a more rewarding learning experience for all teachers and students.

In particular, the act of applying assessment criteria to their own work, and each others' work, can help students to want to achieve fully the associated learning outcomes. Novelty can be an advantage but unfamiliar assessments can also cause anxiety, especially if it seems the tutor is experimenting. Students need a process of familiarization and practice with any new assessment method before it is used in earnest.

Types of Innovative Assessments

1. Computer assisted assessment (Use of Information Technology in Assessment)

2. Group assessment

3. Peer assessment

4. Self assessment

Computer Assisted Assessment
(Use of Information Technology (IT) in Assessment)

Increased number of students in higher education and the corresponding increase in time spent by staff on assessment has encouraged interest into how information technology can assist in this area. Information technology can be used for assessment purposes at various levels ranging from the management of the assessment information to a fully automated assessment system.

IT can enable information to be presented in different ways to meet the needs of different audiences such as teachers, students, course organizers, and external examiners. Not only the quality of presentation of reports, but more importantly the range and scope of their content can be improved by utilizing technology.

Advantages in the use of IT for assessment,

- It has new and improved assessment methods
- It emphasizes deep learning rather than shallow
- It is cost effective
- It saves staff time
- It is used more frequently in formative and summative assessment
- It reduces time for marking
- It is useful for self-assessment; in the student's own time, at their own place and when they are ready

- It is increased student confidence
- It provides rapid results
- It gives immediate feedback

Most students like computer based tests since they are less stressful than paper based assessments and there is not much pressure. The motivational impact of the assessment has less to do with its electronic nature than with its tutorial design. Electronic support often makes such assessment feasible with limited resources. Obviously, the academic issues are important rather than the technical ones, although technology often makes feasible new educational designs. While students are just as anxious about IT as about traditional exams before taking them, they are very positive about them afterwards. The students can enjoy the experience more than traditional examinations. Although computer anxiety is the major drawback of CAA, this can be expected to be negligible in computing students. However, some anxiety was due to unfamiliarity with the type of tests, so students need practice with these.

Facilities in Computer Assisted Assessment

Electronic delivery of tests

Various types of questions can be created using computer, for example multiple choice questions (MCQs), structured questions as well as essay types. Examiner is able to change the way of delivery of the examination.

Multiple Choice Questions (MCQs)

MCQs can incorporate a wide range of question styles. In addition to standard multiple choice questions, for example, multiple response, word entry, number entry, gap fill and free-format are some of them. Several packages are available, which are designed for the electronic delivery of MCQs, for examples, Question Mark, Examine, EQL Assessor, all of which support the delivery of a variety of question types.

Entering questions is generally straight forward, requiring minimal experience with the package. Although the design of questions for computer based delivery is no more difficult than the paper based tests. When the test has been completed the students' responses are marked automatically, quickly, and consistently.

Structured questions

Electronic delivery of tests need not be restricted to MCQs, and the results recorded need not only be whether a response is right or wrong. Questions can be split up into several stages, and marks can be awarded at interim stages before a final answer is determined. Marks can be deducted if hints have been provided. For students who have made a slip, the computer can identify an error; offer the possibility of going back, correcting an interim answer, and enabling the student to successfully reach the final stages of a question.

Electronic generation of tests (with question banks)

In addition to using electronic packages to create unique tests, it is possible to use the computer to generate different tests automatically. Electronic selection of questions from a bank has already been mentioned as one possibility for the electronic generation of tests. The creation of a question bank is a difficult task for a single person, however, where several members of staff collaborate to share questions a large bank can be established relatively quickly. From this a huge number of different tests can be generated.

Electronic recording and analysis of results

The most obvious and most easily accessible use of technology to assist the assessment process is in the recording, analysis, general storage and management of results. A wide range of spreadsheets, statistical packages, and database packages are available (e.g. Excel, SPSS, Minitab, and Access).

Results from several assessments, courses, or modules can be gathered quickly, easily, and accurately for discussion at examination boards. In addition, the volume of paper required for long term storage can be dramatically reduced. Further, any trends within the data can be fully explored. In turn, this provides valuable feedback for the academic team.

Electronic scoring tools

The manual entry of marks is particularly susceptible to error, time consuming, and costly to check thoroughly. The use of data capture devices, such as an Optical Mark Reader (OMR) connected to a computer, can vastly reduce input errors. A pencil or pen mark is made on the form by the student to indicate each selected response. No special training is required. These marks are scanned by an OMR to detect the presence of a mark. Large quantities of information can be entered on the computer without the need to use a keyboard increasing accuracy and saving time.

Security considerations

One obstacle which can prevent teaching staff from utilizing technological solutions to administer student assessment is the worry of security. Some practical methods can be applied to protect the security in assessments. When considering delivering assessment on computer, it is possible to password protect the file containing the test and also to prohibit the access until after a particular date. To overcome the possibility of students copying from each other's visual display screens, the possible responses to each test question can be displayed in a different order.

Also databanks of questions can be used which means that each student is taking a comparable but not identical test. There is of course the problem of obtaining access to sufficient equipment to deliver a test to all students in a class at the same time. This does

require careful preplanning to book the facilities and to ensure that the test is available on all the machines simultaneously.

Technology as an administrative and management tool

There are a number of examples of Integrated Learning Systems (ILS), where entire course structures, lectures, practical assignment schedules, and supplementary resources are held electronically, and available for student consultation whenever needed. The management of assessment schedules is just one small part of an ILS, and an equivalent benefit is available through the use of other, less holistic tools.

For departments where electronic mail is available this offers both tutors and students an efficient and straight forward means of communication. One application is to use e-mail to remind students of impending deadlines. Even students who are absent when the message is first posted are certain to receive the message when they next access their mail. Similarly any changes, revisions to the assignment, or hints can be delivered to all students.

Assignments can be submitted electronically. For distant learners this avoids the need to rely on the speed of postal services. For all students the date and time of delivery is automatically attached, so meeting deadlines can be monitored accurately. Computers are an ideal tool to track attendance or achievement records, allowing monitoring of trends, for individuals and

cohorts, comparison between years or classes and early identification of problems.

Methods of Computer Assisted Assessments

There are various methods to evaluate the students based on the computers. For examples, the prepared questions in each subject can be stored inside the Compact Disc (CD) or Digital Versatile Disc (DVD) and they can be provided to the students to use as the assessments.

If anyone has network facilities, a server will help to keep the questions as a bank, and then students are able to log into the server using their own username and password. Online assessment (e-learning) is the new evaluation method right now, in which Learning Management Systems (LMS) can be used.

It has the facilities to prepare various types of questions in different ways. Many e-learning assessments have the standard multiple-choice questions, which generally includes small set of responses from which students are expected to select the best choice.

This is a very easy method even though the initial cost is high. It has a question bank, which facilitates to provide the various set of questions time to time to the students. In the present, there are some examinations, which can be done as only online, for instance internet based TOEFL (iBT)

Internet-Based TOEFL

The Test of English as a Foreign Language evaluates the ability of an individual to use and understand English in an academic setting. It is an admission requirement for non-native English speakers at many English-speaking colleges and universities. Since its introduction in late 2005, the Internet-Based test (iBT) has progressively replaced both the computer-based (CBT) and paper-based (PBT) tests.

Although initially, the demand for test seats was higher than availability, candidates had to wait for months. It is now possible to take the test within one to four weeks in most countries due to iBT. The process related to the test as registration, payment, reservation of test location and dates, examination and scores are done online. What's more, lots of sites are available to prepare for the examination.

Group Assessment

Here the students of a whole group are assessed and they gain the integrity marks for group work. Methods in which students work collaboratively and then assessed individually may solve these problems. The students in the group can share the knowledge, clarify the things, update the information, etc.

Clearly, any student anxieties about the fairness of shared grades will undermine the benefits of group learning. Various types of assessments can be provided to the students, for instance, assignments, making

reports, presentations, and roll play. Roll play is a good assessment practices in adult learning, however, it can't be practiced individually.

This is better for teachers who can assess the students just at the evaluation time so, they can reduce the time of correction of papers and paper preparation time. Further, the teacher can share the information with the students as well as they can advise to the students to improve their knowledge. Nevertheless, the students in one whole group are having the same marks even more knowledgeable students. On the other hand, the students with not as much of the knowledge may be able to get good marks.

Peer Assessment

Peer assessment is assessment of students by other students, both formative reviews to provide feedback and summative grading. Peer assessment is one form of innovative assessment, which aims to improve the quality of learning and empower learners, where traditional forms can by-pass the learners' needs.

Advantages of peer assessment for students as

- Improving motivation
- Encouraging students to take responsibility for their own learning, developing them as autonomous learners
- Treating assessment as part of learning
- Practicing the evaluation skills

- Providing internal self-assessment of a student's own learning
- Encouraging deep rather than surface learning

What are the potential problems of peer assessment? There is a trouble with the validity and reliability of assessment done by the students. Because the students are not trained like teachers they have not much experience and not superior about the subject matters to evaluate the students. In some there is a tendency to over-mark as well as under-mark. Some students may not get the responsibility of assessing and anxieties about the accuracy of marking.

Finally, the overall balance of assessments in a course is vital. With the fast moving world and the new technology innovative assessment like computer assisted assessment is better for teaching, as well as learning. Computerized testing facilities can provide a rapid means of assessing and providing feedback to a large number of students. It is an assessment tool which is unlikely to reduce significantly the burden of assessment, but can be used to promote deeper and more effective learning, by testing a range of skills, knowledge, and understanding.

ALIGNING ASSESSMENTS WITH INTENDED LEARNING OUTCOMES

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What are Learning Outcomes?

Learning Outcomes, also known as *Learning Objectives*, *Behavioral Objectives* or *Performance Objectives*, are statements which describe what the learner is expected to achieve as a result of instruction. These statements indicate the end result for a learner following a learning activity; usually states what can be observed as the learner would do at the end of a learning activity. Because they direct attention to the student and the types of behaviors (knowledge, skill and attitude) they should exhibit, sometimes these statements are called "behavioral" objectives.

Mager (1962)[2] argued that the use of specific, measurable objectives can both guide courseware development and aid the students in the learning process. Gagne *et al.* (1992)[3] on the other hand have

[2] Mager R. (1962), *Preparing Objectives for Programmed Instruction*, Fearon Publications, San Francisco.

[3] Gagne, R. M., Briggs, L. J., & Wager, W. W. (1992). Principles of instructional design. Fort Worth: Harcourt Brace Jovanovich.

introduced a theory in which the idea of 'instructions' are called as "conditions of learning".

They break these down into internal and external conditions where the internal conditions deal with previously learned capabilities of the learner. In other words, what the learner knows prior to the instruction. The external conditions deal with the stimuli that are presented externally to the learner. Learning Objectives can be applied directly in Gagne's external conditions of instruction, which is to inform learners of objectives.

Brief History of Learning Outcomes

Concepts of objectives were notably used during World War II, as a way to make teaching and learning more efficient. The objective-based learning approach was applied in public schools in late 1950s and in 1960s. By the 1960s health profession schools were developing behavioral objectives. Robert Mager can probably be credited with launching the move toward the broad based movement to utilize learning objectives. Presently, the concepts of Learning Outcomes have become common and a regular practice in educational institutes of every level.

"Well Defined" and "Poorly Defined" Learning Outcomes

Clearly defined Learning Outcomes are an essential part of a successful study program. Learning Outcomes are the evidence of learning and teaching effectiveness of a student that demonstrates it is fulfilling its educational

mission. A closer look at a set of example Learning Outcomes is therefore worthy for consideration. Following is an example set of poorly defined Learning Outcomes for a course teaching how to operate a telephone followed by a set of well defined Learning Outcomes for the same course.

A poorly defined objective is, "*In this course you will learn how to operate the phone and properly communicate with callers*" which is a description of course content not an objective. Another example of poorly written objectives is:

After completing this course you will be able to:

- operate your phone
- know how to greet callers
- understand the procedure for transferring a call

Where the objectives do not indicate observable behaviors, making assessment of their mastery impossible. The following performance objectives are good examples of the use of observable behaviors,

After completing this course you will be able to:

- place a caller on hold
- activate the speaker phone
- play new messages on the voice mail system
- list the three elements of a proper phone greeting
- transfer a call to a requested extension

In which the objectives are built around discrete tasks. Instead of a vague objective, the learner knows exactly what is expected for successful operation. More importantly, these behaviors are observable.

A student can be watched as he activates the speakerphone or listened to as she describes the elements of a good phone greeting. Because there is no ambiguity, learner expectancy is achieved and a proper evaluation can be made.

Reasons for Developing Objectives

Among the many reasons behind having clear Learning Objectives, following are the prominent.

- Students can see how the material is related to their educational goals or to any other goals they can recognize as being important.

- The tests will correspond to the stated learning objectives. (Once learning objectives are set, assessment materials are defined.)

- Students know what to study and what they are expected to be able to do after the instruction.

- A sense of proper organization of a course. (With objectives, the topics fit together and have direction.)

In short, Learning Objectives communicate what the teacher is trying to teach; what the students are to be expected to be able to do; how their achievement will be measured; and what will be accepted as evidence that they have achieved the goals.

Outcome Based Teaching and Learning

All-roundness in knowledge, skill and attitude attributes and professional competence are intended Learning Outcomes of all educational programs. However, converting a Learning Outcome to a successful teaching and learning experience which results in a perfectly measurable set of such attributes of an undergraduate student is not a straightforward activity.

Designing teaching/learning activities and assessments to align with intended Learning Outcomes needs systematic approach from the core. A planned exercise of defining the Learning Outcomes at macro level and converting them to a set of obtainable course outcomes at micro level is therefore an essential part in any educational program. These program and course specific outcomes are the guidelines of effective teaching and learning activities and of realistic and measurable assessment of the student's final achievements.

Designing Teaching / Learning Activities and Assessments to Align with ILOs

The structure of the Observed Learning Outcome is discussed in SOLO taxonomy, which provides a systematic way of describing how a learner's

performance grows in complexity when mastering many tasks, particularly the sort of tasks undertaken in school. A general sequence in the growth of the structural complexity of many concepts and skills is postulated, and that sequence may be used to guide the formulation of specific targets or the assessment of specific outcomes (Biggs and Collis, 1982)[4].

According to Biggs, the designing starts at a macro level, where steps needed to be taken at a more generic level of program/course design (Figure 1). These macro level steps include deriving the programme aims and intended Learning Outcomes in terms of what it is intended that students should learn. He continues explaining that these outcomes, which are supported by graduate outcomes and programme specific outcomes, should match with courses of the study programme.

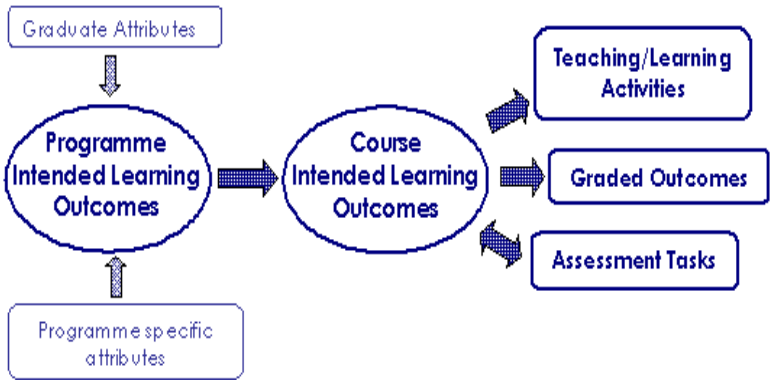

Figure 1: Aligning Learning Outcome

[4] Biggs J.B, Collis K.F. (1982), Evaluating the quality of learning: The SOLO taxonomy (Structure of the Observed Learning Outcome), New York: Academic Press

The micro level steps (course level) of Biggs constructive alignment include;

- Stating the intended Learning Outcomes of each course using *learning verbs* that can unambiguously be recognised in students' performances and that state a *level* of performance

- Engaging students in *learning activities* that require them to use those verbs

- Deciding *how well the outcomes have been learned* by using assessment tasks that also embody those learning verbs

- Determining students' final grades on the basis of *how well they have attained those outcomes*

Biggs argues that course intended Learning Outcomes with verbs like "understand", "acquire knowledge", "discuss" as unclear and vague. Therefore it is necessary to specify the level of understanding so that both the teacher and students can recognize when that level has been reached. In SOLO Taxonomy he introduces a classification of verbs that can possibly be used in these different levels (Figure 2).

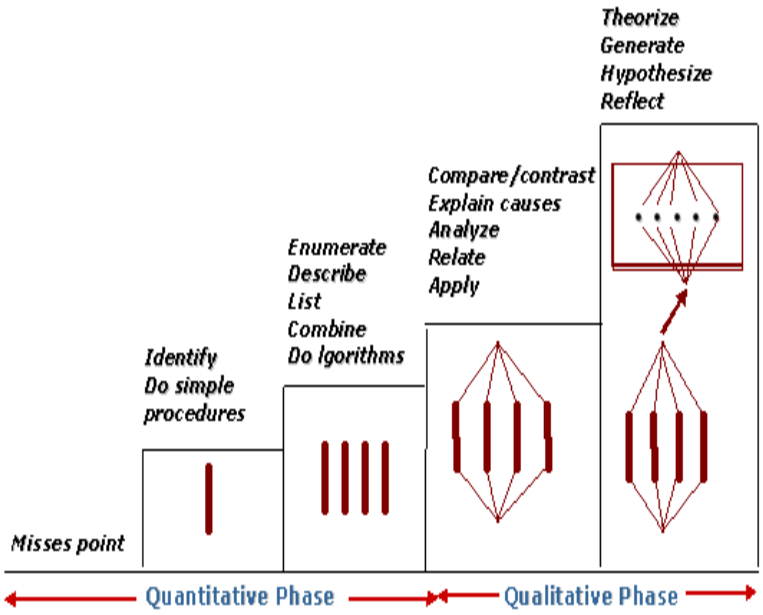

Figure 2: SOLO Taxonomy example

The Magic Triangle

The learning objectives, learning activities and evaluation are very much interrelated. If these three components are congruent, the teaching and learning is enhanced. Therefore the relationship triangle is called the '*Magic Triangle*' (Figure 3). If not, then students can be discouraged and unhappy, making assumptions that the objectives cannot be trusted. Result would be lack of attention.

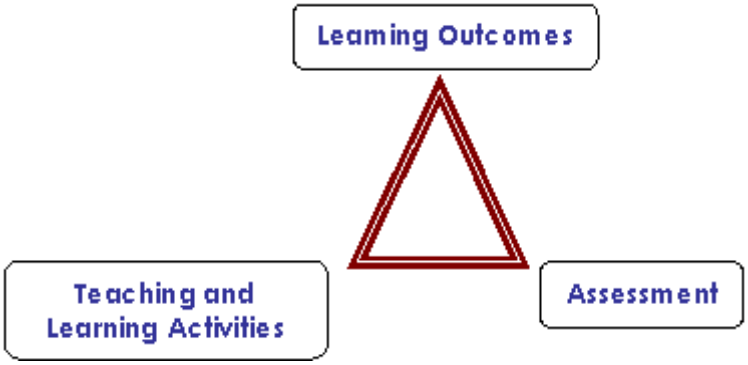

Figure 3: The Magic Triangle

Constructive Alignment

Aligning the Learning Outcomes with teaching/learning activities is essential in order for effective assessment of students. The delivery process of a course or a programme is a total reverse of course designing process (Figure 4).

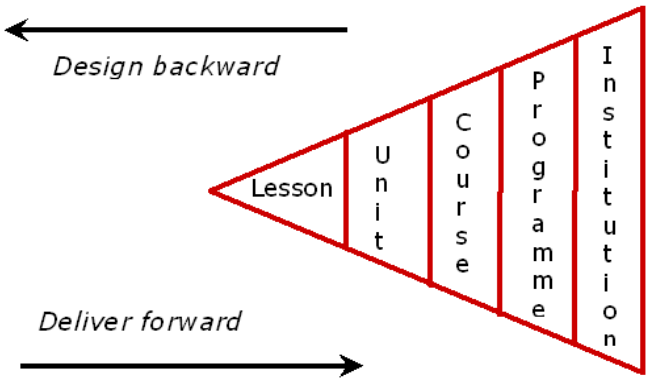

Figure 4: Design vs. Delivery of Learning Outcomes

However, a thorough co-relation among the verbs used in both these processes becomes the decisive factor of successful achievement of Learning Outcomes by students. Helping students achieve Learning Outcomes by activating the verb(s) embedded in them with suitable Teaching/Learning Activities is the fundamental behind the alignment. Obtain evidence from assessment tasks that enable the judgment of how well a student has achieved and combining all these evidence to assign a final letter-grade, based on how well the Learning Outcomes have been met. Table 1 shows the possible teaching learning activities that facilitate successful delivery of the intentions described in Learning Outcomes.

Table 1 - Converting Learning Outcomes to teaching/learning activities:

Learning Outcome Verb	Possible Teaching / Learning Activity
Acquire content	Set reading, lecture, field trip
Explain	tutorial, written essay
Integrate	project, assignment
Apply	project, case study
Solve problem	Problem Based Learning, Case study
Design, create	project, creative writing
Hypothesise	experiment, project
Reflect	reflective diary

Association of Assessment with Learning Outcomes

Assessment is the systematic, multi-step process of collecting evidence on student learning, understanding, and abilities and using that information to inform instruction and provide feedback to the learner, thereby enhancing student learning. The purpose of assessment is, to assist learning, to measure individual achievement and to evaluate programs.

Assessment of student achievement is an important part of the teaching and learning process. Given at the beginning of a course, assessments help both the learner and teacher know where to begin and/or identify areas of remediation that must be addressed. Frequent assessments during the course enable awareness of the learning progress and help identifying problematic areas where students need more help or time. Assessments provide a measure of what has been learned by the end of the scheduled delivery period. They provide the basis for making judgments on the grades to assign each student.

Assessment Methods

Traditional Assessment

The standardized assessment methods and classroom testing procedures are collectively known as traditional assessment methods. Both these assessment methods have advantages and disadvantages. Classroom tests are more flexible, can be readily adapted to revisions made

in course content, and are best suited for assessing student progress toward specific course outcomes.

Yet these types of informal assessments provide little or no information about how students are performing in a specific content area. Standardized tests are better for portraying a student's general academic achievement. However, standardized tests are broad-based and do not provide diagnostic information that teacher requires for providing learner with specific and corrective feedback related to mastery of specific course competencies.

Alternative Assessment

In contrast to the traditional assessment, alternative assessments require students to answer open-ended questions, work out solutions to problems, perform a demonstration of a skill, or in some way produce work rather than select an answer from choices on a sheet of paper. Portfolios and instructor observation of students are also alternative forms of assessment.

Self Evaluation

Self evaluation is the process in which a student engages in a systematic review of a performance himself, usually for the purpose of improvement. This may involve comparison with standard, established criteria, critiquing own work, or a description of the performance. This term is also referred to as reflection, self-evaluation, and metacognition.

Designing Assessment Plans

Effective assessment is inseparable from good teaching and learning. Similar to a good teacher would use more than one method of teaching, a program or a subject would normally employ more than one method of assessment. Furthermore, assessment activities also should be carried out at different times throughout the semester. An assessment plan should lay out a comprehensive selection of assessment methods that are aligned to the objectives and outcomes of the subject or program.

Selecting Appropriate Assessment Methods for ILOs

Every assessment method is not universally valid for every type of Learning Outcome. For example, if an intended outcome for a Computer Programming course is to 'be able to design and develop web enabled software components using Java,' measuring this outcome by asking the student to write an essay is not appropriate. Similarly most generic outcomes, with the exception of language competencies, cannot be assessed by objective tests.

Selecting an appropriate method of assessment is essential to align assessment with a particular type of Learning Outcome. A university education goes beyond mastering factual knowledge into higher order thinking skills and real world competencies. Here, developing and establishing a student's ability to think critically and creatively and to solve problems is a greater expectation.

Thus, assessment methods which focus on lower-cognitive skills like memory are far less justifiable. Instead, designing tests, exams, or assignments that can engage students in thinking and doing things that would be valuable beyond their academic lives, is a vital aspect to consider.

Such professional competence involves functioning abilities which are established on a high level of academic knowledge and relevant procedural knowledge. Therefore, when selecting the assessment methods, it is necessary to ensure that they are capable of assessing the functioning abilities in order to develop students with competence in the professional context.

The real professional, highly performance-based context is a complicated mixture of poorly defined problems, uncertainties and unexpected set of outcomes that demand qualities like teamwork and leadership. Though it seems unrealistic to achieve such level of professional competency from students', authentic assessment tasks, such as projects and placement help students to gain real-world experience through the integration of different kinds of classroom knowledge to solve the real problems in the near real-world situation

Use of Assessment Methods in Achieving ILOs

Many assessment methods can be used to assess how well a learner has achieved the intended Learning Outcomes. Table 2 summarizes assessment methods and the possible Learning Outcomes that can be assessed using them. Achievement of a Learning Outcome may

need employing several test methods. Furthermore, it is advisable that the final grade also should not be derived directly from any single test type. The focus needs to be on how well a student has met the intended Learning Outcome.

Table 2 - Test types and assessable ILOs:

Type of Test	Description	Assessable Learning Outcome
Objective Tests	• Objective tests measure the learners' ability to remember facts and figures as well as their comprehension of course materials. • Common variations: multiple-choice (MCQ), true-false, and matching items.	• Can be used to assess students' ability to recall, relate, or explain some factual knowledge which are lower-level learning outcomes • Can be used to assess simple knowledge application, which means being able to use factual knowledge and information to recognize, comprehend, interpret , diagnose and solve well-defined problems

Case Studies	• Students are given a factual description of a problem or situation. They are asked to analyze some information, diagnose the problem and prescribe a solution	• Assesses students' ability to analyze a scenario, and apply and synthesize knowledge in order to explain and/or hypothesize causes, as well as to prescribe solutions.
Essay Questions	• Most common assessment method in universities. • Two main varieties: 1. Unstructured questions: Students have maximum freedom for discussion. 2. Structured or restricted response questions:	• Unstructured questions are excellent in assessing a student's broad understanding of a topic, knowledge of related areas, synthesis, analysis and evaluation ability and writing skills • Give students the opportunity to organize ideas and demonstrate creative thinking.

	Less freedom given to determine the nature and scope of the response	
Projects	• Popular methods of assessment based on literature and/or empirical research on a relevant problem, solving real-life or simulated problems, producing technical prototypes, or preparing a business plan.	• Assess higher-order learning outcomes. • Provides more opportunities to analyze, synthesize, theorize, generalize, and evaluate knowledge in an academic context. • Promotes the application of theoretical knowledge, problem solving, synthesis of aesthetics, and technical skills with business knowledge

End-of-Chapter Type Problems	• Used to reinforce and apply some concepts and skills learned in the classroom.	• Allows to assess the student's ability to perform expected skills in a lesson • Can assess higher-order, on the spot thinking skills
Reflective Journals and Critical Incidents	• Reflective journal: Writing which allows students to record thoughts and insights about their own learning experience. • Critical Incidents : Report on critical incidents that seem powerful examples of the topic studied	• Appropriate assessment for deep learning, in which, the learner needs to reflect in order to relate theory with experience; to synthesize knowledge from multiple domains; to critique knowledge encountered; and to evaluate the effectiveness of the learning processes itself.

Seminar Presentation	• Work individually, or in teams, to investigate a topic relevant to the course and present findings in the form of a seminar.	• Broaden the scope of assessment in terms of intended learning outcomes. • Focus on communicating research findings and effective presentation techniques
Practicum and Clinical	• Assess skills and knowledge through practical tests • Two main verities: 1. Ongoing observation 2. Summative demonstration	• Measure mostly procedural knowledge • Allow the examiner to assess the reasoning ability of the student

Portfolio	• A collection of course-related work performed by the student • Written reflections in which students evaluate their own learning are central components when portfolios are used to assess course outcomes	• Can be designed to assess almost any intended learning outcomes.
Examinations	• Not an assessment method, but an assessment purpose. Exams are used primarily for grading or selection purpose. Also called as summative assessment. • Common verities : Open book tests, closed-book tests, take-home exams	• Only take a 'snapshot' of student achievement at a particular moment. May not be an accurate reflection of his/her learning

Peer and Self-Assessments	• Examinations planned focusing 'who' does the testing. • Common varieties: 1. Peer assessment: assessment of students by other students. 2. Self-assessment: assessment of learners by themselves.	• Peer and self-assessment can be built into any of assessment methods described earlier. Emphasis is on making explicit the outcomes assessed and their performance criteria by using a scoring rubric.

The verbs used in Learning Outcomes statements play a good role in deciding methods to assess them. Similar to how these verbs help converting the Learning Outcomes to teaching and learning activities. Table 3 summarizes possible assessment tasks to convert the Learning Outcomes to assessments.

Table 4 categorizes assessment methods and describes what sort of learning can be assessed using each. The results and findings obtained by using these individual tests are different and diverse. Assessment of a single Learning Outcome can be a combination of many assessment methods.

Table 3 - Converting ILOs to assessment tasks:

Learning Outcome	Possible Assessment Task
Acquire content	written assignment, exam, MCQ
Explain	assignment, exam, oral
Integrate	project, assignment
Apply	project, case study
Solve problem	set problems, case study
Design, create	project, creative writing
Hypothesise	experiment, project
Reflect	reflective diary

Table 4 - Likely kind of learning obtained by assessment task:

Assessment Task	Likely Kind of Learning Assessed
Extended prose, essay-type	
Essay exam	Rote, question spotting, speed structuring
Open book	As for exam but less memory, coverage
Assignment, take home	Read widely, inter-relate, organise, apply copy
Performance assessment	
Practical	Skills needed in real life
Seminar, presentation	Communication skills
Critical incidents	Reflection, application, sense of relevance
Project	Application, research skills
Reflective journal	Reflection, application, sense of relevance

Case study problem	Application, professional skills
Portfolio	Reflection, creativity, unintended outcomes
Rapid assessments (large class)	
Concept maps	Coverage, relationships
Three minute essay	Level of understanding, sense of relevance
Recalling tests	Appreciating significant detail, why
Short answer	Recall units of information, coverage
Letter to a friend	Holistic understanding, application, reflection
Cloze	Comprehension of main ideas
Objective test	
Multiple choice	Recognition, strategy, comprehension, coverage
Ordered outcome	Hierarchies of understanding

Stating Learning Outcomes in terms of marks obtained in an examination cannot be considered as all sensible. Learning Outcomes refer to an 'expectation' or qualities of performance. Therefore, a careful alignment of teaching activities and assessments is emphasized. If this is not done, the assessments are not aligned with Learning Objectives.

Regardless what a course intends to achieve, students are used to consider their assessments as their curriculum. Students study for exams; learn to pass the test. Therefore, the assessment practices of the teacher and the assumptions they make based on them have a

serious threat of damaging the decision and are misleading.

If the curriculum is reflected in the assessment, the teaching activities of the teacher and the learning activities of the learner are both directed towards the same goal. Well defined Learning Objectives converted effective teaching and learning activities and preparing assessments that can exactly measure the intention mentioned in the Learning Outcome is the best alignment of a successful course. Conventional assessment methods, alternative assessments and self assessments effectively employed at different stages of the teaching and learning process assure the achievement of Learning Outcomes.

ROLE OF THE TEACHER IN ASSESSMENT

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Introduction

This paper explores the role of the teacher in assessment, which is a process entirely integrated with teaching and learning. The teacher is no longer considered to be a transmitter of knowledge, but an integrated role as a facilitator, information provider, resource developer, planner and assessor of student learning. The student is no longer considered to be a receiver but a constructor of knowledge. Therefore, they are no longer expected to behave solely as the 'one who checks' and the 'one being checked' in assessment. Assessment should be seen as gathering of information by both the teacher and students about their teaching-learning situation, in order to help them in their decisions. Assessments are powerful educational tools that serve many functions. It is up to the teachers to understand their role in assessment and to work with students towards successful realities.

Phases in Assessment

To identify teacher's role in assessment, it can be presented as a cycle that is subdivided into a number of

phases. They are assessment planning, implementation, interpret the evidence, and use the results, which are interrelated with each other.

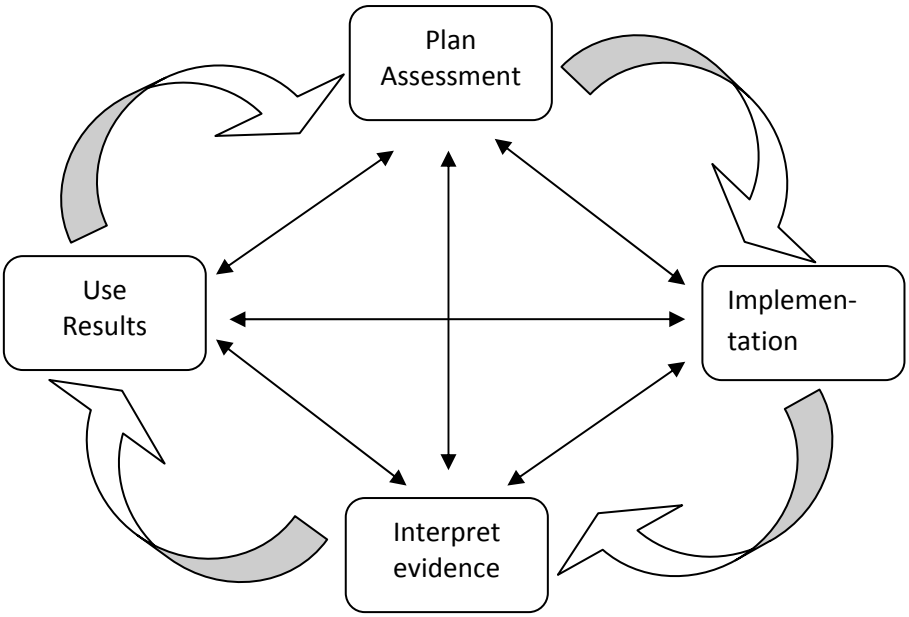

Figure 1: Cycle of Teacher's Role in assessment

Teacher's Role in Planning

It is the responsibility of the teacher to gather revealing information as much as possible, through conscious planning. The teacher should have the necessary information to be able to plan work and to guide each student appropriately according to the learning goals of the course. Students are risked with very little planning or preparation time and energy of the teacher.

Teachers need to prepare thoughtfully and carefully their assessment activities, both at the overall and the day-to-day levels. It is necessary to identify 'What kind of information is needed?' and 'What performance by students will give that information?'. Teachers can follow many methods to enhance the ability to design tests that are effective in motivating, measuring, and reinforcing learning.

It is compulsory to match the assessments to the teaching content. Ideally, the assessments measure students' achievement of educational goals for the course. Therefore, test items should be based on the content and skills that are most important for the students to learn. To keep track of how well the assessments reflect the defined objectives, teacher can construct a grid, listing course objectives along the side of the page and content areas along the top. For each test item, the objective and the content it covers can be checked off (Jacobs and Chase, 1992).

It is necessary to spend adequate amounts of time for developing the assessments. When preparing an assessment, teacher should think carefully about the learning outcomes which are measured, the type of items best suited to those outcomes and the range of difficulty of items. In addition, the length and time limits for the assessment, the format and layout of the assessments and the scoring procedures should also be planned carefully.

It is a good practice for teachers to make up assessment items throughout the term. One way to make sure the

assessments reflects the topics emphasized in the course is to write assessment questions at the end of each class session and keep them for later sorting.

A system of moderation of assessments through professional collaboration benefits teaching and learning as well as assessment. Moderation that affects the planning and implementation of assessment, and consequently teachers' understanding of learning goals is more valuable than a quality assurance function. Instead of the practice of individual planning, the practice of working as a group of teachers from the start would provide common assessment opportunities.

Another valuable practice for teachers is involving graduate student instructors in designing assessments. If there are constraints on implementing that, at least, it is important to ask them to read the draft of assessments and comment on it. Not only will they provide useful suggestions, but their participation in designing assessments will help to enhance the quality of the assessments.

Moreover, if students are truly to become insiders rather than consumers of assessment, the teacher can find ways of involving them even at the planning stage. Teachers can ask students to submit assessment questions. Questions can be of the short-answer, multiple-choice, or essay type. Students will receive a few points of additional credit for questions they submit that is judged as appropriate. Not all students will take advantage of this opportunity. The teacher can select or adapt student's test items for their assessments.

Gathering test items from assessments of other institutions is also valuable for teachers. Using those items in their own assessments can't be recommended, because some of the students may have previously seen those test items. Instead of that, teachers can use them to compare the standards and quality of assessments and to improve themselves.

It is the responsibility of the teacher to make assessments valid, reliable, and balanced. An assessment is valid if its results are appropriate and useful for making decisions about an aspect of students' achievement. A practical approach is to focus on content validity, the extent to which the content of the assessment represents an adequate sampling of the knowledge and skills taught in the course.

If the teacher can design the assessments to cover information in lectures and readings in proportion to their importance in the course, then the interpretations of scores are likely to have greater validity. An assessment that consists of only a few difficult items, however, will not yield valid interpretations of what students know. An assessment is reliable if it accurately and consistently evaluates a student's performance.

In general, ambiguous questions, unclear directions, and vague scoring criteria threaten reliability. Very short assessments are also unlikely to be highly reliable. It is also important for an assessment to be balanced, so as to cover most of the main ideas and important concepts in proportion to the emphasis they received in class.

It is a responsibility of teacher to write questions that test skills instead of recalling the lectures. It is important to create assessments to measure students' attitudes also. The following condensation of the list shows how Bloom's taxonomy adapts for assessment development. It is important to address all the levels in this classification as much as possible in an assessment to obtain the real indication.

Table 1 – Bloom's taxonomy adapts for assessment development

To measure:	Knowledge, which includes common terms, facts, principles and procedures
Kinds of questions:	Define Describe, Identify, Label, List, Match, Name, Outline, Reproduce, Select, State
Example:	"*List the steps involved in amplitude modulation*"
To measure:	Comprehension which measures understanding of facts and principles and interpretation of material
Kinds of questions:	Convert, Defend, Distinguish, Estimate, Explain, Extend, Generalize, Give examples, Infer, Predict and Summarize
Example:	"*Summarize the basic principles of multiplexing*

To measure:	Application which includes solving problems, applying concepts and principles to new situations
Kinds of questions:	Demonstrate Modify, Operate, Prepare, Produce, Relate, Show, Solve and Use
Example:	*"Calculate the number of digits in an encoded number with 256 quantization levels*
To measure:	Analysis which includes recognition of unstated assumptions or logical fallacies and ability to distinguish between facts and inferences
Kinds of questions:	Diagram, Differentiate, Distinguish, Illustrate, Infer, Point out, Relate, Select, Separate, Subdivide
Example:	*"Illustrate an amplitude modulated signal when modulation index is 1.25"*
To measure:	Synthesis which integrates learning from different areas or solves problems by creative thinking
Kinds of questions:	Categorize, Combine, Compile, Devise, Design, Explain, Generate, Organize, Plan, Rearrange, Reconstruct, Revise and Tell
Example:	*"Design a circuit which accepts a two bit number and generates an output equals to three times the input number"*

To measure:	Evaluation which includes judging and assessing
Kinds of questions:	Appraise, Compare, Conclude, Contrast, Criticize, Describe, Discriminate, Explain, Justify, Interpret and Support
Example:	*"Compare shielded twisted pair cables and shielded twisted pair cables for interference"*

Successful outcome of such exercises is a clear sense for teachers about what they wish to assess and why they wish to assess it. This clear sense is an important prerequisite for quality assessment. This will lay a solid foundation for the selection and use of proper assessment methods as follows:

Teacher's Role in Implementation

The only real indication that a teaching method is effective is if it achieves the program objectives and students actually learn. Students' learning, at the level of each individual, therefore has to be assessed and evaluated by one method or another. The evidence-gathering phase is about gathering adequate and relevant information about students' learning. The idea is to obtain a comprehensive picture about the teaching-learning situation instead of gathering evidence from a variety of sources that arise spontaneously during the lesson.

Teachers should use a variety of assessment methods. Researches show that students vary in their preferences for different formats, so using a variety of methods will help students to do their best. Multiple-choice or short answer questions are appropriate for assessing students' mastery of details and specific knowledge, while essay questions assess comprehension, the ability to integrate and synthesize, and the ability to apply information to new situations. A single assessment can have several formats. But it is important to avoid introducing a new format on the final exam.

There are many methods for obtaining information on students' progress. Teachers may even use some of these methods as a lesson takes place. This ongoing type of assessment is referred as formative, and can be contrasted with summative assessment that comes at the end of a course of study. Formative assessment is particularly valuable, because it allows the teacher to make immediate adjustments to the program of instruction when necessary.

Summative assessment comes too late to influence the teaching method. Teachers should retain their summative role as the quality of summative assessments improves through the inclusion of skills, competencies and knowledge. The most common ways of conducting assessments are by observation of students at work, communication, tasks and tests, and are briefed in turn.

Observation of Students at Work

This can be done by informal observation of momentary unplanned happenings. Through close observation of students in the process of learning, the collection of frequent feedback on students' learning and classroom experiments, teachers can learn much about how students learn and how students respond to particular teaching approaches. For example, when a student does or says something, the teacher can mentally record it. The primary indicators that teachers can use easily to monitor students are the most readily available, most quickly surveyed, and least intrusive indicators such as facial expressions, posture, participation, questions, and attending.

This information can be used together with what is learned from outside classroom sources, to form an initial set of perceptions and expectations about students. That will then help the teacher to plan for, interact with, and manage students and instruction. Simply, teachers can use the reaction of pupils to judge whether it is feasible to carry on. It is very useful for teachers to make information gathering and impression formation as a subconscious and implicit process.

Sometimes, early impressions tend to become permanent and virtually stable throughout the year. This means that the teacher often forms generalized and lasting impressions from early singular or limited instances. Practically such impressions may receive from what the student does or says when the teacher glances in the first few days or weeks. The unfortunate fact is that so

used assessment can sometimes lead to do prejudging and labeling students erroneously.

The tendency of teachers to often focus on an overly narrow sample of students and being inattentive to the rest makes the judgments less reasonable. Because, that may be taken place due to seating arrangements or due to teacher's unconscious preference for certain students. It is the teacher's responsibility to enrich the quality of observational evidence by eliminating biasing.

The teacher's probable impossibility to monitor the classroom while fully engaged with instruction is not contributing to the rich, individualized information that is essential to help students progress in their learning. Teachers should understand that students' reactions do not provide direct evidence of student learning, which is the real criterion of instructional success.

Though there are shortcomings in this method, it does not mean that there should be no place for informal observation in assessment. Informal observation is however an important feature of assessment right through the year, because even facial expressions may use to reveal relevant diagnostic information. Since such observations produce evidence that has its own unique value, it makes good sense to teachers to continue with this evidence-gathering procedure.

Communication

Communication is the most common form of assessment technique used by teachers when acting deliberately to

obtain information about students' knowledge or capabilities. Even though the teacher can communicate with students both orally and in writing, researches show that on average teachers spend more time on the former method. Some students, who are not publicly examined through questioning, are tongue-tied in classroom discussions and express themselves better in writing.

The overwhelming quantity of talk during classroom discussion moreover comes from the teacher, while very few words being actually spoken by students. But it is necessary to be understood that communication in class help both teachers and students to clarify what students know and where their misconceptions have occurred. Communication gives an accurate indication about what the class as a whole understands. Apart from providing insight into students' current state of understanding, communication is also potentially useful in stimulating further learning.

There are convergent and divergent questions and higher level and lower level questions. Convergent questions which are also called closed questions have a single correct answer. Divergent questions which are also called open questions may have many appropriate answers.

On the other hand, whilst lower level questions are required to retrieve and manipulate factual knowledge, higher level questions are required to engage students in solving new problems based on this factual recall. Rather than emphasize closed questions, teachers

should invest more in open questions to show students that the teacher is interested in their ideas, encourage students' self-expression and challenge students to develop their thinking.

Communication at classroom should not follow the sequence of question by teacher, response by students, and feedback by teacher. Sometimes teachers ask a question from students and just move quickly around the class until they hear the right answer. This conveys an impression to students that speed is important rather than thinking deeply about things. In addition, this reflects that teacher's goal is to elicit the correct answer from students rather than to engage them in discussions to articulate, develop and defend positions.

Especially when faced with higher level questions, students need time to process their thinking in order to come up with more complete, thoughtful responses. Therefore, teachers should provide ample time and then listen sensitively so as to pick up clues about student's thinking. Such a practice encourages creation of a classroom environment which is open to the potential of discussion.

Teachers should avoid choosing sub-group of only a few students always. Teacher can facilitate group discussions to allow everyone to participate actively. Though it is a good opportunity to gather variety of ideas and experiences, dominance of few students should be avoided by the teacher through close observation. Further, it should be understood that the information obtained through communication does not

give a complete picture of an individual's understandings.

Tasks

For teachers not to rely excessively on the ephemeral evidence of classroom events, students need to systematically perform tasks both within class and outside the class. It is vital for students to be involved in collaborative projects, as these create the conditions for thinking aloud and sharing ideas, which is an important meta-cognitive aspect of learning and assessment.

These assessment tasks work towards valued learning goals and open for generation and display of relevant performance to the teacher and to the students themselves. Tasks have curricular relevance, but not limited to the curriculum and help teachers to reveal how students perform in solving problems. Assigning tasks for students provide the opportunity for teachers to assess students' attitudes, as well as knowledge and skills.

Tasks should be given so as to facilitate the development of students' understandings into knowledge that can be applied in real-life contexts, thus ensuring an explicit link between learning and out-of-university practices. Towards this end, the teacher should select tasks that are varied in interest and should offer reasonable challenge. Teachers should not forget that tasks make possible more than one acceptable solution to a problem and more than one acceptable answer to a question.

As tasks should constitute key contexts for students' thinking about the subject, the teacher, in his role of task selector, needs to possess a skilled and multi-dimensional foresight. The teacher should consider constraints of time, facilities and the starting point of the students. In addition to those, attention must also be paid to the content of tasks, as this sends a clear message to students about what parts of the subject are important to learn. The tasks should be in the manner in which students are expected to work on the tasks.

Another important consideration in task selection by teachers is the degree to which the task is left open or closed. Closed tasks are linked to standard textbook questions, class-learned methods and rules. Those are the tasks that encourage the development of procedural knowledge in students.

Open tasks encourage the development of conceptual knowledge. They are linked to practical and investigative work that requires students to make their own decisions, plan their own routes through tasks, choose methods, and apply their knowledge.

Apart from such considerations, a task can also be specified according to the complexity of reasoning it requires. Some tasks are related to a specific situation identical to one subject, which is characterized by mere recall of factual information. Some tasks are not limited to one subject and require identification of the appropriate algorithm and its use.

Another type of tasks is quite new problems, which require new reasoning and construction of a new approach, deploying established knowledge in a new way. Such tasks are characterized by the application, analysis and synthesis of factual knowledge in order to solve new problems. It is the duty of the teacher to select the most suitable type according to the situation.

Tests

The majority of teachers spend more than 10% of their professional time on testing. Tests show what students know, as well as facilitate good learning which is called as 'placing tests in the service of learning'. Tests should consequently be ambitious instruments aimed at detecting mental representations of students, including their important ideas and understandings to solve problems. Cumulative tests require students to review material they have already studied, thus reinforcing what they have learned. Cumulative tests also give students a chance to integrate and synthesize course content.

Teachers concern about the time required to develop and use their own tests, as sometimes it interferes with their instructional time. Therefore, they tend to be less concerned about their lack of testing, their competence in testing, the student reaction to testing, and collaborating with others in testing. But it is compulsory to prepare new exams each time they teach a course. Though it is time consuming to develop tests, teacher should understand that a past exam may not reflect the exact situation.

It is teacher's responsibility to prepare clear instructions and to include a few words of advice on the tests. For example, teachers can advise students on how much time to spend on each section or can offer a hint at the beginning of an essay question.

It is important to place several questions all your students can answer, in the beginning of the test paper. Answering easier questions helps students overcome their nervousness and may help them to feel confident that they can succeed on the test. Teacher can use the first few questions to identify students in serious academic difficulty. Apart from that, it is necessary to challenge the best students. It is recommended for teachers to include at least one very difficult question to challenge the best students, by placing that question in the final part of the test.

There is no purpose of creating a test too long, such that for even well-prepared students are unable to finish and review. As a rule of thumb, it should be allocated about one-half minute per item for true-false tests, one minute per item for multiple-choice tests, two minutes per short-answer question requiring a few sentences, ten or fifteen minutes for a limited essay question, and about thirty minutes for a broad essay question.

In addition, it is necessary to allocate another five or ten minutes for students to review their work and to distribute and collect the papers. Another rule of thumb is to allow students about four times as long as takes by the teacher to complete the test.

It is necessary for teachers to pay attention on the layout of the exam paper. Margins and line spacing should be used so as to make the test easy to read. It is advisable for teachers to keep in mind that the amount of space they leave for short-answer questions often signifies to the students the length of the answer expected.

In addition to those, the teacher should take precautions to avoid cheating during tests.

Teacher's Role in Interpreting Evidence

Collected evidence through implementations of assessments needs to be interpreted, so that it may be turned into information on the basis of which decisions can be made. To put the decisions to actions, teachers should have an adequate recording system in order to be able to select, edit and communicate assessment information appropriately and effectively.

The standards against which teachers compare the evidence should be primarily self-referenced or at least criterion-referenced, but not norm-referenced. The teacher should views the data from a collective frame of reference in order to make decisions.

When a student discovers that there is a gap, but still has no idea about the nature of the discrepancy between actual and desired performance, then that information which is almost norm-referenced, fails to qualify improvements. Such a process is simply a monitoring process, as it does not help students to close the gap.

On the contrary, for assessment results to use more beneficially, it must interpret not only the existence of a gap between actual and desired levels of performance, but also suggestions for actions that prove successful in closing the gap.

For truly professional judgments, teachers need time to think about the assessment results, ideally in consultation with colleagues. Even if the interpretation of evidence is typically tacit and intuitive, some teachers rarely have the time to make decisions in the moment. It again limits the quality of the interpretations made and consequently of students' learning.

The teacher should define the requirements of each learning task. It is the responsibility of teacher to clearly describe how performance will be measured and graded, preferably by involving students. Students' involvement is essential in interpreting evidence, because they can add a different informed perspective to that of the teacher. In addition, students will understand their strengths and weaknesses by becoming self-monitoring learners.

Teacher's Role in Using Results

The interpretations that teachers give to assessment results are not a means to an end. In fact, with very few exceptions, assessments can be conducted for certain actions targeting different audiences. Probably of more concern is teachers' tendency to make little use of assessment results beyond putting them into record

books and using them to identify students for remedial help. This arises due to teachers' inability to see assessments as saying something about their teaching rather than just about the student.

Actions or consequences to be initiated by teacher can be grouped under three interrelated categories, which are instructional decisions, feedback and grading, and summarized below.

Instructional Decisions

Instructional decisions relate to the teacher interventions aimed at improving learning which are make continually. Many of these decisions can be taken during the course on the basis of ongoing assessment results.

Instructional decisions may involve proper revisions of lectures and assessments. The teacher can revise the delivery method, time duration or teaching aids. In these circumstances, the teacher has to verify that the lesson is progressing satisfactorily according to the plan.

Assessments provide essential feedback to the teachers themselves on the quality of their instruction and a clear understanding on how successfully they are presenting the material. Such feedbacks show the path for teachers to improve the effectiveness of the teaching program through necessary modifications to method of delivery, learning activities and resources.

The teacher needs to have detailed, quality information about individual students to put students in learning situations that are potentially optimal for teachers. It is also possible to optimize the activity and the learning process of each student. The problem here is that it is hard for the teacher to monitor the progress of each individual student in detail.

But the teacher should focus on individuals in detail if they are causing real concern which is unavoidable in practice without the realization of each student's learning potential. Sometimes the teacher has to delay taking important instructional decisions until such information is available. By avoiding decisions on biased evidence, the teacher can decrease the chances of producing invalid conclusions about the success of instruction with harmful consequences for students.

Feedback

Feedback is mainly related to the formative function of assessment. Feedback is the information about the gap between the actual level and the reference level of a system parameter. It is about the communication of expectations and communication of progress towards goals. The importance is that all students receive feedback that has high-communication value, which can be understood and used by them.

Feedback is thus about promoting a culture of success where students can build achievements on their previous performance without any comparison with others. The most valuable characteristic of feedback is

that it provides learners with constructive guidance about how to improve. In order for the student to improve, the teacher should acknowledge him about the desired standard or goal.

The student should be able to compare the actual performance with the desired performance and engage in appropriate action to close the gap between the two. This can only happen, if teacher's feedback allows the student to reach these standards.

In this respect, teachers can use some valid indicators to provide good feedback. The teacher should provide feedback about individual performance expressing this in accordance with the agreed criteria. The teacher should be able to relate various aspects of poor performance to specific remedial actions.

Well-designed assessments serve to motivate and help students to structure their academic efforts by providing information on their own progress. What students require to improve is user-friendly information that relates to how they are doing and how specifically. Therefore feedback should enable students to connect aspects of poor performance to specific remedial actions. Assessment feedbacks can be used to reinforce learning by providing students with indicators of what topics or skills they have not yet mastered and should concentrate on.

Too often, students have not learned as much or as well as was expected. There are gaps, sometimes considerable ones, between what was taught and what has been

learned. By the time teacher notices these gaps in knowledge or understanding, it is frequently too late to remedy the problems. To avoid such unhappy situations, teachers and students need better ways to monitor learning throughout the semester. Specifically, teachers need a continuous flow of accurate information on student learning.

Assessments help teachers to evaluate students and assess how well they are learning. That enables teachers to obtain accurate information about their students' progress and their need for extension or remediation. Regardless of the teaching method used for learning, the outcomes from such teaching must always be evaluated on the evidence obtained from appropriate forms of assessment.

In addition, Assessments provide information to identify students who are having difficulties mastering the course content, and thus need additional help or students to be referred for special education. It is essential for teachers to direct attention of the feedback to the task rather than the learner. This would help to eliminate the less successful students, considering it as another confirmation of their inability and further reduction of their low self-esteem.

Grading

There are two main ways in which teachers produce summative information about students. These are 'summing up' and 'checking up'. Summing up is a summary of information obtained through recording

formative assessments during a particular period. checking up is the collection of new information about what the pupil can do at the end of a period of time, usually through giving some form of test.

The possibility that teachers sum up formative information for summative purposes adds credibility. It is compatible for teachers to have a summative role for selection and certification purposes. But it is necessary ensure quality in the summative reporting procedures.

Though the central purpose of Assessment is to empower both teachers and their students to improve the quality of learning, assessment results should facilitate accurate reporting also. Teachers should do grading so as to be appropriate for the purposes of users of their information.

Through final grades, university become better able to understand and promote learning, and increase its ability to help the students themselves become more effective, self-assessing, self-directed learners. Through assessments it is possible to be accountable to government education authorities by providing evidence of achievement levels in a university. Grades are used in informational purposes where details on student's academic performance are informed to parents also.

The grading system should be clear and understandable. It should be communicated to all stakeholders and it should be fair to all students. the teacher can put the results in a way, which facilitate identify progress, explain difficulties and indicate ways in which fellow

teachers, students, parents and employers can use the information creatively.

Teachers can use grades to guide students to choose appropriate courses and to motivate. Sometimes grades tend to encourage cheating and can negatively influence students' motivation and self-esteem when lower than expected or consistently low. Grades may also promote competitive and grade-hunting attitudes. But if teachers can make grading cumulative as part of a continuous assessment system, students may develop a 'not for learning' mindset that it is only worth doing work that contributes to the total.

In conclusion, assessments can take many forms and an integral part of effective classroom teaching. To improve learning, students need to receive appropriate and focused feedback early and often. The assessment of the students is one of the most important tasks facing the teacher with a distinct and potentially separate role for the teacher. It is possible for someone to be an expert teacher but not an expert assessor without playing a big role as a thoughtful planner, clever assessor, broad-minded interpreter and a loyal contributor.

Conducting well planned assessments, interpretation of results and effective use of results help students and teachers in many ways. Despite these benefits, assessments may be sometimes emotionally charged and anxiety producing. Therefore it is the responsibility of teachers to conduct assessments so as to lead to positive actions.

IMPACT OF ASSESSMENT ON THE QUALITY ENHANCEMENT OF UNIVERSITY EDUCATION

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Introduction

One of the important issues raised by the academics, the society and the employers is the academic standards of the graduates who pass out from our universities. They claim that the quality of graduates that our universities produce is low in standard.

Another fact stems from the issue is the disparity in standards among the productions of universities where a certain university may produce graduates of high academic standards while another university does not, in the case of the same discipline and program. This results in the favored selection of graduates from branded universities at the job markets for employment concerns. Developing universities are mostly affected by this state.

A number of reasons such as facilities, manpower, academic and other resources, university culture, curriculum, quality of teaching and the assessment procedure mainly contribute to this problem. As for a

graduate, learning is a constituent that promotes the academic standards. Stakeholders related to education gauge students' academic strengths and weaknesses through different tools in assessment. Hence, assessment is at the heart of education and testing forms the bedrock of educational assessment and no other disciplines stated above accounts for such a powerful measurement.

Rationale for Assessment

Assessment is an essential component of educational decision making. It refers to any activity used to appraise pupils' performance. The learning outcomes promoted by the curriculum of the program concerned help students to develop knowledge, understanding, skills and attitudes. Assessment thus refers to techniques we use to monitor students' progress in terms of specific learning outcomes. Further, assessment includes the whole range of activities from the informal test on last night's homework to the formal external examination. It includes regular marked course work assignments forming a part of a course, as well as periodic testing.

Assessment is defined as a means of measuring the performance of students and the progress they make and diagnosing their problems and providing them with useful feedback. Wallace (1991)[5] views assessment as an

[5] Wallace, M. J. (1991). Training Foreign Language Teachers. Cambridge University Press

important part of any course as it determines what the students must do in order to gain qualifications.

Others refer to assessment as a set of processes by which we judge student learning. They enlighten that learning has come about as the result of a course of instruction and within the curriculum framework delineated here; the term refers to procedures for measuring the extent to which students have achieved the objectives of a course. Therefore, assessment is a reflective process involving teaching and learning that results in effective performance of student learning experiences as a result of measurement in order to achieve the object of a course.

The purpose of assessment ranges from initial placement of students into particular programs of study understand progress performance of students through classroom – based assessment during the course and evaluating the performance/ educational attainment of a study program at the end through standardized tests or examinations. Due to the importance, there has been a growing interest in the application of assessment procedures for the development in educational programs. More authentic (non-traditional) forms of assessment, such as portfolios, interviews, journals, project work and self or peer- assessment have become popular. However, standardized tests have not been excluded from the assessment process as they provide stable evaluation criteria with specific measurement.

The changing paradigm in education from 'Teacher centered assessment' to 'Learner centered assessment'

reflects mostly on the use of non-traditional forms of assessment. Professional in educational programs believe that a mixture of both traditional and non-traditional programs of assessment best suits the process as both the processes have reliable and learning – motivated feedback when properly integrated into the system.

The Purpose of the Assessment

Assessment can serve a number of different purposes. Often they provide backwash effect on both learning and teaching process. Some of the important purposes can be identified as below.

Feedback on students' progress

Assessment provides feedback to teachers on students' progress. This enables the teacher to assess how effective the teaching process is and whether teacher has been successful in the intended outcomes. The feedback essentially highlights problematic areas students have and necessitates remedial actions in subsequent teaching.

Educative feedback

On the part of the student, assessment provides information of performance. The results help the student to monitor his/ her performance as per the standards outlined. Thus, it helps students to improve or correct their work and conform to the required target performance levels.

Source of motivation

Assessments are often regarded as an important source of motivation and as encouraging both to students and teachers to work hard. As for the student, assessment activities or tests reinforce organization of their work and to pursuit learning process to the levels required by the criteria of assessment. The feedback of success the student gets at a challenging task is effective in stimulating future motivation.

Current attainment

When assessment activities are planned to run throughout the course, they provide comprehensive information of attainment levels. A specific assessment activity may provide the current attainment level of a student at a particular point. This may serve as a valid statement of certification of the progress.

Records of progress

Regular assessment activities enable the teacher to maintain records of progress over a long period of time. This facilitates the teacher to monitor the students' current and future educational needs or helps to determine the award of grades/ passes leading to final results.

Quality of education

The quality of an educational program is envisaged directly by the process of Learning and Teaching. Any shortcoming on the part of the learner and the teacher is sure to affect the quality of the program. On the port of the learner, assessment gives a gauge of the scope and the depth of the target knowledge and the assessment plan (process) motivate the learner having set targets on the level of attainment. As for teacher, they provide vital information on the effect of teaching methodology used, encourage remedial measures for weaker students and attend to problematic areas and schedule future teaching effectively.

Assessment and Quality Enhancement

The quality of the graduate is the most reliable source of measurement of standard of a study program in a university. Fulfillment of learning outcomes of a study program by a graduate is a proof of the quality of the program. The physical resources of a university may indirectly reflect and influence on the quality enhancement but there is no direct proof of their measurement to the quality.

Within the framework of the curriculum, learning objectives are set out and the three main elements identified as Learning, Teaching and Assessment become the most influential areas of a curriculum of a study program. Since the graduate is an agent of learning, he/she has mutual relationship with teaching and assessment.

In order to improve the quality of learning, both teaching and assessment should contribute to learning, as teaching and learning components, on their own, do not have reliable measurements of their quality, assessment stands as an important agent with measuring scales of standardized criteria.

Hence, assessments tend to exert enormous influence on the nature of learning and teaching which finally reflect on the overall quality of the program. Therefore, the assessment process is a major factor in quality enhancement in university study programs. The inadequacies on the part of assessment may reflect on the low quality while high standard assessment would enhance quality of programs.

There are many different methods of assessment such as standardized tests,/formal examinations, portfolios, interviews, journals, project work, self or peer-assessment, presentation, review, contract and dissertation. Standardized tests/examinations are referred as traditional while others as non-traditional. The fact that systems of exams and assessment can be used for a variety of purposes should not be taken to imply that a single system of assessment can readily serve all purposes equally well.

There are very few good reasons to use only a single testing session, a final examination and also there are no rules about frequency of testing, but one examination in an undergraduate course is surely too few and more than

five too many (Lowman, 1995)[6]. The number of testing sessions should be determined by the difficulty level and amount of material covered. As to pacing, exams should occur at regular intervals in the term/semester. It has been suggested that a single final exam makes grading and testing synonymous. Periodic testing during a term has been shown to improve performance on final exams.

Traditional Forms of Assessment

Standardized tests and examinations are considered to be traditional forms of assessment. Most examinations/tests are limited to pencil-and-paper tests and so ignore a variety of skills that cannot be measured this way. These forms of assessment pay very little attention to more practical skills. In most exam questions, the student is required to recall or recognize factual knowledge, rather than to synthesize material or apply principles to new situations. The abilities explained below give a more distinctive idea about examinations:

- Understand, remember and discuss certain key information, concepts and skills which ought to be internalized as part of the trainees' experience of the course

- Deploy their knowledge and skills under reasonable pressure of time

[6] Lowman, J. (1995) Mastering the Techniques of Teaching. Jossey-Bass Publishers, San Francisco.

- Argue and discuss concisely and persuasively within certain reasonable constraints of time and circumstance

There are merits and demerits of having examinations as a tool of assessment. Examinations can be seen as being less prone to cheating by students and giving more responsibility to the trainee for organizing his/her knowledge. They also provide psychometrically valid measures of students' performance as they are associated with 'Validity', 'Reliability', and 'Objectivity' which stems from the questions: (a) does the test measure what it is supposed to measure? (b) is the test consistent in its measurement?, and (c) is the test unbiased?, respectively.

Lowman (1995) is concerned with the examination in a positive manner and explains how examinations affect students' attitudes; "*examining has a powerful effect on student's attitudes towards their courses, on the way they study, and on what they learn.*" On the contrary, some educationists argue that tests/examinations are incapable of reflecting the true achievement of students as they are limited and time-bound. Knowledge gathered during a long period of time, say six months or one year, cannot be intended to test in a two or three hour question paper. Many points out that a student may perform poorly on a test for reasons that have nothing to do with what they know. Although the student may possess knowledge, due to misunderstanding of the question paper, due to sickness or tiredness student may not perform well.

Non Traditional Forms of Assessment

Non traditional forms of assessment have come to be termed 'alternative assessment', 'authentic assessment' or 'informed assessment'. This new form of assessment measures students' ability to produce. Alternative assessment is different from traditional testing in that it actually asks students to show what they can do. Students are evaluated on what they integrate and produce rather than on what they are able to recall and produce.

The main goal of alternative assessment is to 'gather evidence about how students are approaching, processing, and completing 'real-life' tasks in a particular domain. Nontraditional assessments are nonintrusive to the classroom because they do not require a separate block of time to implement them. Often authentic forms of assessment such as portfolios, interviews, journals, project work, self or peer-evaluation, contract, dissertation, presentation and so on are more student centered in that, they in addition to being an assessment tool, provide students opportunities to be more involved in their learning probably right throughout the course.

Continuous Assessment

Continuous assessment provides a strong foundation for quality enhancement in Universities. Since learning and teaching are ongoing process, assignment needs to provide feedback on both learning and teaching in order

to improve quality. Continuous assessment enables teacher to assess student over a period of time those aspects of student's performance which cannot normally be assessed as satisfactorily by means of test. Continuous assessment includes marks or grades given mostly for non-traditional forms of assessment and classroom tests as well.

Planning Assessment

Planning of assessment is a vital aspect in the process of assessment. Assessment should be planned so as to become an integral part of each lesson or unit. It should also ideally be part of any general planning such as syllabi, time frame and other programs that takes place before a course of study begins.

It is important to plan instruction and assessment together in order to ensure that instruction lends itself to assessment and the same resulting assessment are useful for ongoing instructional planning. Further the assessment process should reflect the official curriculum of the program and not merely a limited aspect of it. However, since not everything included in a curriculum can be assessed, the areas which are regarded as important will receive special attention.

Assessment should be an integral plan of learning and teaching aiming at the learner outcomes set out in the curriculum. If assessment process does not conform to the standards and the areas detailed in the boarder curriculum, it may fail to produce sound results in that, the quality of the study program may be jeopardized.

As in the case of universities, it is rather desirable to incorporate non traditional forms of assessment with traditional forms. Since, traditional assessments such as standardized tests or examination have a higher rate of validity, reliability and objectivity with sharp measurement scales, they provide a basis of measurement of student attainment. Moreover, they provide a clear picture of the attainment level of the student that is a pre-requisite for certification or grading.

A selective number of non-traditional forms of assessment on the other hand, have to be incorporated to the assessment process with justifiable percentages of weighting. Some study programs allocate 50% to 50% of marks for traditional and nontraditional assessment while others may differ up to by 20% to 80% for classroom assessment with standardized tests/ examinations respectively.

Blooms Taxonomy of Educational Objectives

This system defines multiple disciplines of capabilities in a hierarchical order that a student ought to process in the process of learning. Bloom's Taxonomy of Educational objectives (Table 01) provides a strong foundation for assessment in universities:

Table 01 - Bloom's Taxonomy of Educational Objectives:

Category Name		Educational Objectives
01	**Knowledge**	Ability to recall or recognize information
02	**Comprehension**	Ability to understand, organize and select relevant facts and ideas
03	**Application**	Ability to apply knowledge and idea, principles in different situation
04	**Analyze**	Ability to analyze, restructure and compare before relevant ideas are applied
05	**Synthesis**	Ability to create something new from existing ideas
06	**Evaluation**	Ability to judge an idea regarding validity and value

There is a tendency in universities to consider teaching, the resources and the syllabi as the basis of producing quality graduates. If study programs are to be effective and the standard of the products is to be enhanced, the process of assessment needs special attention. If assessment process becomes only a formality of a measurement that is isolated from the educational program, one cannot guarantee the quality of the output of the program.

Planning of assessment is an urgency that reflects the curriculum and the educational objectives set out in the program. Assessment should be an integral part of instructional process since they serve a backwash effect on the part of both teaching and learning. Identification of traditional forms of assessment and the strengths and weakness of them should be of prime concern of program planners.

Further, Bloom's Taxonomy of Educational Objectives can strongly influence assessment planning which will lead to enhance the quality of university education. However, if the assessment process of a study program does not conform to the objectives set out in the curriculum due to low standard of assessment tool or marking process, assessment tend to exert negative results. Thus, the quality of the program may go down. Finally, our aim of assessment should not be confined to grades of pass or fail, but students to gather knowledge and experience to meet with the educational objectives that finally lead to quality enhancement.

CONTINUOUS EVALUATION IN MANAGEMENT FACULTIES IN SRI LANKA: COMMON ISSUES

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Introduction

Education is defined as primary, secondary and tertiary education according to the level of knowledge given. Tertiary education is also called as higher education that refers to a level of education that is provided by universities, vocational universities, community colleges, liberal arts colleges, institutes of technology and other collegiate level institutions, that award academic degrees or professional certifications.

University is an institution of higher education and research, which grants academic degrees in a variety of subjects. It provides both undergraduate education and postgraduate education. The word *university* is derived from the Latin *universitas magistrorum et scholarium*, roughly meaning "community of teachers and scholars". Universities award degrees based on the level of student's performance. In the earlier, student's performance was evaluated annually.

However, policy makers and education administrators did not see an optimism of student's performance and they were searching an alternative for the same. Thereby, world university system adopted course unit system in which student's performance is evaluated continuously. The course unit system is an operational system in which the entire programme of courses required by a student for a particular degree, is packaged into a number of modules each consisting of a prescribed number of units. Usually one module is to be offered in one Semester.

Thus, the student's workload in a semester is defined in terms of units where one unit represents one hour of lecture or one hour of tutorials or two or four hours of practical work per week throughout the semester, normally of fifteen weeks duration. An academic year consists of two semesters.

Testing is a critical component of student's evaluation. Education administrators often view test scores as a measure of educational quality and use test scores to hold universities accountable for teacher's performance. Continuous assessment, an alternative or supplement to high stakes testing of student's achievement, offers a methodology for measuring student's performance and using those findings to improve the success of them.

Continuous assessment is a feature of the course unit system, which makes it unique. This is a classroom strategy implemented by teachers to ascertain the knowledge, understanding, and skills attained by students. Teachers administer assessments in a variety

of ways over time to allow them to observe multiple tasks and to collect information about what students know, understand and can do.

Evaluation may take the form of take-home assignment, tutorials, class tests and quizzes, report and for such other means as may be appropriate and consistent with the objective and conduct of the course as determined by the department offering the course. Basically, these assessments are curriculum-based tasks previously taught in class. Continuous assessment occurs frequently during semesters and is part of regular teacher-student interactions.

Students receive feedback from teachers based on their performance that allows them to focus on topics they have not yet mastered. Teachers learn which students need review and remediation and which students are ready to move on to more complex work. Thus, the results of the assessments help to ensure that all students make learning progress throughout the university cycle thereby increasing their academic achievement and it is used in determining the student's overall grade in the course.

The study by Alausa (1996)[7], has identified some problems of continuous assessment associated with secondary school teachers. Major problems arises on teachers skills in test construction and administration, their attitudes toward the continuous approach and

[7] Alausa, Y. A. (1996). "Continuous Evaluation in Our Schools: Advantages and Problems".

record keeping. To make the results comparable across all the schools, teachers need to be equipped with skills of test construction and administration. This could be done through teacher training institutions. So that teachers are equipped with such skills as part of their training and certification.

It has further concluded that teachers must be professionally and attitudinally prepared for operating the continuous evaluation system, it may lead to a tendency to merely "cook up "scores in the name of continuous assessment. Thus, teachers should be made encouraged to from favorable attitudes toward the practice.

Another problem with continuous assessment is the issue of record keeping. Learner's records have to be adequately and meticulously kept over a long period of time. They should be properly stored and easily retrievable. A related issue is that of collation. Scores may have to be combined from different sources using various weights.

Moraes and Machado (2004)[8] have undertaken a study on "Continuous evaluation in training systems based on virtual reality". It presents a methodology of evaluation that uses the continuous evaluation approach to provide a user profile from trainee's several training. This new methodology is based on the issues arisen from a method where first work has been on Discrete Hidden Markov

[8] Moraes, R. M. and Machado, L. D. S. (2004). "Continuous Evaluation in Training Systems Based on Virtual Reality".

Models to execute an off-line evaluation on laparoscopic training executed by a trainee.

However, this off line evaluation has not been applied on virtual reality simulator. The new methodology emit to the user information about trainee's performance at the end of the training according to the classes of performance defined. Moreover, it provide user with information about his performance in specific tasks in the training.

Methodology

There are many continuous evaluation methods adopted by world university system to assess undergraduates. However, Sri Lankan universities are using few of them based on the available resources. In investigating the common issues on continuous evaluation processes of undergraduate education in Sri Lankan universities, study selects four leading management faculties where various issues have arisen in assessing students continuously (Table 01).

These issues are related to the reliability and validity of methods they have adopted and other practical issues in the actual implementation processes. Moreover, the location of universities creates some issues as well. It uses case study method to collect data and information and they are qualitative in nature. In addition to the case study method, survey method is used to some extent. In this context, attitudes towards continues assessments of only BSF students are examined by using a questionnaire. Sixty questionnaires are distributed

among the BSF students as covering every batch and every department.

Table 01 - Determination of the sample:

University	Faculty
University of Kelaniya (U of K)	Commerce and Management Studies (CMS)
University of Ruhuna (RUSL)	Management and Finance (MF)
Sabaragamuwa University of Sri Lanka (SUSL)	Management Studies# (MS)
Wayamba University of Sri Lanka (WUSL)	Business Studies & Finance (BSF)

Collected data via questionnaire is entered to the Statistical Package in Social Sciences (SPSS) and outputs are taken as frequencies and percentages. Results of the case study method are further ensured based on the responses given by the students for the questionnaire. As part of the case study method, teachers who are conducting lectures in the common programme are interviewed separately to distinguish the problems faced by the teachers who are conducting lectures in the specialization areas.

Identified common issues are discussed separately under the each method of continuous evaluation and they are

compared with each other. Finally, study concludes that how far some faculties have overcome their problems and barriers on others.

The Outcome of Analysis

Management faculties in the university system have adopted different approaches to assess students continuously. But some issues arise in the entire process. Some of them are common to all faculties and some are related to a particular faculty.

These issues depend on the nature of continues evaluation method. Most commonly, sample universities are adopting assignments, presentations, mid-semester test and class room tests and spot tests as continuous evaluation methods of students. Sample sixty students of BSF have given their priorities for the methods of continuous evaluation differently. (Table 02)

Table 02 - Most preferable method of continuous assessment:

Method	Frequency	Percentage
Mid semester tests	22	36.7
Assignments	30	50.0
Class room Tests	02	03.3
Spot Tests	04	06.7
Presentations	02	03.3
Others	00	00.0
Total	**60**	**100.0**

Assignments

Assignments play a significant role in the students' continuous evaluation process because they aim to evaluate students' writing skills, analytical skills and level of their understanding in the subject.

Basically, assignments are taken two types in nature as individual assignments and group assignments. Both require collecting information by referring required text books, journals, articles and so on. Students who are studying in management faculties at WUSL, RUSL and SUSL have to undergo a common programme during the first two years. Therefore, number of students for an individual assignment given by a particular subject in the common programme is very high. (Table 03)

Table 03 - Students in the common programme:

Faculty	Number of Students
BSF	240
MF	300
MS	200

Nevertheless, number of copies of a certain text book available in libraries is probably about four or five. Where the time duration given to complete an assignment is shorter, students are in difficult situation in sharing text books within the allowed time. In case of UoK, this is not a big problem because they don't have a common program. At the beginning students are allocated to the departments and it takes around hundred students.

Some assignments are given to the students to compare the theories learned with the application of theories in practical organizations. In this sense, students who are in the universities which are far from main cities make efforts to find organizations.

Especially, WUSL and SUSL are confronting with this issue because there are no enough business organizations at Kuliyapitiya and Belihuloya[9]. Therefore, students go to same organization at different times and organizations are in a difficult situation in fulfilling the information needs of all students.

Management faculties offer some subjects which require certain financial and marketing information from business organizations for assignment purposes. But students are facing problems in collecting this kind of information because those are kept safely. Therefore, students are not allowed to access to these information and students may be unable to submit a successful report.

In addition to collecting data, students go to these organizations to investigate their actual processes as well. But in some cases, organizations do not allow all the students to enter in to the organization due to some security reasons. They request to enter only one or two students. Therefore, others wait at the gate and they do not know whether what is happening inside the organization.

[9] WUSL locates in Kuliyapitiya and SUSL is in Belihuloya

Standard number of students for a group assignment is taken about three to five. However, actually it takes more than five because of large batches. In that sense, the very few members dedicate for the success of the assignment and others try to include their index number in to the assignment only. This is very unfair for the dedicated students and each student is not properly evaluated.

Table 04 - Preference for assignments:

Method	Frequency	%
Individual Assignments	04	13
Group Assignments	26	87
Total	**30**	**100**

Survey data gathered from the BSF students provides further evidences to ensure this scenario to some extent. From the students those who prefer for the assignment method (Table 02), 87 percent students prefer for the group assignment (Table 04). Out of them 92 percent of the students prefer a group consisting of 8 - 10 group members (Table 05).

Both indicate the students' behavior of pushing works to others rather than doing assignments individually.

Table 05 - Members per group assignment:

Range	Frequency	Percentage
2-4	00	00
5-7	02	08
8-10	24	92
More than 10	00	00
Total	**26**	**100**

Even though, they have revealed the reasons of doing group assignments (Table 06), students' actual achievements via group assignments are questionable.

Table 06 - Reasons for group assignments:

Reason	Frequency	%
To share works	06	23
To develop interpersonal skills	02	08
To generate good ideas	00	00
All of the above	18	69
Total	**26**	**100**

Before introducing the course unit system, students were assessed at the year-end examination only. There were not continuous assessments. But, the basic purpose of course unit system was to assess students continuously. The practice of WUSL and UoK is maximum 40% has been allocated for continuous assessments.

In this sense, any teacher can disregard continuous assessments and he/she can assess students only at the end semester examination. In case of RUSL and SUSL,

forty percent continuous assessments are compulsory before the end-semester examination. Students who are in these universities have to complete large number of continuous assessments within a semester.

The practice of RUSL is that students have to perform two different continuous assessment methods and it takes about three methods in the SUSL. In this sense, when the number of courses for a semester is about five or six, students suffer with workloads due to there is no consistency among teachers in giving assignments.

In the teachers' perspective, they have to take much time to mark assignment and if it is a common subject, it will become very serious. There is a motivation factor only at SUSL i.e. a payment is made for marking assignments at some specified rates. But other universities do not have such.

Presentations

Based on the number of registered students in a particular course module presentations are organized either individual presentations or group presentations. Presentations are highly interrelated with group assignments because this is a mechanism that can be applied to check the actual contribution of students to the assignment. However, in case of large groups, randomly selected students may present. In this context, students evaluation process is not hundred percent successful.

When students are making a presentation, respective teacher examine the presentation skills sitting in the audience. At the end of the each student's presentation, teacher gives the feedback. Then, the teacher may not get a chance to check those students again in the future to ensure that they have improved their presentation skills according to the comments given due to there is no continuity of student's evaluation from semester to semester by the same teacher.

Course coordinators who are in the common program are not in a position to hold presentations because they could not be finished within a day and take more than one day. Thereby, respective teacher may not be able to handle all the presentations by himself/ herself solely and others support may be necessary.

WUSL and RUSL are suffering from lack of lecture rooms. Therefore, making presentations for several days will create problems for other teachers because time table has been set as occupied whole day. If the teacher has decided to hold presentations during lecture hours it would create another problem with regard to covering syllabus within the given time frame.

Students those who are having good presentation skills but actually they have not contributed for the assignment may obtain high marks than others. Therefore, highly dedicated students may de-motivate in case of group assignments.

Mid-Semester Test and Class Room Tests

Course modules offered by management faculties are mathematical or/ and descriptive in nature. However, class room tests and mid-semester test are held for mathematical subjects very often. Tests are more reliable and applicable method of student's continuous evaluation process compared with assignments.

If the teacher is not willing to hold a mid semester test or class room test for a descriptive subject, success of student' continuous evaluation of that particular subject is questionable.

When it considers the most preferable method of continuous assessment of sample students (Table 02), 36.7 percent students prefer for mid-semester test while 50 percent for assignments. Even though, most of the teachers of BSF follow assignment method, mid-semester test is applied very rarely. However, as 64 percent students from the mid-semester test preferred students believe that all of the reasons (Table 07) affect for the selection of mid-semester test.

In case of large batches, it is difficult to mark answer scripts and it is an additional burden to the teacher because they are marked while conducting lectures. Besides, there is no any motivation factor with regard to marking answer scripts of those tests.

Table 07 - Reasons for the Selection of mid-semester test method:

Reason	Frequency	%
To reduce the work load at the end examination	00	00
To decide further required marks at the end examination	02	09
To maintain an updated knowledge in the subject	06	27
To clarify some problematic lessons before the examination	00	00
All of the above	14	64
Total	**22**	**100**

In some instances, sample universities do not have enough examination materials. Actually, there may be some problems when holding two or more examinations as end-semester test, mid-semester test and class room tests within a semester. Moreover, holding mid-semester test or class room test is upon the respective teacher.

Therefore, he or she has to arrange everything for the examination. With respect to large batches, teacher is unable to manage tests solely. Main problem arises when getting the supports from other teachers as invigilators because they may engage in another work and there is no proper mechanism of sample universities in allocating teachers for mid-semester tests and class room tests.

Spot Tests

Spot test is a best tool to assess students continuously because students have to equip with up to date knowledge every time to face for a spot test successfully. Additionally, it is a technique that can be applied to attract for lectures regularly. However, actual application of this method among the sample universities is very low. RUSL has never practiced this method since the adoption of course unit system and other universities are applying very rarely.

Conclusions and Recommendations

- Sample students of the faculty of Business Studies and Finance of Wayamba University of Sri Lanka have given their priorities for the methods of continuous evaluation differently and they are more preferred to assignment method.

- Number of copies of certain text books available in libraries is relatively law. When a large batch uses those text books for their assignment purposes, it is difficult to share each other. In addition, some books are available in the reference section only. For the successful implementation of the continuous evaluation process, there should be a proper link between the faculty and library. Faculties have to review the number of copies of a certain text book available in the library and to make request to

order further copies based on the students enrolled in a particular course module.

- Faculty of Commerce and Management Studies of University of Kelaniya does not meet any big issues with regards to handling of large group of students for continuous evaluation purposes because they don't have a common program and at the beginning, students are allocated to departments.

- Students in WUSL and SUSL are in a difficult situation in finding places to collect data for assignment purposes because there are no sufficient business organizations around university premises. Available some business organizations do not permit to collect some kind confidential information and restrict the access in to the firm. Therefore, students are in trouble in fulfilling the teacher's needs.

- Standard number of students for a group assignment is taken about three to five and it has to be considered in dividing students in to groups. It is better to have presentation with regards to a group assignment to ensure that students have actually contributed for the success of the assignment. But most realistic issue in many universities has been having a common program where assessing students via group assignments consisting more than five

members. Therefore, these universities have to go for an alternative to assess students.

- Teachers at WUSL and UoK can ignore continuous assessments components and he/she can assess students only at the end semester examination because the practice of those universities has been allocating maximum 40% for continuous assessments. In case of RUSL and SUSL, students have to complete compulsory 40% weighted assessments before the end-semester examination. Students who are in these two universities have to complete large number of continuous assessments within a semester. When it considers the sample, there is no consistency among management faculties in weighting for continuous assessments and performances of students coming from same stream are somewhat vary. Administrators who are in the management stream have to reform the structure of continuous evaluation process and to set a standard for all.

- Teachers may not have an opportunity to check whether students have improved their skills via presentations because there is no continuity of student's evaluation from semester to semester by the same teacher.

- WUSL and RUSL face for lack of lecture rooms and extra hours could not be taken for presentations. Therefore, teachers are in difficult

situation in taking presentations during normal lecture hours.

- Teachers who are conducting lectures for common batches meet with an additional burden to mark answer scripts of mid semester tests and class room tests because he/she has to mark a large bundle of scripts while conducting lectures.

- There is no proper mechanism among the sample faculties in allocating teachers for mid-semester tests and class room tests to work as invigilators.

- RUSL is not practicing spot tests as a continuous evaluation method since adoption the course unit system and other universities are applying this very rarely. Sample universities can prioritize to this method as a most reliable method of continuous evaluation.

Improving Teaching in Higher Education Through Effective Assessment

Selected Topics

Impact of Conventional and Innovative Assessment on Teaching and Learning
W. K. G. Kanchana S. Weerasinghe

Aligning Assessments with Intended Learning Outcomes
Bhagya Munasinghe

Role of the Teacher in Assessment
J. M. J. Windhya Jayasinghe

Impact of Assessment on the Quality Enhancement of University Education
R. M. Dhanapala

Continuous Evaluation in Management Faculties in Sri Lanka: Common Issues
U. E. Sudath Kumara

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