



## RESEARCH PAPER

## OPEN ACCESS

**The study and analysis of models and methods of academic achievement assessment in a Corporate University****Mohammad Javad Kheradmand Mehr, Reza Hossein Pour\****<sup>1</sup>Department of Social and Cultural Sciences, Comprehensive University Imam Hossein, Tehran, Iran***Key words:** Academic achievement assessment, Models and methods, Corporate University.

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**Abstract**

Assessment plays an integral role in education process, since without conducting a correct and reliable assessment, it is safe to say that the education process is left unfinished and does not come to an end. One of the concerns of educational administrators and professors is conducting different assessments during the education period. The present study is an applied research in terms of objective and it is a descriptive-survey research in terms of methodology. The required data was collected by a questionnaire designed by the researcher and was analyzed by SPSS software. The research findings suggest that 92 percent of professors and instructors consider the method of academic achievement assessment as the written test and 61.8 percent of them consider it as holding exams with essay or extended response questions and a large percentage of professors and instructors (71 percent) consider summative assessment as the priority of assessment. In the current educational assessment methods, the students' level of knowledge, rather than the other levels of teaching and learning, is assessed more by the professors. Although not so satisfactory, this method is considered as an advantage in assessment, since it has some superiority over the assessment of other levels. However, this assessment method has many drawbacks such as leading students towards mnemonic learning and the storage of short-term memories. In addition, in most cases, the answers to the questions and assessment tools are predetermined by the professor and the learners must answer the questions in a specific and predetermined framework which itself requires the storage of memories in the learners' brain.

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## Introduction

One of the main and integral components of education process is assessment. The assessment of students' learning which is conducted through different methods such as mid-term and final exams, class researches, practical activities, etc, from the beginning years of formal education until the end of university researches or in any educational period with specific goals is considered as the important and pivotal educational activities of instructors and teachers. As the effectiveness of the teachers and instructors in education process is assessed according to the level of their mastery and control over the educational methods and techniques, the awareness of the methods and techniques of measurement and assessment of students' learning is a part of the characteristics of teachers and instructors (Seif, 1992:3).

When teachers are satisfied with the outcome of their teaching and are able to have a correct assessment of the students based on strong evidences and findings, it can be stated that they have been internally rewarded.

All activities that are carried out by students, teachers and other educational administrators are called "program". How to create the suitable conditions for learning and how to implement the program is called the "methodology". All facilities and tools which are used according to the goal, program and education methods are part of educational tool. At the end of each educational program, the teachers are interested to examine and assess the result of their educational activities or, in other words, the changes made in the students' behavior to determine how much they have achieved their desired goals. This section of education process is called "assessment" (Pasha Sharif and Kia Manesh, 1988:8).

Due to the necessity and importance of the assessment of academic achievement and its role in determining the level of success of the education process and also due to the necessity of creating a

systematic method, an attempt has been made in this article to study and examine the existing methods and the quality of academic achievement assessment in the professors' assessment process of the students' learning and the level of usage of the achieved results for making the necessary improvements and changes in education process in a corporate university and to provide an optimal method of the assessment of academic achievement by identifying the learners' strengths and weaknesses.

The implementation of this research can have the following results and usages for decision-makers, planners and educational executives of this corporate university:

1. Providing a standard and optimal method for the assessment of academic achievement for the university which includes the strong and positive advantages of the existing method and eliminates the existing disadvantages and problems.
2. Providing the administrators, planners, executives, professors and instructors with a correct feedback regarding the destructive factors and the current assessment methods in the university in order to make decision for optimizing the process and methods of academic achievement assessment at the level of planning and implementation of education
3. Informing the administrators, professors and instructors of the successful factors in the process and methods of academic achievement assessment in order to make the best use of these factors in the process of academic achievement assessment.

The purpose of this study is to examine the models and methods of academic achievement assessment of students' learning by professors and instructors and to inform of the difficulties of assessment of their learning in order to provide optimal solutions.

### Material and methods

The present study is an applied research in terms of objective and it is a descriptive-survey research in terms of data collection method. Descriptive-analytic method is used in order to examine the current status. The sample consists of university professors and instructors. To determine the sample size, from a 95 professor-instructor sample, 76 professors and instructors were selected as the sample by Morgan table. Stratified random sampling was used to select the sample members and the data was analyzed by using SPSS software.

A questionnaire was used in order to collect the required data for hypothesis test. In order to determine the validity and reliability of the variables, face and content validity method was used and in order to test the reliability of the questionnaires, Cronbach's alpha which is applied to multi-scale questions was used. The obtained Cronbach's alpha coefficient is 0/750.

#### *The research questions include*

1. What are the different types of academic achievement assessment used by professors and instructors in a corporate university?
2. How is the process of formation and development of the current methods of academic achievement assessment and the degree of its conformance with the level of teaching and learning in the mentioned corporate university?

#### *The Methods of Academic Assessment*

The assessment of students' learning includes both final and supplementary learning. The final performance and learning are based on the main educational goals or the ultimate goals, and supplementary performances are related to the secondary education goals which lead the learner to achieve final learning. Accordingly, the assessment should be conducted permanently and continuously at the beginning, during and at the end of education period. Therefore, assessment as one of the activities

of education process is not limited to the assessment of the level of student' learning at the end of education process .Instead, it should be conducted during the education.

Assessment is not limited to the classification of learners .Rather, it can have some goals beyond that, for instance, assessment in order to make decision for starting education and solving problems, assessment in order to become aware of the level of achievement and to make timely decision for improvement, and assessment in order to make the final decision (NajafiZand, 1991:91).

#### *1- Assessment Methods Based on Time and Implementation Procedures*

Bloom *et al.* have identified three types of assessment based on time and its implementation procedures: diagnostic assessment, formative assessment (procedural) and summative assessment (accumulative) (ZhorzhNavazeh and ZhalKaverni, translated by Ganji, 1985:18).

### Results and discussions

#### *Literature Review*

SaeidMasoudi, SeyfollahBahari and Mohammad Reza Behrangi (2003) studied the factors affecting the selection of assessment methods of students' learning in agricultural technical-vocational education by educators. The results of this study indicate that although the studied educators estimated the level of their knowledge regarding different assessment tests relatively well, using different tests and different methods of assessment by the educators was not very much and they often confined themselves with one type of assessment which was at the end of education.

Shamshiri (2007) examined the logical relationship between the assessment methods and the principles of educational philosophy governing Iran's system of education (the role of assessment in the realization of goals).This study suggests that there is a profound and obvious conflict between quantitative assessment methods governing Iran's system of education which

are originally quite positivist (assessment based on behavioral goals) and conceptualization of education and also the goals of education which are all somehow derived from the principles of Islamic education. He is of this belief that the issue of qualitative assessment and its appropriate methods, in addition to conforming to the concept of education in Iran's education system, leads to the realization of grand goals. Darvishi (2006) aiming to examine the status of academic achievement assessment in University of Birjand, found out that some professors and students are unaware of academic achievement assessment based on three assessment models before, during and after teaching and do not have the necessary information in this regard. The achieved results (especially in initial assessment) confirm the results of the research conducted by Ali Delavar who stated that 35 percent of BA professors and 36 percent of MA professors should take measures to hold such exams.

Sepasi (1993), NikNejad (1993) and Naderi (1990) examined the problems and drawbacks of current methods of assessment of students' learning in separate studies and the results suggest that if educational goals are divided into smaller units and the level of students' achievement to the desired goals is assessed at the end of each unit, the professors are able to identify the strengths and weaknesses of students before starting next lesson and correct them if necessary. In his study, KhoshNejad (2001) demonstrated that in our evaluation system, the standards of success are applied to specific scores which are obtained by some tools and do not have any validity and reliability. Basically, there is no evidence that can tell us to what extent a raw score indicates an individual's mastery of the skill, while these scores are often considered as the criterion in gaining privileges or educational and occupational substitutions. Regarding measuring tools, YahyaMohajer (2005) concluded that classic tools have been used more and performance measurements and the new processes are considered less. The level of understanding plays the most important role in the learning level in academic achievement assessment of

elementary school students in Tehran. J.L. Brown *et al.* (1999) examined the final impacts of feedback of formative assessment in a program. In this study, it has been pointed out that feedback in formative assessment affects the reinforcement and the effectiveness of a program. This study focuses on conceptualization and theoretical interpretation of formative assessment feedback and separates it from other assessments such as summative assessment.

#### *The Approaches of Academic Assessment*

##### *1. The Seven Categories of Assessment Studies Center of "University of California"*

This classification includes goal-oriented models with emphasis on the measurement of the academic achievement of learners, decision-oriented models with emphasis on the information needs of decision makers, responsive-oriented models with emphasis on the programming process, experimented-oriented models with the emphasis on the effects of the program and the establishment of a casual relationship in the assessed program, goal-free models with emphasis on the evaluation of effectiveness of particular programs, advocacy-oriented with emphasis on the measurement of the effects of evaluated program and the capacity of the program in meeting the needs of the concerned people and finally, utilization-oriented models with emphasis on the practical use of information by real users (Bazargan, 2009).

##### *2. The Classification of Worthen and Sanders (2008)*

These two experts in the field of evaluation have classified the continuum of quantitative and qualitative evaluation models in 6 categories including goal-oriented, management-oriented, consumer-oriented, expertise-oriented, advocacy-oriented (experts' disagreement) and naturalistic and participant models. Goal-oriented model is completely quantitative and naturalistic and participant model is completely qualitative. In other words, one end of the continuum (goal-oriented model) is about objective and utilitarian evaluation and the other end (participant model) is about

subjective, intuitive and pluralistic evaluation (Seif, 2004).

### 3. Patton's Classification

He has introduced 2 paradigm models in academic assessment: quantitative paradigm model and qualitative paradigm model (Patton, 2002). It should be noted that the proposers of the approaches have designed each approach with specific goals, audiences and procedures. Therefore, the type of questions that each model attempts to find an answer for is also different and accordingly, the expected outcomes of the implementation of each model are not similar.

#### *Diagnostic Assessment*

All educational activities are carried out to make desirable changes in students. However, any changes require prior preparation. In other words, learning in each case involves activities that form the basis for further learning, therefore, before teaching any subject, it is necessary that the teacher determine whether or not the student has learned the abilities and skills which is the requisite for learning new things. Achieving such information requires assessment and this kind of assessment is called diagnostic assessment (Shabani, 1992:397).

In general, diagnostic assessment is based on the following objectives:

1. Assessing students' prior learning and awareness of their level of readiness concerning the new subject.
2. Identifying students' weaknesses and strengths and helping them to compensate for the lagging and preparing them.
3. Planning and conforming programs and teaching methods with the students' readiness.
4. Teaching prior subjects before starting a new one, if necessary (Pasha Sharif and Kia Manesh, 1988:18).

When a teacher wants to start a new lesson, he/she should consider the students' prior knowledge and relate what he/she wants to say with what the students have already learned. We must also understand the differences between students. Previous experiences of students are different (Shariatmadari, 1996:120).

#### *Formative Assessment (Procedural)*

Formative assessment is conducted during education, in each session or at different times, at the end of each lesson or academic quarter. This type of assessment, in addition to identifying learners' progress during education, can help teachers and students realize their strengths and weaknesses. From this perspective, this type of assessment can be considered as a self-evaluation for teachers. Examining the level of success in achieving objectives is possible by procedural assessment. Therefore, teachers can modify the components of the program and remedy their weaknesses. Asking students some questions at the end of each section of teaching in a session and answering them by students and doing the exercises at the end of the lesson are some examples of formative assessment. By conducting this assessment, it would be determined that in which subjects the teacher has achieved the desired goals and which parts need further explanation or practice (Mirza Beigi, 2003). According to what has been stated, using formative assessment is possible by the following categories:

#### *A) Step-by-Step Learning*

One of the main usages of formative or procedural assessment is to help step-by-step learning which means that teaching the material of a subject is done step by step and learning previous units becomes necessary to complete learning of subsequent units. Accordingly, the results of formative assessment can be considered as effective reward and motivation for learning new things and the sense of achievement of those students who have achieved complete learning will be reinforced and the students who have not achieved much success in learning will achieve

further success through remedial education and they will consequently be encouraged to learn more.

#### *B) The Improvement of Teaching Methods*

The other usage of formative assessment is the improvement of teaching methods. Through the findings of this type of assessment, teachers can improve their teaching method or select a better one (Shabani, 1992:400).

To benefit from the results of formative assessment completely, setting accurate and behavioral goals is necessary so that teachers will be able to assess the students' success in achieving the specific goals of continuous units of the lesson in the process of learning (Seif, 2001:94-95). Formative assessment is a systematic and continuous assessment and is conducted to assess the students' learning at the end of each section or chapter of the program during the academic year. The purposes of formative assessment are:

1. Informing of the quality of the curriculum and its progress
2. Examining the professors' teaching methods and the quality of students' learning and guiding them and the gradual improvement of teaching and learning process
3. Getting the scores and assessing the step-by-step learning of students within the framework of minor and behavioral goals of that section (Mohammad Mirzaie, 1998:28)

#### *Summative Assessment (accumulative, final)*

This assessment is conducted at the end of the academic year or academic course through which it is determined that to what extent the learners have achieved the expected educational goals at the end of the period. It also serves another purpose which is following the learners' status after completing the course to determine if the knowledge, attitudes and skills which have been taught during the education

period are being used by the learners or how they are being used. By this method, the effectiveness and efficiency of the program can be understood (MirzaBeigi, 2001:333).

In the author's opinion, what is explained in the second part of summative assessment regarding following the learners after completing the course which is stated from the book "Curriculum and Lesson Plans" written by MirzaBeigi, can be regarded as a new classification entitled "effective assessment" which will be explained later. The Types of Assessment Based on the Interpretation of Results. The assessment of academic achievement of learners can be classified in two categories based on the method of the interpretation of results: criterion-referenced and norm-referenced assessment

#### *Criterion-Referenced Assessment (Criterion-Based):*

In criterion-referenced assessment, the tests are prepared based on absolute criterion and the student's achievement is assessed according to what has been taught. In other words, if a student's performance in a test is interpreted according to a pre-determined criterion, it is called criterion-referenced or criterion-based assessment. Passing the tests that are based on absolute criterion requires learning academic objectives at a level which is determined by the teacher. This type of assessment determines whether or not students have learned the decided objectives at a desirable level. For example, an English teacher prepares a test consisting of 100 questions according to the objective of the lesson and considers the passing criterion as answering 90 questions. In this way, only the students who give correct answers to 90 questions or more are able to pass. Diagnostic assessment is related to learning skills and most final assessments are criterion-referenced assessment.

#### *Normative Assessments (Norm-Referenced)*

In normative assessment, the tests are prepared based on a relative norm rather than an absolute criterion. Norm-referenced assessment does not

measure student's performance or achievement according to an academic objective or a predetermined criterion. Instead, the student's performance is compared with that of a group of students. By using normative assessment, student's achievement of academic objectives or the taught subjects can be determined. In this type of assessment, criterion is not important. Rather, ranking students is based on the score they get from the highest to the lowest score, respectively. Each student's score is compared according to the mean scores of the class or the related age group. In this type of assessment, the main purpose is to determine the status of a student compared to that of other students, while in criterion-references assessment, the main purpose is to determine how much a student has learned from what was supposed to be learned and to what extent he/she is able to perform the supposed task. University entrance exams are usually normative assessment tests.

#### *Examining the Current Status of Academic Achievement Assessment in a Corporate University*

The assessment of academic achievement of learners in any courses is conducted based on the presence and participation in the class and the results of the final examination. The professors or instructors of any courses are the evaluators of learner in that course and the criterion for students' academic achievement is the achieved score. The scores of students in each class are determined by a number between zero and twenty, and the minimum passing grade in each course for students is 14. In the case of more than 3.16 absences, authorized absence will lead to the deletion of the course and unauthorized absence will result in a zero score.

The assessment of academic achievement of courses which, according to the approved educational program, are offered with a project for instance apprenticeship, internship and field operations, can remain unfinished if it is approved by the professor, instructor or the Department that completing it during the semester is not possible. The

incomplete score must be converted in to final score at the end of the next semester, at most. The results of the researches conducted by Adel Gholi Pour in 2003 and those of the present study in relation to this subject indicate that:

1. The majority of professors and instructors consider the final (summative) assessment as the first priority and pay less attention to other types of academic achievement assessment especially diagnostic and formative assessments.
2. In evaluating learning, the ability to analyze and creative power are not taken in to consideration and the used assessment tools measure the lowest level of learning.
3. Professors and instructors focus more on essay and mnemonic questions.
4. Professors and instructors, more or less, use the achieved results from the assessment to modify and improve the teaching methods.

Based on studies related to the research subject, it was determined that for analyzing the evaluation system of academic achievement of learners, it is necessary that the following factors be considered which have been regarded as the main basis in this study. Using different types of assessment, using different methods of assessment, using the assessment results to improve teaching and learning process, assessing different levels of learning.

#### *The Conceptual Model of Research*

According to the goals and questions of the research and theoretical foundations, the implementation model of the research in the sample is formulated in the form of tables of determining components, characteristics and indicators as follows:

**Table 1.** The Studied Components, Characteristics and Indicators.

Data Collection Tool- Guidelines Relevant to the Questionnaire	Indicators	Characteristics	Component
Question 1-2 Questionnaire ((A))	-Diagnostic (initial) Academic achievement assessment: formative (procedural) –summative (final)	Types of Academic Achievement Assessment	
Question 3 (3/1- 3/4) Questionnaire ((A))		Methods of Academic Achievement Assessment	
Question 4			
Questionnaire ((A))	<p>Based on:</p> <ul style="list-style-type: none"> <li>- The detailed program and the given instruction (implementation without manipulation)</li> <li>- The knowledge skills, and experience of instructors (the attitude of professor and instructor)</li> <li>- The characteristics and demands of the learners (learner-centered)</li> <li>- Materials , equipment , and available facilities</li> </ul>		

*Research Findings*

What are the different types of academic achievement assessment used by professors and instructors in a corporate university?

The above table indicates that professors and instructors have used summative assessment morewith 71.1 percent for academic achievement assessment.



The first research question:

What are the methods of academic achievement assessment used by professors and instructors for learners in a corporate university?

According to the above table, in terms of the implementation method, professors and instructors have used written test more with 86.8 percent for academic achievement assessment.

The above table indicates that professors and instructors have used achievement test more with 92.1 percent for academic achievement assessment.

**Table 2.** Types of the Used Academic Achievement Assessment.

No		Yes		Assessment Type
Percent	Frequency	Percent	Frequency	
69.7%	53	30.3%	23	Diagnostic Assessment (Initial)
48.7%	37	51.3%	39	Formative Assessment (procedural/during education)
28.9%	22	71.1%	54	Summative Assessment (Final)
68.4%	52	31.6%	24	Individual Assessment
80.3%	61	19.7%	15	Group Assessment
97.4%	74	2.6%	2	Criterion-Referenced Assessment
97.4%	74	2.6%	2	Norm-Referenced Assessment

**Table 3.** Types of Tests in Terms of Subject.

No		Yes		Test Type
Percent	Frequency	Percent	Frequency	
55.3%	42	44.7%	34	Aptitude Test
7.9%	6	92.1%	70	Achievement Test

**Table 4.** Types of Tests in Terms of Implementation Method.

No		Yes		Test Type
Percent	Frequency	Percent	Frequency	
13.2%	10	86.8%	66	Written test
44.7%	34	55.3%	42	Oral test
52.6%	40	47.4%	36	Field Test
71.1%	54	28.9%	22	Observation

**Table 5.** Types of Written Tests.

No		Yes		Test Type
Percent	Frequency	Percent	Frequency	
53.9%	41	46.1%	35	Essay (limited response)
38.2%	29	61.8%	47	Essay (extended response)
55.3%	42	44.7%	34	Objective (multiple-choice)
80.3%	61	19.7%	15	Objective (true-false)
68.4%	52	31.6%	24	Objective (completion)
92.1%	70	7.9%	6	Objective (matching)
77.6%	59	22.4%	17	Objective (short answer)

The results of table 5 indicate that professors and instructors have considered essay questions (extended response) as the first priority for academic achievement assessment in terms of types of tests and

considered limited response, objective - multiple-choice, objective -completion, objective -short answer, objective - true and false and objective – matching tests as the other priorities , respectively.

**Table 6.**Types of Tests in Terms of Construction and Preparation Accuracy.

No		Yes		Test Type
Percent	Frequency	Percent	Frequency	
10.5%	8	89.5%	68	(Self-Made) Teacher-made
51.3%	39	48.7%	37	Standardized Test

The results of table 6 indicate that in terms of construction and preparation accuracy, due to the variety, 89.5 percent of professors and instructors have considered teacher-made test as the first priority and standardized test as the next priority.

*The second Research Question*

How is the process of formation and development of the current methods of academic achievement assessment and the degree of its conformance with the level of teaching and learning in the mentioned corporate university?

**Table 7.** The Process of Formation and Implementation of Assessment in Terms of the Attitude of Professors and Instructors.

No		Yes		The Method of Assessment Implementation
Percent	Frequency	Percent	Frequency	
53.9%	41	46.1%	35	It is conducted based on the detailed program and the specified instruction(implementation without manipulation)
27.6%	21	72.4%	55	It is conducted based on the knowledge , skills and experience of instructors (the attitude of professor and instructor)
53.9%	41	46.1%	35	It is conducted based on the characteristics and demands of the learners (learner-centered)
55.3%	42	44.7%	34	It is conducted based on materials , equipment , and available facilities

The results of table 7 indicate that more than 72 percent of professors and instructors have considered the process of formation and development of different types and methods of academic achievement assessment which is based on knowledge, skills and experience of professors and instructors as the first priority ,and a detailed program, specifications and demands of learners ,materials , equipment , and available facilities as the other priorities ,respectively,

which are the basis of formation , development and implementation process of assessment.

**Conclusion**

According to the achieved results of the questionnaire’s questions concerning the main research question, it could be stated that the most common assessment method of academic achievement in a corporate university is the written test with essay or extended response questions. A

high percentage of professors and instructors (71.1%) considered summative assessment as the assessment priority and considered the other types of academic achievement assessment such as formative, individual, group, criterion-referenced and normative assessment as the next priorities. Based on the results of the second research question, it can be concluded that currently, the main factors which lead to the development of assessment methods of academic achievement in a corporate university are the skill and experience of professors and instructors, therefore, there will be the possibility of the involvement of the private views contrary to the specified programs in this regard. However, in the current educational assessment methods, the level of students' knowledge, rather than other levels of teaching and learning, is assessed by professors and instructors. Although not so satisfactory, this method is considered as an advantage in assessment; since it has some superiority over the assessment methods of other levels. However, this assessment method has many drawbacks such as leading students towards mnemonic learning and the storage of short-term memories. In addition, in most cases, the answer to the questions and assessment tools are predetermined by the professor and the learner must answer the questions in a specific and predetermined framework which itself requires the storage of memories in the learners' brain.

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