



Higher education professors' attitudes toward using interactive digital curricula

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Abstract: The study, titled "Teachers' Attitudes in Higher Education Toward the Use of Interactive Digital Curricula," is a field study conducted at the University of Constantine 2 (Abdelhamid Mehri). The aim of the study was to determine which pole these attitudes tend toward. The study also sought to identify whether there were statistically significant differences in their attitudes attributable to the study variables (professional experience and gender). In which the researcher posed the following main question:

What are the attitudes of higher education professors towards the use and implementation of interactive digital curricula? To answer this question, the researcher adopted a descriptive-analytical approach, considering it the most appropriate for such a study. The researcher then designed a questionnaire consisting of 37 items, each with three response options: "Agree," "Don't Know," and "Disagree." The questionnaire was distributed to 60 higher education faculty members from the Faculty of Psychology and Educational Sciences and the Faculty of Humanities and Social Sciences at the University of Constantine-2 (Abdelhamid Mahri). After collecting the questionnaires, the data were entered and analyzed using SPSS Version 22, calculating frequencies, percentages, the arithmetic mean, standard deviation, and conducting an analysis of variance (ANOVA) as well as a t-test. The following results were obtained:

*Higher education faculty professors' attitudes toward the use and implementation of interactive digital curricula were generally positive, with an arithmetic mean of 85.77 compared to the theoretical mean of 74.

*There were no statistically significant differences attributable to the variable of professional experience in higher education faculty professors' attitudes toward the use and implementation of interactive digital curricula.

*There were statistically significant differences attributable to the gender variable in higher education professors' attitudes toward the use and implementation of interactive digital curricula, favoring females, as the arithmetic mean for females was 87.38, which is higher than the arithmetic mean for males, estimated at 83.17.

Keywords: Higher Education Professors; Attitudes; Interactive Digital Curricula; Higher Education; Digital Curricula.

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Introduction

The Problem

At the close of the 20th century and the advent of the 21st, the world witnessed a rapid information and technological revolution that gave rise to a new paradigm of knowledge. This paradigm has come to dominate various human activities. Educational systems have also been impacted by this transformation; contemporary technology, modern communication channels, and the Internet have become vital tools for regulating and developing educational processes, transcending the boundaries of time and space, and enabling the rapid exchange of knowledge and access to scientific research sources.

In response to these changes, educational institutions at all levels worldwide have revised their policies and strategies, with the aim of finding educational alternatives that ensure equal opportunities and make the learning experience more realistic and engaging. In this context, the Algerian educational system has sought to gradually integrate educational technology into its national reform plans since July 2002, with the aim of actively engaging in the knowledge society and the scientific and technological civilisation amid the challenges of globalisation.

In light of the rapid technological advancements of recent years, there has been a shift in the academic focus from merely providing technological infrastructure or adopting distance learning to developing educational content itself. Interactive digital curricula have emerged as one of the most pivotal innovations in contemporary educational design. These curricula are defined as an integrated system of digitally designed courses and educational activities that rely on interactive technological tools (such as multimedia, smart platforms, and collaborative learning environments) to provide a flexible learning environment that encourages self-directed learning and enables dynamic, continuous interaction between the learner and the course material, as well as between the learner and the instructor, without being constrained by the boundaries of a traditional classroom.

Despite the global trend towards the adoption of interactive digital curricula as a fundamental pillar for the development of higher education and human capital, there is a gap and relative lag in the implementation of these mechanisms at Algerian universities. Some researchers have highlighted the following as key issues: the novelty of the experience; a lack of awareness regarding the benefits of these digital innovations; or the technical and organisational difficulties facing the implementation environment (see Bakhti, 2005).

The success of the transition to interactive digital curricula and the overcoming of obstacles to their implementation in the university environment is closely linked to the attitude of the key actor in the educational process: the "higher education professor". Their cognitive and behavioural attitudes toward these curricula are a key determinant of the quality of their implementation and the modernisation of pedagogical performance in line with the ongoing technological boom.

In light of the above, the primary issue of the present study is to ascertain professors' attitudes and responses towards this pedagogical shift. From this, the following central research question can be formulated : What is the level of higher education faculty members' attitudes toward the use and implementation of interactive digital curricula? This research question encompasses the following sub-questions:

- Are there statistically significant differences in higher education professors' attitudes toward the use and implementation of interactive digital curricula attributable to the gender variable?
- Are there statistically significant differences in higher professors' attitudes toward the use and implementation of interactive digital curricula attributable to the variable of professional experience?

Hypotheses:

General Hypothesis:

The attitudes of higher education professors toward the use and implementation of interactive digital curricula lean toward the positive end of the spectrum.

Procedural Hypotheses:

There are statistically significant differences in higher education professors' attitudes toward the use and implementation of interactive digital curricula attributable to the gender variable.

There are statistically significant differences in higher education professors' attitudes toward the use and implementation of interactive digital curricula attributable to the variable of professional experience.

Objectives of the Study:

This study of higher education professors' attitudes toward the use and implementation of interactive digital curricula aims to:

- Identify this type of education and the extent of its use at Algerian universities, particularly the University of Constantine 02
- To identify university professors' attitudes toward interactive digital curricula.
- To determine whether there are differences in university professors' attitudes toward the use and implementation of interactive digital curricula attributable to the variables of gender and professional experience
- To highlight the role of interactive digital curricula in the success or failure of teaching certain subjects.

Significance of the Study

The importance of this study lies in clarifying the background of e-learning in higher education. E-learning and interactive digital curricula are among the most significant topics emerging in the educational arena, gaining importance because they come at a time when many academic institutions—particularly universities—are increasingly focusing on the use of information and communications technologies in the educational process. This study aims to shed light on e-learning as a modern technology in the educational process and to identify some of the problems that hinder the effective use of this strategy in higher education in general and at the University of Constantine 02 in particular, given that it has recently adopted this technology. This study can be useful when combined with in evaluating the experience of the Algerian university, the University of Constantine 02 (Abdelhamid Mahri), as a model, to identify weaknesses and analyze them as a starting point for the effective design of e-learning courses.

Definition of Terms:

Orientation: Defined as an individual's tendency to respond toward or against a subject, person, idea, etc. In other words, orientation is the tendency to respond positively or negatively to a set of stimuli.

That is, a person directs their behavior in response to a stimulus and expresses this through a positive or negative reaction to that **stimulus (Abdullah, 2003, pp. 61–62).**

It is an acquired psychological, cognitive, and emotional response that an individual exhibits toward a particular subject or issue as a result of a specific experience, which is reflected in the score respondents obtain on the study instrument (the questionnaire). This response is characterized by either acceptance, rejection, or neutrality. and in our study, "attitude" refers to the stance that a university professor takes toward e-learning, whether positive or negative.

Higher Education: According to contemporary educational literature, higher education refers to education at universities and higher education institutions, as well as technical and vocational institutes that follow the secondary education stage —that is, any education that takes place after the secondary level is called higher education. **(Shabel, 2007, pp. 231–232)**

E-learning : is the use of electronic information sources, tools for searching for such information, electronic communication tools, and all the resources available on the Internet that teachers can employ and learners can use to develop their knowledge base. **(Al-Jamal, 2005, p. 13)**

It is a method of instruction or an educational system that allows information to be delivered via modern communication tools—such as computers, computer networks, applications, and multimedia—to convey information to students in the shortest time, with the least effort, and most effectively.

Research Methodology:

The methodology adopted in this research is the descriptive approach, as it is well-suited to the subject of our study; it provides a highly accurate description of the phenomenon under study for the purpose of analysis.

Data Collection Tools:

Data collection methods and tools vary depending on the subject being studied. To conduct this research, a questionnaire was designed with three response options: “Agree,” “Don’t Know,” and “Disagree.” It included 37 statements, with the response options and their weights determined based on the Likert scale method for designing psychosocial measures. The three response options—“Agree,” “Don’t Know,” and “Disagree”—were assigned the following weights: 3, 2, 1, in that order.

Psychometric Properties of the Instrument:

The concept of psychological testing is based on measuring samples of human behavior; through this measurement, we can then deduce the main characteristics of that behavior. The validity of the measurement depends on the consistency and reliability of its results. (Al-Bahi 2006, p. 378)

– Rater reliability:

The study questionnaire was presented to two different professors at the Faculty of Psychology and Educational Sciences at the University of Constantine, 02: Abdelhamid Mahri, to ensure the credibility of the questionnaire’s statements. Their opinions and observations were taken into account, and this review resulted in a series of changes, including the rephrasing of some statements and the deletion of others to better suit the study’s subject matter.

-Reliability of the Instrument:

The reliability of the instrument was verified using Cronbach’s alpha.

Table 1 shows the reliability coefficient of the questionnaire

The questionnaire as a whole	Total reliability coefficient
37 items	0.87

As shown in Table 1, the overall reliability coefficient of the questionnaire was 0.87, which is a high value. This allows us to conclude that the scale has a high degree of reliability, justifying its use in achieving the study’s objectives

Study Sample:

The research sample was selected using a random sampling method and consisted of a total of 60 professors, meaning that the sample is representative of the original population at a rate of approximately 21.81%.

The study population was estimated at 267 professors. A total of 90 questionnaires were distributed, of which 69 were returned; 9 were discarded due to errors in the responses, such as a professor providing two different answers for the same item or leaving items unanswered.

Description of the Research Sample:

Distribution of the sample according to the professional experience variable

Table showing the distribution of the study sample according to the professional experience variable

Years	Frequency	Percentage
0 to 5 years	13	21.7%
6 to 10 years	18	30%
11 to 15 years	16	26.7%
Over 15	13	21.7%

Sample distribution by gender:

Table showing the distribution of the study sample by gender

Gender	Frequency	Percentage
Male	23	38.3%
Female	37	61.7%

Statistical Methods:

To process, analyze, and interpret the data in light of the hypotheses, we used the statistical software SPSS, also known as the Statistical Package for the Sciences (SPSS). SPSS is considered one of the best off-the-shelf statistical software packages for data presentation and analysis.

This software was used to calculate:

- **Frequencies and percentages**
- **Arithmetic mean**
- **Standard deviation**
- **Cronbach's alpha**

Discussion and interpretation of the results in light of the hypotheses:

To test the first hypothesis, which states: There are statistically significant differences attributable to the variable of professional experience in higher education faculty members' attitudes toward the use and implementation of interactive digital curricula.

To identify the differences in their attitudes toward e-learning, the researcher calculated the arithmetic means and standard deviations and conducted a one-way ANOVA, resulting in the following table:

Table 44 presents the one-way ANOVA analysis of the questionnaire domains according to the professional experience variable.

	Sum of Squares	Degrees of Freedom	Mean Square	F	Significance Level (SIG)
Within groups	44.4	34	1.306	1.446	0.171
Outside the groups	22.58	25	0.03		
Total	66.38	59			

From the results in the table, we observe that the significance level (SIG) for the questionnaire as a whole is greater than 0.05 and is estimated at 0.171. This indicates that the results are not statistically significant. In other words, there are no statistically significant differences in the attitudes of higher education professors toward the use and application of interactive digital curricula. It appears that there is no difference in the nature of these attitudes, whether among professors with less than five years of professional experience, those with six to 10 years, those with 11 to 15 years, or even those with more than 15 years of professional experience. Therefore, the initial procedural hypothesis – which suggests the existence of statistically significant differences in the attitudes of higher education professors –

These results can be interpreted to mean that e-learning is a relatively new phenomenon at Algerian universities in general and at the University of Constantine 02 in particular.

In other words, professors are generally aware of the importance of e-learning and the use and implementation of interactive digital curricula, but they are concerned about the conceptual framework and terminology, as well as its applications and assessment methods within this e-learning context.

Consequently, there is no actual implementation of this type of education in either synchronous or asynchronous formats.

Their understanding of e-learning is limited to school-based assessments via e-learning platforms and the use of educational technology in teaching, such as data projectors.

These results confirm the findings of some studies, such as the study by Fayza Al-Rubaie (2010–2011), which showed that there are no statistically significant differences attributable to the variable of professional experience.

Teachers seek to adopt the concept regardless of their years of professional experience; however, their goal is the same: to achieve the educational objectives assigned to them.

Hypothesis 2: There are statistically significant differences in higher education professors' attitudes toward the use and application of interactive digital curricula, attributable to the gender variable.

To test these hypotheses, the researcher conducted a t-test to compare the differences and obtained the following table

Table No.(45) presents the t-test results comparing female and male professors.

Attitudes of Higher Education professors Toward the Use and Application of Interactive Digital Curricula	Gender	Frequency	Arithmetic Mean	Standard Deviation	Degrees of freedom	T	Significance Level SIG
	Male	23	83.17	8.49	58	1.31	01.0
	Females	37	87.38	13.83			

We observe from Table No.45 and by examining the arithmetic means for gender in their attitudes toward the use and application of interactive digital curricula that the arithmetic mean for males was 83.17 and for females 87.38, it can be said that there are gender differences in their attitudes toward e-learning, which is confirmed by the T-test value of 1.31—a significant value at the $\alpha = 0.01$ significance level.

Consequently, it can be concluded that there are statistically significant differences in the attitudes of higher education faculty members attributable to the gender variable, favoring females, as evidenced by the comparison of the two means: $87.38 > 83.17$, which indicates that the differences favor females.

This result can be explained by differences between male and female professors in their attitudes toward the use and application of interactive digital curricula. The researchers believe that this result stems from current changes in society, the responsibilities and roles women assume in society, and the accelerating pace of societal development and the demands placed on women—all of which create a motivation to enter the world of progress, compete with men, and strive to achieve equality between the sexes. This drives them to seek advancement and excellence in their professional fields, particularly to stand on equal footing with men in various disciplines. While the field of modern technology was previously limited to men, this progress has demonstrated the opposite: we find that women are more consistent in their use of the Internet, driven personal growth and self-improvement, as well as a desire to satisfy their curiosity and discover the unknown.

When we consider the nature of women, we find that their love of excellence, progress, and always presenting themselves in a positive light leads them to exert great effort to showcase themselves and their ability to enter the world of technology and communication and to take on responsibilities within this field.

Thus, the partial hypothesis has been confirmed.

A study by Maha Abdulaziz Al-Abdulkarim (2009) concluded that e-learning has positive effects, as it enhances the female teacher's ability to convey information to her students.

However, the study by Faiza Al-Rubaie (2010–2011) agreed with the present researcher's study in confirming the hypothesis, namely that there are statistically significant differences attributable to the gender variable; however, the difference between the two studies lies in the fact that in the former, the differences favored males, whereas the present researcher's study concluded that the differences favored females.

Discussion and Interpretation of the General Hypothesis

Table showing the arithmetic mean and standard deviation for the questionnaire as a whole

Discussion and Interpretation of the General Hypothesis

Table showing the arithmetic mean and standard deviation for the questionnaire as a whole

	Total
Number	60
Arithmetic Mean	85.77
Standard Deviation	12.160
Minimum	55
Maximum	110

Before interpreting the results in the table, which shows the arithmetic mean and standard deviation for the questionnaire as a whole, the relative weight of this questionnaire must be clarified.

Below are the questionnaire weights, where the value 37 represents the lowest value in the case of a negative trend.

$37 \times 1 = 37$ for the negative direction

where 37 represents the number of items in the questionnaire

and 111 represents the highest score on the questionnaire in the case of a positive trend

$111 = 3 \times 37$ for the positive direction, where 37 represents the number of items in the questionnaire

The theoretical mean of the questionnaire is calculated as follows: $2/111 + 37 = 74$, which is the theoretical mean.

After obtaining the results shown in the table, which indicate the arithmetic mean and standard deviation of the sample participants' responses to each questionnaire item, and to determine the general trend among teachers toward the use and implementation of interactive digital curricula, the estimated theoretical mean was calculated as 74.

Based on the above, we observe that the arithmetic mean for the questionnaire as a whole is 85.77 with a standard deviation of 12.16. When compared to the theoretical mean of 74, we note that higher education professors' attitudes toward the use and implementation of interactive digital curricula were in the positive range.

In general, we conclude that higher education faculty members' attitudes toward the use and implementation of interactive digital curricula lean toward the positive. This study confirms the findings of numerous other studies, such as that by Fayza Al-Rubaie (2010–2011), whose results highlighted the positive attitude of higher education faculty toward e-learning, as well as the study by Abdulaziz Abdulkarim (2006) which concluded that e-learning is beneficial, as it enhances the instructor's ability to convey information to students, reduces their need to carry textbooks and instructional materials between classes, and accommodates individual differences, as demonstrated by the study by Mahdizadeh and colleagues (2004) noted that faculty members view the use of e-learning negatively. The results showed that faculty members recognize the benefits of e-learning but fear its impact on student attendance at lectures and the lack of feedback from students. In addition to these shortcomings, Halima Al-Zahi (2011–2012) notes that the lack of training for university professors on e-learning is the main reason for their reluctance to use this type of instruction, in addition to a lack of support from senior administration for the transition to this model.

We conclude that the attitudes of higher education professors toward the use and implementation of interactive digital curricula tend to be positive; thus, the general hypothesis has been relatively confirmed. However, since the use and implementation of interactive digital curricula at Abdelhamid Mehri University in Constantine 02 is still in its early stages, faculty members have not yet fully mastered this technology—neither in terms of defining the concepts and terminology related to this type of education nor in terms of actual use, as they view e-learning as limited to traditional classroom methods via e-learning platforms or the use of computers and projectors in teaching.

In light of the findings of this study, we propose the following:

Hold lectures, seminars, and workshops to discuss the current state of e-learning and digital curricula in higher education.

Develop training programs for both faculty and students to help them use and benefit from these technologies.

Raise awareness among the university's senior administration of the need to pay greater attention to e-learning and its development, as it is primarily responsible for providing the various resources and necessities required to advance it.

It is advisable to reexamine, develop, and improve higher education by transitioning from traditional education to e-learning and digital curricula—particularly interactive ones—to keep pace with scientific developments and the demands of technological progress.

Encourage university professors to use e-learning and ensure that the necessary resources are available at various university institutions.

Efforts should be made to protect professors' intellectual property rights when they deliver lectures via e-learning.

References

- [1] Ahmed Ali Hussein Al-Jamal, *Challenges of Integrating E-Learning into Egyptian Schools, Studies and Research in Educational Technology*, Arab Society for Educational Technology, Egypt, 2005
- [2] Magdi Ahmed Abdullah, *Social Behavior and Its Dynamics: An Interpretive Approach*, Dar al-Ma'rifah al-Jami'iyyah Publishing House, Cairo, 2003.
- [3] Badran Shebl and Suleiman Saeed, *Education in the Knowledge Society*, Dar al-Ma'rifah al-Jami'iyyah, Alexandria, 2007

- [4] Maha Abdulaziz Abdulkarim, "An Evaluative Study of the E-Learning Experience at Al-Bayan Model Schools for Girls in Jeddah," unpublished master's thesis, College of Education, Department of Educational Media and Technology, King Saud University, Saudi Arabia, 2006
- [5] Said bin Ahmad Al-Rubaie, Higher Education in the Knowledge Age: Changes, Challenges, and Future Prospects, Dar Al-Shorouk, Amman, 2007
- [6] Abdullah bin Abdulaziz Al-Mousa, E-Learning: Foundations and Requirements, Data Network, Riyadh, 2005
- [7] Al-Mallah Muhammad Abdel karim, The E-School and the Role of the Internet in Education: An Educational Perspective, Dar al-Thaqafa, Amman, 2010