

# Validation and Effectiveness of Module in Assessment of Students Learning

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**Abstract:** *This descriptive-evaluative research was conducted to validate the module in Assessment of Students' Learning. It sought to determine the module's effectiveness through the pretest and posttest scores obtained by the student-respondents. The respondents of this study were the 45 randomly selected second year College of Teacher Education students who used the module in their Assessment of Students' Learning 1 class. The modified Questionnaire Checklist was used in validating the developed module along the following criteria: Specific Objectives, Content, Language Used, and Evaluation Activities. Weighted mean and standard deviation were used to describe student's evaluation of the module. During the entire semester, student-respondents were given pretest and posttest in every lessons covered in the module. Dependent t-test was employed to formulate inferences on the mean difference between the paired scores. The student-respondents highly noticed that each lesson in the module is accompanied by specific objectives which are stated in behavioral terms, measurable, realistic, and attainable. They highly recognized that the ideas, concepts, and points presented in the module are well explained and the expected learning competencies are contained in the module. In terms of the language used, the students highly acknowledged that the lessons are presented in paragraphs/sentences that are grammatically correct and is accompanied by clear and specific directions for their use. They declared that the module has provision for pretest, self-assessment and posttest in each lesson and the test items cover the important competencies to be developed. The results showed a below average score in the pretest and an above average scores in the students' posttest. When tested for a significant difference between their pretest and posttest mean scores, it was found out to be statistically significant. Hence, the module was effective in facilitating the learning process.*

**Keywords:** Validation Effectiveness Assessment of Student Learning

## 1. Introduction

Modular instruction was first introduced by American educators. It is described by John L. Hughes (2000) as an individualized instruction that provides bases for close interaction between the learners and the subject matter. With the modules, the learners are expected to respond frequently in the interaction with an instructional program at their learning rate.

Assessment of Students' Learning is a three-unit professional education subject taken by Education students. It involves concepts and principles on what and how our future teachers assess their future learners. Though there are existing references in this subject, there is a limited book that contains all the lessons stipulated in the course design or learning program used in the University. As instructor of this Assessment of learning for almost 8 years, the researcher had seen the relevance of having a module in delivering the content of this subject. Aside from the fact that it will offer individualized instruction, the module blends the theory and practice which are vital to students' learning experiences.

Good (1975) recognized in his researches the 'individualization' of the modules because learners proceed with the instructions at their own pace. Duker (1972) also stated that modular instructions catered to the individual learning differences so that learners are prompted to actively participate in determining what they need to learn. The amount and the pace of their learning must match with their ability, motivation and interest, not in comparison with other learners.

Gibbons (1971) believed that individualized instruction is one of the multi-media approaches providing the development of coherent instructional programs that prepare

learners for complete control of their education. Morallo (1980), a Filipino author, cited that a module is a self-contained and independent unit of instruction with a primary focus on a few well-defined objectives. A handout distributed during the Workshop in the Application of Educational Technology – DECS-UNESCO referred to it as a set of learning opportunities systematically organized around a well-defined topic containing the elements of instruction that cover specific objectives, teaching-learning activities and evaluation using criterion-referenced measures.

Good (1975) cited modular approach to be modernizing the teaching process suited to learners to advance at their own best rate through passing unnecessary instruction and satisfying their needs, thus in individual cases, will be able to earn their degree in considerably shorter period of time. Lardizabal et al (1996) said that it is a package of learning activities that learners have to accomplish. It can be used as part of a course, as a complete course, or as a curriculum design.

As Fe C. Nepomuceno cited, a module can be a short-segment programme interwoven between other forms of instruction to cover limited, specific units rather than an entire course. Garcia (1989), another Filipino author, classified the use of modules, together with programmed instruction, self-learning kits and correspondence courses, and mastery learning technique, under the self-pacing method of instruction.

Cross (1976) stressed that learning modules are the progeny of two reform movements in education that included programmed learning and mastery learning. Mastery learning plans contain the major features of the present day modules, such as: Educational objectives were specified; Instruction was organized into learning units; Diagnostic

progress tests were administered after each unit; and Mastery of one unit was required before the learner is allowed to proceed to the next module or unit.

Torralba, the leading proponent of learning modules in the Philippines, said that a modules should be self-contained, self-pacing, short and well-defined, adequately motivating, properly sequenced, providing opportunities for interaction with learners, clearly written with correct language, accurate, not in conflict with other subject matter and values, and utilizing every opportunity to achieve learning outcomes.

Nepomuceno described the modules in the following statements: It focuses on a distinctive, identifiable skills or set of skills or outcomes other than skills; It is fairly short so as to make students use their study time efficiently; It is essentially self-teaching, even though it may encourage group work; It blends theory and practice, and combines doing with reading and reflecting; It provides a list of further readings or sources related to the skill being promoted; It provides suggestions to students for participating in the design of their own projects, explanatory activities, and evaluation criteria; It is reality-oriented in the sense that it involves the students in real situation if not possible, tried to use stimulation technique; and It provides feedback for improvement and redesigning.

With these characteristics, the Ministry of Education, Culture and Sports Technical and Vocational Project (1986) cited the following reasons why modules are needed in teaching particularly technician education: Develop learning autonomy; Ensure satisfactory minimum standard;. Provide remedial units; Provide basic education; Upgrade content; Enhance competencies of teachers; Integrate theory and practice; Cater for individual differences in learning; Cater for different groups within the one course; Consolidate critical points in a course; Facilitate industrial certification; Provide resources for distance education; Encourage mastery; and Encourage a changed role for the teachers.

As cited by Nepomuceno, a module can be advantageous for students and teachers because: It provides opportunity for organizing numerous sequences of experience to reflect special interests of the teacher or student; Self-instructional units allow the teacher to focus on student deficiencies in subject matter that must be corrected and also serve to eliminate the necessity of covering subject already known to the student; It provides a way of assessing students' progress in learning; It reduces the routine aspects of instruction learning. The teacher is free to engage in personal contact with the student; The independent nature of self-instructional units facilitated the updating of study materials without major revisions; and It serves as model for teachers who wish to develop their own materials and insert their own personality.

According to Lardizabal et al (1996), students can find the following advantages: They work at their own pace; They assume responsibility for learning; They find that textbooks are not the only source of learning; They know exactly what they have to learn; They are encouraged to master the module; and Competition for grades is reduced.

For teachers, Lardizabal et al (1996) said: They have time to pay attention to individual learning problems; They can identify problems earlier; They are free to serve as resource persons to answer and help those who need help; There is better cooperation between teacher and students.

Authors present modules with different parts. According to Murray, a module must have a) Statement of Purpose, b) Desirable Prerequisite Skills, c) Instructional Objectives, d) Implementers of the Modules, e) The Modular Program, f) Related Experience, g) Evaluative Pretest, and h) Assessment of Module.

According to Garcia (1996), it must have a) Title, b) Target Population, c) Overview, d) Objectives, e) Instructions to the Learners, f) Entry Behavior and Prerequisite Skills, g) Pretest, h) Pretest Feedback and Evaluation, i) Learning Activities, j) Posttest, k) Posttest Feedback and Evaluation, and l) Teacher's Manual or Guide. Lardizabal et al (1996) mentioned that it must have a) Statement of Purpose or Rationale, b) Pretest, c) Objectives, d) Instructional Activities, and e) Posttest.

Schools in the Philippines today implement the curriculum with the modular approach at some points in their classroom activities. They are used as enrichment or supplementary instructional materials for learning concepts and skills, or as remedial instruction is necessary for slow learners and as advance instruction for the fast and highly motivated ones.

This research aimed to validate the module in Assessment of Students' Learning. Specifically, it sought to determine students' mean evaluation of the developed module in terms of specific objectives, content, language used, and evaluation activities. The effectiveness of the said module was also determined using the pretest and posttest scores administered to the students.

## 2. Materials and Methods

This research employed descriptive-evaluative design. The respondents of this study were the 45 randomly selected second year College of Teacher Education students who used the module in their Assessment of Students' Learning 1 class.

The modified Questionnaire Checklist was used in validating the developed module along the following criteria: Specific Objectives, Content, Language Used, and Evaluation Activities. Weighted mean and standard deviation were used to describe student's evaluation of the module. During the entire semester, student-respondents were given pretest and posttest in every lessons covered in the module. These scores were recorded and computed to determine the effectiveness of the module. Dependent t-test was employed to formulate inferences on the mean difference between the paired scores.

## 3. Results and Discussion

Table 1 shows the mean and standard deviation of student's evaluation of module in terms of specific objectives.

**Table 1:** Mean and standard deviation of student’s evaluation of module in terms of specific objectives

Statement	Mean	Std. Dev.	Verbal Description
1) Each lesson in the module is accompanied by specific objectives.	4.64	0.61	To a Very High Extent
2) The objectives are stated in behavioral terms.	4.33	0.71	To a High Extent
3) The specific objectives are measurable.	4.29	0.73	To a High Extent
4) The specific objectives are realistic.	4.47	0.73	To a High Extent
5) The specific objectives are attainable.	4.36	0.86	To a High Extent

The student-respondents highly noticed that each lesson in the module is accompanied by specific objectives which are stated in behavioral terms, measurable, realistic, and attainable.

The researcher adheres to what the philosopher Seneca once said, “If one does not know to which port one is sailing, no wind is favorable.” When you know where you are headed, you can more easily get there. Well-defined and articulated learning objectives are important because they provide students with a clear purpose to focus their learning efforts direct your choice of instructional activities and guide your assessment strategies.

Table 2 presents the mean and standard deviation of student’s evaluation of module in terms of content.

**Table 2:** Mean and standard deviation of student’s evaluation of module in terms of content

Statement	Mean	Std. Dev.	Verbal Description
1) Expected learning competencies are contained in the module.	4.38	0.72	To a High Extent
2) The lessons are presented at a pace that allows for reflection and review.	4.16	0.77	To a High Extent
3) There is adequate presentation/discussion of content.	4.29	0.66	To a High Extent
4) The ideas, concepts and points presented are well-explained.	4.40	0.65	To a High Extent
5) Supplementary activities enhance student’s understanding of the content.	4.36	0.65	To a High Extent

The student-respondents highly recognized that the ideas, concepts, and points presented are well explained; that expected learning competencies are contained in the modules; that supplementary activities enhance student’s understanding of the content; that there is adequate presentation/discussion of content; and that the lessons are presented at a pace that allows for reflection and review.

These results suggest that the students who used the module find the material comprehensive enough to facilitate their learning processes in this subject. As one student-respondent has commented: “The module can be very helpful in reviewing for future exams because of its comprehensive content. I hope, every subject has this kind of module. Highly recommended!”. Another student added “the module is easy to use and very comprehensive for students”.

Table 3 illustrates the mean and standard deviation of student’s evaluation of module in terms of language used.

**Table 3:** Mean and standard deviation of student’s evaluation of module in terms of language used

Statement	Mean	Std. Dev.	Verbal Description
1) The words used in the module are correctly used.	4.49	0.66	To a High Extent
2) The vocabulary used is suitable to the comprehension level of students.	4.38	0.68	To a High Extent
3) Instructions to students are clear and easy to follow.	4.33	0.74	To a High Extent
4) The lessons are presented in paragraphs/sentences that are grammatically correct.	4.51	0.66	To a Very High Extent
5) The module is accompanied by clear and specific directions for their use.	4.44	0.66	To a High Extent

The student-respondents highly acknowledged that the lessons are presented in paragraphs/sentences that are grammatically correct; that the words used in the module are correctly used; that the module is accompanied by clear and specific directions for their use; that the vocabulary used is suitable to the comprehension level of students; and that instructions to students are clear and easy to follow.

Although the students gave a high general mean evaluation on the module in terms of language used, the researcher need to consider the suggestion of one of his respondents who wrote that: “clearer and more specific use of words”.

Table 4 reveals the mean and standard deviation of student’s evaluation of module in terms of evaluation activities.

**Table 4:** Mean and standard deviation of student’s evaluation of module in terms of evaluation activities

Statement	Mean	Std. Dev.	Verbal Description
1) The module has provision for pretest, self-assessment and posttest in each lesson.	4.62	0.58	To a Very High Extent
2) The tests/evaluation activities are easy to score.	4.11	0.83	To a High Extent
3) The items in the evaluation are congruent to the specific objectives.	4.44	0.69	To a High Extent
4) There are test items which measure higher-order thinking skills (HOTS).	4.49	0.63	To a Very High Extent
5) The test items cover the important competencies to be developed.	4.56	0.55	To a Very High Extent

The student-respondents declared that the module has provision for pretest, self-assessment and posttest in each lesson; that the test items cover the important competencies to be developed; that there are test items which measure higher-order thinking skills (HOTS); that the items in the evaluation are congruent to the specific objectives; and that the tests/evaluation activities are easy to score.

Even though this portion obtained a high student’s mean evaluation, three students reported that “more group activity should be provided”, ... “add some crossword, finding words, etc...” ... “to have more interesting and challenging group activities”.

These comments must be taken into consideration as the researcher modify the module for future use.

Table 5 presents the pretest and posttest mean scores of 48 student-respondents in Assessment of Student Learning 1.

**Table 5:** Mean and standard deviation of student’s pretest and posttest scores in Assessment of Student Learning 1

Test	Mean	Std. Dev.	Verbal Description
Pretest	55.78	10.14	Below Average
Posttest	78.80	6.07	Above Average

As presented in Table 5, out of 100 items, the student-respondents obtained a mean score of 55.78 and 78.80 in their pretest and posttest respectively which can be interpreted as below average and above average. The standard deviations of 10.14 for the pretest and 6.07 for the posttest signify that student’s scores in the posttest is less scattered around the mean compared to their pretest scores.

Table 6 reveals the test of significant difference between the pretest and posttest scores of the student-respondents.

**Table 6:** test of significant difference between the pretest and posttest scores of the student-respondents

Test	Mean	Mean Difference	Computed t-value (df = 44)	p-value	Remarks
Pretest	55.78	-23.02	18.946**	<.01	Significant
Posttest	78.80				

\*\*Significant at .01 level

Table 6 revealed that there is a significant difference between the pretest and posttest scores of the student-respondents,  $t = 18.948$  ( $df = 44$ );  $p < .01$ . At 99% confidence level, the mean difference of 23.02 in favor of the posttest indicates that the students performed better in this test than in the pretest. With these findings, it can be assumed that the module used by the students was effective.

#### 4. Summary of Findings

The student-respondents highly noticed that each lesson in the module is accompanied by specific objectives which are stated in behavioral terms, measurable, realistic, and attainable.

They highly recognized that the ideas, concepts, and points presented in the module are well explained; that expected learning competencies are contained in the modules; that supplementary activities enhance student’s understanding of the content; that there is adequate presentation/discussion of content; and that the lessons are presented at a pace that allows for reflection and review.

In terms of the language used, the students highly acknowledged that the lessons are presented in paragraphs/sentences that are grammatically correct; that the words used in the module are correctly used; that the module is accompanied by clear and specific directions for their use; that the vocabulary used is suitable to the comprehension level of students; and that instructions to students are clear and easy to follow.

When it comes to evaluation activities, they declared that the module has provision for pretest, self-assessment and posttest in each lesson; that the test items cover the important competencies to be developed; that there are test items which measure higher-order thinking skills (HOTS); that the items in the evaluation are congruent to the specific objectives; and that the tests/evaluation activities are easy to score.

The students got a below average score in the pretest and an above average scores was obtained in their posttest. When tested for a significant difference between their pretest and posttest mean scores, it was found out to be statistically significant.

#### 5. Conclusion

The null hypothesis stating that “there is no significant difference between the pretest and posttest scores of the students” is REJECTED. This means that the students performed better in the posttest than in the pretest. Hence, the module in Assessment in Student Learning 1 was effective.

#### 6. Recommendations

It is suggested that CTE students in the succeeding school year must use the developed and validated module since it was found effective in facilitating learning. Teachers handling the subject may utilize the module in implementing the course learning program for it will help them in many ways. They are also encouraged to develop their own module in other Professional Education subjects and have them validated and tested for effectiveness.

The office of Curriculum and Instruction Development for Quality Assurance (CIDQA) is invited to conduct faculty training programs which highlighted instructional material development. Other LSPU campuses and universities may use this module in teaching Assessment of Student Learning 1 for the benefits they may derive upon using it.

#### References

- [1] Cross, P. (1976) *Accent on Learning: Improving Instruction and Reshaping the Curriculum*, California Jersey Bass Publishing Inc.
- [2] Duker, S. (1972) *Individualized Instruction*, (New Jersey, The Scarecrow Press, Inc.,
- [3] Hughes, J.(1962) *Programmed Instructions for School and Industry*. Chicago Science and Research Associates, Inc.
- [4] Garcia, M. (1989) *Focus on Teaching*. (Quiapo, Manila: Rex Book Store
- [5] Gibbons, (1971) *Individualized Instruction*, (New York, Teacher’s Columbia University Press Inc.
- [6] Good, C. (1975). *Dictionary of Education*. (Quezon City, Philippines, Phoenix Press Inc.,
- [7] Lardizabal, A. et al. (1996). *Principles and Methods of Teaching*. (Quezon City: Phoenix Publishing House, Inc.
- [8] Nepomuceno, F. (n.d.) *Modular Approach to Instruction (Handout)*