ITJ | The International Tax Journal

Reality of the University of Bejaia as a model training and designing electronic tests in Algerian Universities

Dr. Aouchiche El-Djoudi [1], and **Dr. Hadji Hakima** [2]

[1] Lecturer, Mouloud Mammeri University, Tizi Ouzou. Email: aouchicheeldjoudi1981@gmail.com
[2] Lecturer, Mouloud Mammeri University, Tizi Ouzou. Email: hadjihakima565@yahoo.com

Abstract---This study aims to identify the general frameworks in designing electronic tests in Algerian universities and the extent to which professors are able to practice evaluation using this type of assessment. To achieve the study's objective, the two researchers used the descriptive method to determine the reality of using electronic tests at Algerian universities – Abdel Rahman Mira University – Faculty of Human and Social Sciences as a model. To collect the information necessary to answer the study questions, the researchers relied on designing a questionnaire form to describe the axes of the general framework in designing electronic tests. The study sample consisted of (100) male and female professors from Abdel Rahman Mira University – Bejaia – Faculty of Human and Social Sciences as a model. The study results showed that this method has advantages and disadvantages on the quality of education in Algerian universities.

Keywords---electronic tests, teacher training.

A. Theoretical framework of the study:

Introduction

Evaluation is considered one of the important elements in the activity of educational systems and institutions; in light of its results, processes of development and improvement are carried out. Hamdi Shaker Mahmoud (2009) confirms that "educational interventions can be issued with the intention of modifying and developing the educational system and estimating the effects of the curriculum on the growth of students" (p. 24). Thus, evaluation is one of the basic pillars in the activity of these systems

How to Cite:
El-Djoudi, A., & Hakima, H. (2026). Reality of the University of Bejaia as a model training and designing electronic tests in Algerian Universities. *The International Tax Journal*, *53*(1), 463–471. Retrieved from https://internationaltaxjournal.online/index.php/itj/article/view/539

The International tax journal ISSN: 0097-7314 E-ISSN: 3066-2370 © 2026

Submitted: 18 February 2025 | Revised: 27 May 2025 | Accepted: 16 August 2025

and institutions to ensure that they are moving in the direction that achieves their objectives and increases their effectiveness and efficiency. (Hamdi Shaker Mahmoud, 2009, p. 87).

Tests represent one of the most important and widespread evaluation tools among teachers and professors because of their features: ease of preparation and correction and objectivity, as well as their role and importance in diagnosing the educational situation. Tests of different types are means that allow the collection of information that cannot be obtained otherwise; this information helps take many measures and decisions related to students, whether regarding their success and admission to higher levels, measuring their achievement level, or directing them towards specializations that suit them, in addition to diagnosing strengths and weaknesses in students' skills and knowledge, which helps in evaluating and developing curricula, strategies, and teaching methods. (Salah Ahmed Murad & Amin Ali Suleiman, 2005, p. 85)

Due to the enormous technological development witnessed by communication technologies that affected all aspects of human life including the field of education, technology has become an essential element and player in the success and effectiveness of the educational process in all its aspects, leading to the spread of e-learning tools in schools and educational institutions. New means emerged, among them electronic or computerized tests, which enabled teachers and learners to overcome the situation imposed by the Coronavirus pandemic. This type of test has become widespread and popular because of its positive aspects and advantages that are not limited to measuring students' achievement but extend to building question banks and also providing quick analysis of these tests and questions.

Problematic of the study:

Despite the features and characteristics offered by the development of communication technologies for educational work—ease of use, fast response, and the ability to overcome obstacles and difficulties that hinder educational work as exemplified during the Coronavirus pandemic—we find that many teachers in higher education institutions lean toward using paper tests and avoid using electronic tests despite their importance and the benefits they provide in the field of assessment.

Evaluation has witnessed fundamental changes in its concepts, basic principles, methodologies, methods, and techniques over the past few decades. Experts focused on innovating ways and methods to rationalize and guide evaluation processes. Many specialists believe that the competency-based approach involves both the teacher and the student in defining evaluation criteria, where the teacher and the student are the center of the learning process. The student's role lies in his ability to demonstrate what he expresses of cognitive knowledge, psychomotor skills, and attitudes — the components that indicate his success. In this approach, the pupil is aware of what he is learning and what he has acquired and therefore can contribute to setting evaluation criteria (Mohammed Boualaq, 2004: 138).

The competency-based approach requires the teacher to apply evaluation in all its forms, which necessitates defining objectives and criteria specific to the intended competencies, allowing the teacher to identify the learner's weaknesses and strengths on the one hand and his teaching on the other. Accordingly, the issue of university professors' familiarity with the techniques of preparing and designing electronic tests is important to determine the extent of their practice and mastery of this type of testing, given its importance in evaluating student performance and achieving quality levels in university teaching. Hence this study was conducted to answer the following question:
Do university teaching professors suffer from a lack of training in designing electronic tests? This is addressed through the following sub-questions :

- Do university professors suffer deficiencies in designing electronic tests resulting from (their training, academic qualifications, professional experiences, and field of research)?
- Do university professors face difficulties related to applying electronic tests to students?

Significance of the study: The importance of the study lies in the significance of the topic it addresses and is manifested in:

- The importance of the evaluation process in improving the quality of the educational process.
- Presenting a true picture of the reality of using electronic tests by professors in Algerian university institutions.
- Drawing the attention of professors and administrators in Algerian universities to the importance of electronic tests and the necessity of expanding their use.
- Allowing identification of professors' needs in the field of designing and preparing electronic tests.

Objectives of the study:

Through answering its questions, the study aims to:

- Investigate professors' deficiencies in designing and preparing electronic tests.
- Investigate difficulties related to applying electronic tests to students.

Operational definition of study terms:

A- Definition of electronic tests:

They are one of the techniques of modern educational technologies that can be employed to overcome some difficulties that may hinder the implementation of traditional (paper) tests. It is an easy means to evaluate the student electronically; the teacher can prepare it easily for application to students and it is corrected electronically and instantly, ensuring credibility and transparency in grading.

B- Definition of teachers' training:

It refers to the content and duration allocated for training professors in the field of designing and preparing electronic tests.

Study terms:

1- The concept of educational evaluation:

Definition of educational evaluation:

It is the process of judging the extent to which the objectives of any educational system or institution have been achieved. It is also a systematic process based on practical foundations aimed at issuing an accurate and objective judgment on inputs, processes, and outputs of any educational system, identifying areas of strength and deficiency in each, and taking necessary decisions and measures to correct and reform identified shortcomings.

Gronlund (1976) defines it "as a systematic process that judges the extent to which educational objectives have been achieved by pupils and includes quantitative and qualitative descriptions, in addition to issuing a judgment of value." (Mustafa Nimer Dams, 2008, p. 10).

Mustafa Nimer Dams states that "it is a means to know the extent to which intended objectives have been achieved in the educational process and helps in identifying areas of weakness and strength by diagnosing obstacles that prevent reaching the objectives and providing proposals to correct the course of the educational process and achieve its desired goals" (Mustafa Nimer Dams, 2008, p. 12).

2- Concept of the electronic test:

Harb (2018) mentions that Shaib defined electronic tests as objective tests produced electronically and prepared by faculty members through computer software that helps create electronic question banks on computers or the internet, with the possibility of obtaining answers and calculating results instantly and automatically, with the aim of assessing learning outcomes. Al-Aref and Ghanem defined it as a set of questions designed by the teacher electronically using a computer to measure and evaluate students' performance level in a subject or a course. After being applied to students, they are corrected and recorded automatically, ensuring credibility and transparency in grading with savings in time, effort, and money. Al-Damgh and Al-Hajri (2019) also defined them as tests conducted and published

electronically via the World Wide Web (Internet), where test takers attempt to answer the questions at the same time through the web. Electronic tests are conducted via the web or the Internet using a computer system, or via an intranet (internal network). (Harb Al-Harb, 2018, p. 38).

3- Features of electronic tests:

Al-Damgh and Al-Hajri (2019) mention that electronic tests provide many design alternatives to the test designer, such as multiple-choice questions, true/false, and other types, with the possibility of inserting images, texts, audio clips, and video, as well as providing colors and animated images. Technology has also offered test production programs to present questions and answer them so that one test can be delivered in more than one form (equivalent or non-equivalent), which prevents cheating among students. (Khaled bin Abdulaziz Al-Damgh, Hind bint Mohammed Al-Habri, 2019, p. 890)

Ismail Al-Gharib (2009) indicated that tests have many features, including:

- Ease of preparation, application, and reviewing results.
- Variety in objective questions.
- Ability to attach audio files, video clips, or images with each question.
- Ability to set a countdown time for the test.
- Objectivity so that scoring is not affected by the rater's subjectivity.
- Flexibility by applying them before, during, or after instruction.
- Speed and accuracy in recording and saving student-specific information and their result at the end of the test.
- Ability to monitor the student from the teacher's device during the test.
- Providing feedback.
- Economical as they save effort, time, and money. (Ismail Al-Gharib, 2009, p. 85).

B. Practical framework of the study:

3- Study method:

The current study relied on the descriptive method, which is the most commonly used in psychological, social, and educational studies. It was found appropriate to use this method that depends on studying the phenomenon as it exists in reality to reach accurate results and be able to interpret them.

4- Population:

Original population of the study:

The study population represents the professors of Bejaia University – Faculty of Human and Social Sciences, numbering 100 professors.

Sample size:

The study sample is the same as the original population, where the sample size reached 100 professors teaching at Bejaia University – Faculty of Human and Social Sciences.

Sampling method:

The sample was chosen purposively. This method is considered among non-probabilistic sampling; it means selecting a sample from the research population by selecting elements prepared according to their proportions in this population. One of the main characteristics of the study is that they are university professors.

Characteristics of the sample:

The sample has several characteristics, including:

Gender:

Table No. (01): Represents the gender of professors teaching second-generation curricula.

Gender	Frequencies	Percentage %
Males	30	41.67%
Females	70	%58,33
Total	100	100%

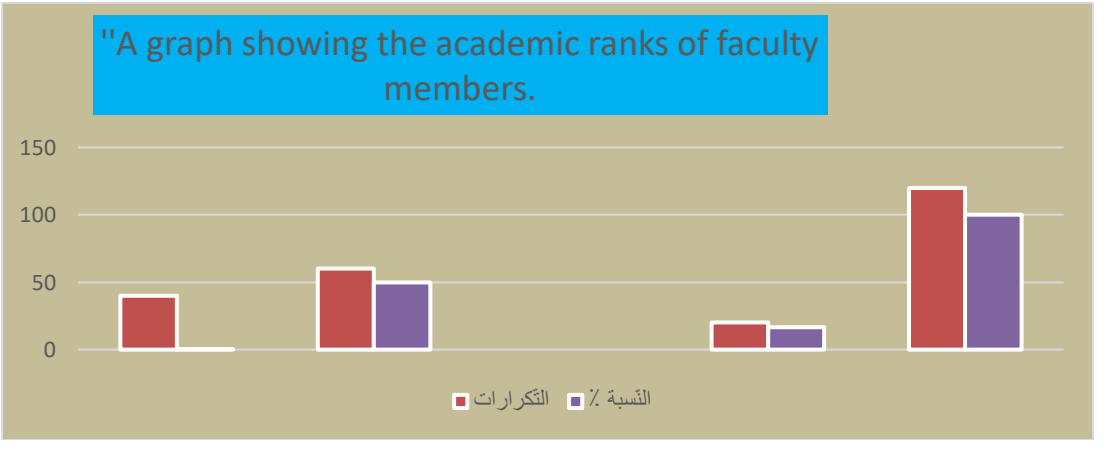
"From the table we conclude that most professors are female at a rate of 58.33%, and the remainder are male at 41.66%."

Academic qualification:

Table No. (02): Represents the ranks of university professors.

Ranks	Frequencies	Percentage %
PhD candidates	40	%40
Lecturers	50	%50
Senior lecturers/ Professors	10	%10
Total	100	%100

From the table we deduce that most university professors are lecturers at a rate of 50%, followed by PhD candidates at 40%, and finally higher education professors (professorial rank) at 10%.



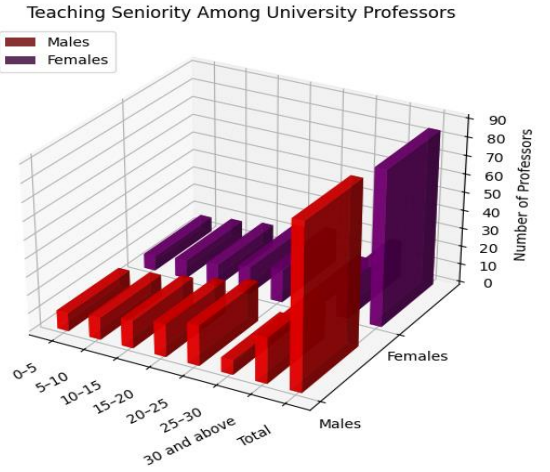
Seniority:

Table No. (03): Represents teaching seniority for university professors

Seniority	Frequencies	Percentage %
0 to 5 years	10	10
5 to 10 years	12	12
10 to 15 years	15	15
15 to 20 years	20	20
20 to 25 years	25	25

25 to 30 years	8	8
30 years and above	10	10
Total	100	100

From the table we conclude that university professors with experience between 20 and 25 years rank first in percentage at 25%, followed by professors with experience between 15 and 20 years at 20%, with differences across other experience ranges.



5- Study instruments:

A tool was used to collect information, namely a questionnaire that measures the reality of designing and applying electronic tests in the university environment, which was constructed after reviewing the theoretical literature in this field.

The questionnaire consists of (12) questions distributed over (03) axes:

- First axis: Personal data, consisting of (03) questions.
- Second axis: Difficulties that professors suffer in designing electronic tests related to them (their training, academic qualifications, professional experiences), consisting of (05) questions.
- Third axis: Difficulties that university professors face related to evaluative practice (difficulties in designing electronic evaluation grids in the field), consisting of (04) questions.

The questionnaire's validity was confirmed through expert validators.

6- Presentation of results:

1.6 Presentation of results for the general hypothesis:

The hypothesis states: "University teaching professors suffer from deficiencies in designing electronic tests according to (their training, academic qualifications, professional experiences, and field of research)." This hypothesis is treated through the following questions:

Question One: Have you received training in formulating electronic tests? Yes / No

Percentage %	Frequencies	Question One: Have you received training in formulating electronic tests?
%4.17	5	Beneficiaries of training
%95,83	05	Non-beneficiaries of training

Percentage %	Frequencies	Question One: Have you received training in formulating electronic tests?
%100	100	Total

From Table No. (04) we conclude that most university professors did not benefit from training in designing electronic tests, their proportion estimated at 95.83%. Whereas 4.16% are newly appointed professors and therefore benefited from the training.

Question Two: Is the period allocated for training university professors in designing electronic tests sufficient / insufficient?

Percentage %	Frequencies	Question Two: Is the period allocated for training university professors in designing electronic tests?
%5,83	5	Sufficient
%94,17	95	Insufficient
%100	120	Total

It appears from Table No. (05) that the duration allocated for training in designing electronic tests is insufficient according to 94.16% of the sample, while 5.83% stated that the allocated time is sufficient.
Question Three: Does your academic qualification allow you to design electronic tests? Yes / No

Table No. (06): Represents the suitability of academic qualifications of university professors for designing electronic tests.

Percentage %	Frequencies	Question Three: Does your academic qualification allow you to design electronic tests?
%25	30	Yes
%75	70	No
%100	120	Total

From Table No. (06) we deduce that most of the study sample, i.e., 75%, find that their academic training is not suitable for designing electronic tests, while 25% find their academic training suitable.
Question Four: Do you need the period allocated for training university professors in designing electronic tests? Yes / No

Table No. (07): Represents the extent to which professors need training in designing electronic tests.

Percentage %	Frequencies	Question Four: Do you need the period allocated for training university professors in designing electronic tests?
%97,5	97	Yes
%2,5	03	NO
%100	100	Total

The results of Table No. (07) indicate that 97.5% of the sample stated that they are in urgent need of continuous training in the field of designing electronic tests.
Question Five: In your opinion, does professional experience play a role in acquiring design strategies for electronic tests? Yes / No / Sometimes

Table (08): Represents the role of professional experience in acquiring evaluation strategies with the competency-based approach in light of second-generation curricula.

Percentage %	Frequencies	Frequencies Question Five: In your opinion, does professional experience play a role in acquiring strategies for designing electronic tests?
%95	95	Yes
%2	2	No
%3	3	Sometimes
%100	100	Total

Table No. (08) indicates that 95% of the sample stated that professional experience plays a role in acquiring strategies for designing electronic tests; 2% stated that professional experience does not play a role, while 3% stated that sometimes professional experience plays an important role.

Discussion of hypothesis results:

Discussion of the general hypothesis results:
By examining the results of the general hypothesis, we conclude that most professors lack experience in using electronic tests, which is due to the absence of training in this field. Moreover, during the pandemic the importance of using these tools to evaluate student performance, especially during distance education, became evident. Bejaia University (Faculty of Human and Social Sciences) initiated training courses for professors on how to design electronic tests and implement them on electronic platforms for distance education. In addition, there are difficulties related to evaluative practice in the field: difficulties related to applying evaluation grids in the context of programmed electronic educational approaches, difficulties related to assessing cognitive and performance domains of students, and difficulties related to: determining mechanisms and periods of evaluation – constructing evaluation tasks – measuring learning outcomes.

8- Conclusion:

Through this study in its theoretical and practical parts, we attempted to provide even a simple explanation about the reality of designing electronic tests in Algerian universities, the University of Bejaia as a model. Considering that the evaluative practice tools are not well regulated due to several obstacles and difficulties in judging the extent to which the objectives of any university system or institution have been achieved, Algeria has worked on improving the quality of evaluative practice to advance the university sector and achieve quality and governance in this sensitive sector.

The results of this study remain relative and limited, as they cannot be generalized due to the non-representativeness of the sample individuals. Thus, the current study concluded a set of results that matched the proposed hypotheses and were verified at the level of the studied sample. However, results remain contingent upon this sample and its characteristics.
In light of the findings, we propose the following:

- The necessity to train all professors in dosimology (test design and measurement).
- Prepare the annual pedagogical evaluation plan that will accompany the annual evaluation schedule.
- Rely on grids with criteria and indicators for

Approved References:

1. **Ismail Al-Gharib** (2009). *Electronic Courses*. Alam Al-Kutub, Cairo, Egypt.
2. **Hamdi Shaker Mahmoud** (2009). *Educational Assessment for Male and Female Teachers*. Dar Al-Nashrwa Al-Tawzi', Riyadh, SaudiArabia.
3. **Harb Al-Jarab** (2018). *Quality of E-Learning: A Contemporary Vision*. New UniversityPress, Alexandria, Egypt.
4. **Khaled bin Abdulaziz Al-Damigh& Hind bint Mohammed Al-Habray** (2019). *Designing Electronic Tests for Primary Education Teachers*. *Journal of Islamic and Arabic Studies for Girls*, Alexandria, Vol. 2, Issue (35), pp. 825–1005.
5. **Mustafa NamradAmas** (2008). *Modern Educational Assessment Strategies and Tools*. Dar Ghidaa for Publishing and Distribution, Amman, Jordan.
6. **Mohamed Boualaq** (2004). *An Introduction to the Competency-Based Approach in Education*. Qasr Al-Kitab, Blida, Algeria.
7. **Salah Ahmed Murad & Amin Ali Suleiman** (2005). *Tests and Measurements in Psychological and Educational Sciences*. Dar Al-Kutub Al-Haditha, Egypt.