

The Reality of E-Learning in Light of the Technology Acceptance Model in Algerian Universities

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Received: 04/09/2024

Accepted: 05/10/2024

Published: 19/11/2024

Abstract:

This research aimed to address the topic of e-learning based on the Technology Acceptance Model within the university environment and the extent to which university members accept the use of information and communication technologies in the educational process. The study also highlighted the importance of electronic applications in this context, which is a result of the widespread use of smartphones. We have concluded that it is necessary to transition from traditional education to e-learning in line with the ongoing developments. Additionally, we found that it is essential to accept and promote technology within the university environment through the adoption of electronic applications.

Keywords: E-learning, Technology Acceptance Model, Electronic Applications.

JEL Classification: A20 ,A29.

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Introduction:

Since the advent of the computer in 1948, the world has witnessed significant advancements in the field of information and communication technology. Engaging with the latest technological developments has become a priority for individuals and institutions alike, as they strive for societal progress and growth. E-learning has emerged as one of the modern approaches that has gained substantial attention in recent times. This is largely because e-learning transcends the constraints of time and space, offering new opportunities for learners without the need for physical presence, which has historically been a significant barrier and which limited access to education. However, there remains a certain level of apprehension about accepting this technology among certain segments of the population.

Based on this, we can pose the following question:

What is the current state of e-learning in the context of the Technology Acceptance Model at Algerian universities?

Sub-questions:

- What is the concept of e-learning?
- What is required to achieve effective e-learning?
- Has e-learning in Algeria reached an advanced, successful, and effective stage?
- What is meant by the Technology Acceptance Model?
- What role do modern electronic applications play in contributing to the quality of higher education?

Study Hypotheses:

- E-learning is a hallmark of advanced universities.
- E-learning contributes to the quality of the educational process.
- Algeria has recently made efforts to provide useful and successful electronic platforms.
- The ideas behind the Technology Acceptance Model are among the reasons for the delay in e-learning adoption.
- Electronic applications contribute to improving higher education due to the widespread reliance on smartphones.

Importance of the Topic:

The significance of the study's topic is highlighted in the following points:

- Emphasizing the importance of e-learning as a mechanism for improving the quality of higher education.
- Identifying the obstacles to e-learning and addressing them through the Technology Acceptance Model.
- Exploring the role of electronic applications in higher education.

Objectives of the Topic:

The objectives of the study are as follows:

- To establish the inevitability of e-learning.
- To highlight the need for a blend of e-learning and traditional education for the benefit of all.
- To provide an overview of the state of e-learning in Algeria.

I. E-Learning

The use and implementation of e-learning have become crucial for achieving educational quality in the future. E-learning relies on modern technology and communication tools, aiming to utilize as much information and data as possible.

1. Definition of E-Learning:

E-learning is an innovative method for providing an interactive, learner-centered environment that is well-designed, accessible to anyone, anywhere, and at any time. It leverages the features and resources of the internet and digital technologies, aligned with appropriate instructional design principles for an open, flexible, and distributed learning environment.⁽¹⁾

It also involves the use of information and communication technologies in various educational processes to support and enhance learning within higher education institutions. This includes utilizing information and communication technologies as a complementary element to traditional classroom settings. (2)

2. Effectiveness of E-Learning:

In the present era, technology has become one of the top priorities for many institutions due to its numerous advantages and features that help save time and reduce distances. Higher education institutions are among those that have adopted information and communication technology in various services, both educational and administrative, to continually achieve optimal results. Some of the key benefits include: (3)

- **Achieving Quality Outcomes:** By utilizing technology to deliver information rapidly to all students through electronic platforms at each university.
- **Innovative Learning:** E-learning enables innovative approaches to learning by employing modern communication tools, which provide learners with opportunities to creatively address educational challenges, offer innovative solutions, and make suggestions.
- **Cost Reduction:** By saving on transportation, equipment, and physical infrastructure costs.
- **Facilitating the Creation of Virtual Universities:** Allowing for learning opportunities to reach a larger number of individuals.

3. Infrastructure for E-Learning:

E-learning requires a set of foundational elements that support the educational process, including:

- **Students:** The group that must meet certain criteria for receiving electronic information, such as readiness and capability.
- **Faculty Members:** Individuals who possess the ability to convey knowledge using information and communication technology.
- **Electronic Curriculum:** A collection of digital materials, including texts, graphics, and diagrams, used to deliver the educational content.
- **Examinations:** Questions administered electronically to assess students' responses to learning through various platforms. These assessments serve as feedback for the communication process.
- **Necessary Tools:** Devices, equipment, and all means of communication between the instructor and the learner.

4. E-Learning in Algeria

The higher education sector in Algeria has adopted several measures to facilitate various registration processes for new students without the need for physical travel. Online platforms have been established to provide results and course materials, aiming to bring the university closer to students. Notably, in 2018, a platform was launched for the registration of master's and doctoral students for admission exams. Recently, Algerian universities have introduced electronic registration for the promotion of academic staff, with a new initiative being the "zero paper" project for doctoral students doing graduation. This initiative aims to enhance digital operations and reduce routine paper-based tasks.

To establish e-learning, Algeria has implemented an e-learning and virtual university plan in three phases: (4)

- **Phase One:** This phase focuses on using technology, such as video lectures, to accommodate the increasing number of learners and improve the quality of education and training in the short term.

- **Phase Two:** This phase involves adopting modern pedagogical technologies, particularly WhatsApp, to ensure quality assurance in the medium term.
- **Phase Three:** The integration phase, which formalizes the distance learning system, or e-learning, and disseminates it through knowledge channels beyond the university scope.

I. The Unified Theory of Technology Acceptance

The development of technology acceptance theories and models began in the early 20th century and continues to evolve today. This development has occurred through various theoretical perspectives, including cognitive, emotional, motivational, and behavioural intentions, as well as individual responses as part of program quality activities in software engineering, information systems adoption, acceptance, and usage behaviour. Since the 1970s, these aspects have garnered attention as initial steps toward understanding the use and perception of technologies. Currently, understanding the reasons behind users' acceptance or rejection of new technologies has become a critical aspect of the lifecycle of any information system. As a result, technology acceptance theories and models have been developed to study how users comprehend and accept new technologies, how they can use them, and what the impact might be on continued usage.

1. Concept of the Technology Acceptance Model (TAM):

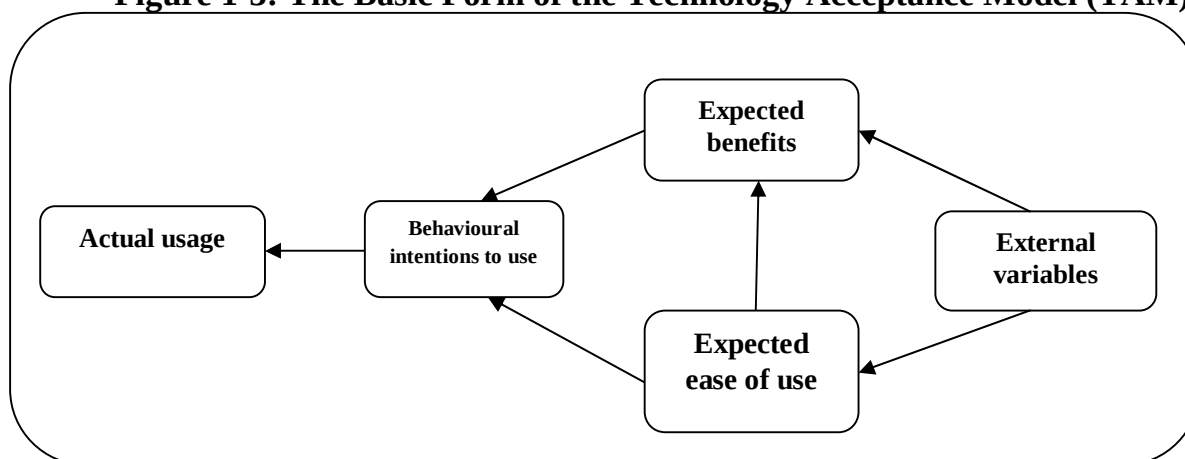
The idea behind the Technology Acceptance Model (TAM) originates from Davis (1989), who proposed the theoretical framework for the model. Davis identified factors influencing the acceptance or rejection of technology and integrated technological aspects with organizational Behaviour concepts. He also examined the causal relationship between user beliefs, attitudes, and actual technology usage behaviours. The Technology Acceptance Model aims to explain the acceptance of information systems as it is considered one of the most widely used models in studies concerned with user Behaviour. It provides insights into how individuals interpret and use information and communication technology in various aspects of their lives.

1.1. Definition of the Technology Acceptance Model (TAM):

The Technology Acceptance Model (TAM) extends from behavioural theories such as the Theory of Reasoned Action and the Theory of Planned Behaviour. It is a behavioural model focused on behavioural intentions, suggesting that individuals' Behaviour stems from their attitudes and beliefs. Developed by Davis, TAM primarily relies on two key elements: Perceived Usefulness and Perceived Ease of Use. These elements predict individuals' behavioural intentions, which in turn influence actual usage intentions.

According to TAM, when individuals believe that using technological programs will enhance their performance, this acts as a significant incentive for continued use of new programs. When combined with the ease of use, this leads to quicker adoption and integration of new systems, contributing to user satisfaction. Users are less likely to experience difficulties if they can efficiently access what they need. Conversely, the failure of new programs is often due to individuals rejecting them for various reasons, such as perceived lack of benefit, complexity, or concerns about data security.

TAM serves as a hypothesis for information systems, outlining a plan for how people will accept and learn to use technology. The actual usage of the model occurs in the final step, aiming to enable users to effectively utilize the technology. (5)

Figure 1-3: The Basic Form of the Technology Acceptance Model (TAM)

Source: "Davis et al., 1989"

1.2. Components of the Technology Acceptance Model (TAM): ⁽⁶⁾

- **External Variables:** These are external factors that influence and affect individuals' behavioural intentions to use technology.
- **Perceived Usefulness:** This refers to the extent to which an individual believes that using technology will enhance their performance.
- **Perceived Ease of Use:** This pertains to the extent to which an individual expects that using technology will be easy and straightforward.
- **Behavioral Intentions to Use:** These are derived from perceived usefulness and perceived ease of use, reflecting the user's intention to engage with the technology.
- **Actual Usage:** This represents the actual practice of using the technology.

I. Electronic Applications:

1. Definition of Electronic Applications:

Electronic applications are platforms that provide services to users in specific areas (reading, listening, video playback, browsing, sending emails, sharing content, etc.). They support communication between networks and users, making internet access easier and connecting internet technologies with smart technologies. They are also independent programs designed to run on portable devices such as smartphones or touch tablets.

Smartphone Applications: Smartphones have evolved significantly and rapidly, necessitating that organizations take advantage of them for public benefit by developing their own easy-to-use programs that are available at all times. It has been observed recently that the number of computer users has decreased, while the number of smartphone users has increased for various activities such as using email, online shopping, e-commerce, completing commercial transactions and bookings, and even handling various types of financial transactions.

2. Use of Electronic Applications in the Educational Process:

Electronic applications are considered a means of information and communication technology that has seen significant development recently due to advancements in smartphone technology. This point is a positive sign for their use in e-learning, as they have become available to everyone and are easy to use, which encourages students to follow lessons in real-time.

Key features include:

- o Smartphones have become accessible to a larger number of people, making it easier to use their applications.
- o Smartphone applications help in spreading technology (according to the diffusion of innovations theory).
- o They are characterized by ease of use due to individuals' familiarity with them, in contrast to using computers.

Conclusion:

Algerian universities face significant challenges, driving them to continuously seek outstanding performance to ensure educational quality that aligns with the advanced levels of global universities. This is achieved by improving educational inputs to obtain the best outputs. Therefore, Algerian universities have adopted e-learning alongside traditional face-to-face education.

Study Results:

Based on the analysis of various literature on the topic, the following results were reached:

- E-learning has become a necessity rather than an option.
- Algerian universities are continuously improving by adopting information and communication technology.
- The technology acceptance or rejection model plays an important role in the success of e-learning in Algeria.
- Psychological aspects, behavior, and traditions affect the adoption and dissemination of technology among students and professors (according to the technology acceptance model).
- The ease of use of technology affects its implementation from the professor's perspective, due to a constant fear of technology and a preference for traditional methods under the pretext of familiarity and ease (according to the technology acceptance model).
- Actual use of technology remains unclear to users, which hinders and obstructs the implementation of e-learning.
- Many are unaware of the benefits achieved through the use of technology in e-learning at Algerian universities (according to the technology acceptance model).

Recommendations:

Based on the research, the following recommendations can be made:

- Increase the use of electronic applications in electronic universities.
- Develop virtual universities and improve their quality.
- Encourage students to use technology through technology diffusion models.
- Reduce difficulties in using technology by simplifying the access and processing of various operations.

References:

1. Waleed Al-Halfawi, **Innovations in Educational Technology in the Information Age**, Amman, Dar Al-Fikr, 2006, p. 48.
2. Arkorful, v & Nelly, A. 2014, «**The role of e-learning, the advantages and disadvantages of its adoption in Higher Education**», International Journal of Education, Vol. 2 No. 12, p9397-410. 48.
3. Sharaman, H., **Contemporary Educational Technology and Curriculum Development**, 1st edition, Dar Wael for Publishing and Distribution, p. 111.
4. Fatima Misbah, "E-Learning in Algeria: Between Reality and Expectations," Tabna Journal of Scientific and Academic Studies, Vol. 5, No. 1, 2022, p. 1773.
5. Nelson R. R. & Todd P. A. (1992), «**Perceived use fulness, esse of use, and usage of information technology: A réplication**» MISQuarterly Vol16, No 2: 227–247, JSTOR.
6. Lekhder Akkouni, "The Role of Information and Communication Technology in Improving Service Quality", PhD Dissertation, University of Tissemsilt, 2023, p. 22.