E-LEARNING EXPERIENCE IN ALGERIA

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Abstract: *The term e-learning gained popularity in the 1960s. This type of education has since permeated various fields and educational circles. E-learning represents an effective solution to issues related to equal opportunities in education. It allows everyone to access education without exceptions, free from barriers such as age, nationality, time, and location. This development is largely due to the efforts of UNESCO and other organizations focused on advancing education. Additionally, advancements in "information and communication technology," which include computer technologies, multimedia, and the global information network, have significantly contributed to the rise of more efficient and higher-quality forms of e-learning. Algeria is one of the developing countries that has engaged in virtual education for several years. The country has established centers and institutions that enable learners to attend lessons remotely, outside traditional educational settings. These initiatives utilize modern technologies to stay current with global developments. However, despite these efforts, Algeria still faces numerous challenges. This research aims to clarify the key components of Algeria's experience in e-learning. It also identifies the main obstacles faced by this educational approach and proposes potential solutions.*

Keywords: e-learning, online education, communication systems, correspondence education, higher education

1. Introduction

Since the last century, the world has experienced significant scientific and technological advancements. This progress has prompted many countries to reevaluate their educational systems and identify their weaknesses. The shortcomings of traditional educational institutions became evident as they struggled to accommodate the growing number of students eager to continue their studies. Moreover, "the need for education has increased as a logical response to the challenges arising from the speed of scientific and technological change, and its expansion to include all areas of life" (Zaytoon, 2004: 277).

Faced with these challenges, traditional educational institutions recognized their inability to meet the educational needs of this large segment of society. This inability stemmed from insufficient resources, inadequate educational frameworks, and a lack of qualified technical and administrative staff. At the same time, the public became increasingly aware of the importance of education. As a result, "the industrially developed countries have taken a radical and comprehensive approach to their educational systems with the aim of comprehensive change in educational thought and educational practices. This review has led to the establishment of new educational systems that align with the nature of scientific and technological excellence" (Zaytoon, 2004: 280). These new systems aim to help as many students as possible fulfill their educational ambitions while overcoming obstacles in their educational journeys. They also provide a comfortable and flexible learning environment, with curricula that cater to students' interests and career goals, allowing them to leverage modern technologies and resources.

One of the most significant developments in this area is "virtual education," which has addressed many challenges faced by traditional education systems. This approach enables a broad range of individuals to pursue their education and achieve their goals by eliminating temporal, spatial, and geographical barriers. The close relationship between educational technology and communication technology has also played a vital role in advancing virtual education. Institutions worldwide now offer innovative learning opportunities with modern features, diverse options, and pathways for hundreds of thousands of people (Madani, 2007: 11-12). Many developed and even developing countries have embraced virtual education as an effective solution to meet the various challenges of contemporary life, particularly technological challenges.

Algeria, as a developing country, has adopted this educational system, facing challenges that are often more significant than those encountered by developed countries. The required changes to its educational system are more profound, considering the unique characteristics of the target population and the educational environment necessary for the success of this type of education.

2. Research Problem

This research aims to address the following questions:

• What is the current state and future outlook of virtual education in Algeria? How can we evaluate the Algerian experience in this field?

• What are the main challenges facing this type of education in Algeria?

• What solutions can be proposed to overcome these challenges?

Research Objectives:

• Understand the nature of virtual education compared to traditional education.

• Examine the initiatives undertaken by Algerian schools and universities to ensure the success of this educational model.

• Identify the challenges faced by the virtual education experience in Algeria.

• Propose potential solutions to address these challenges.

3. Significance of the Study

This study highlights the role of the virtual education system in expanding educational opportunities, promoting knowledge, and achieving educational equality. It also evaluates how Algerian educational institutions can learn from international experiences in this field. Additionally, it emphasizes the importance of investing in educational improvement while addressing the obstacles faced by these institutions and seeking solutions to overcome them.

4. Research Methodology and Approach

This study employs both analytical and descriptive methods to conduct a comprehensive analysis of the Algerian experience in virtual education.

The Concept of Distance Education:

Virtual education, often referred to as distance education, is a structured form of education where learning groups are separated, and interactive communication systems are used to connect learners, educational resources, and teachers (Shlosser & Simonson, 2015: 1). This definition includes four essential components:

First, this form of education relies on established institutions, distinguishing it from self-directed learning. These institutions may include traditional schools or colleges, as well as non-traditional organizations (such as commercial companies) that adopt virtual education to train their employees and enhance efficiency.

Second, the concept of distance encompasses not only physical separation between teachers and students but also temporal distance. This means that the teaching and learning processes do not occur simultaneously, with spatial and temporal distances being intentionally defined.

Third, communication systems refer to electronic media such as television, telephone, the Internet, and postal correspondence used in distance education.

Fourth, effective learning relies on the interaction between learners, resources, and teachers. These resources must undergo suitable educational design to facilitate understanding. They can be visual, tangible, or auditory (Shlosser & Simonson, 2015: 1–2).

Various terms are used interchangeably with virtual education or to emphasize specific aspects of it, including home study and independent study. Virtual education represents a learning situation where communication tools—such as publications, telephone and telex networks, television, and computer systems—play a crucial role in bridging the distance between teachers and learners. This enables opportunities for joint interaction (Zaytoon, 2004: 281).

5. Other definitions include

Holmberg's Definition: One of the simplest and most recognized definitions, Holmberg describes distance education as encompassing all study methods and educational stages without direct and continuous supervision by teachers present in traditional classrooms. However, the educational process is planned, organized, and guided by an educational institution and its instructors (Mahmoud, 2014: 13).

Moore's Definition: Moore defines virtual education as a teaching method where teaching behaviors are partially separated from learning behaviors. This occurs through communication between teachers and learners, facilitated by printed, electronic, audio, and visual educational materials that transfer information between both parties (Madani, 2007: 16).

Peters' Definition: Peters describes virtual education as a means of disseminating knowledge and acquiring skills through efficient organization of the components of virtual learning, utilizing multimedia technology to produce high-quality educational materials that support learners in gaining knowledge in their respective environments (Madani, 2007: 16).

UNESCO defines virtual education as an educational process where most or all teaching is conducted by an instructor who is physically distant from the learner. In this context, most communication occurs through a specific medium, which can be electronic or printed. The American Society for Distance Learning (USDL) further defines it as the process of acquiring knowledge and skills through a medium that facilitates the transfer of education and information. This includes various technologies and different forms of learning for virtual education (Mahmoud, 2014: 14).

Additionally, virtual education can be described as a modern educational method that depends on the learner being in a different location from the source of education, which may be the teacher, a book, or even a group of learners. Currently, virtual education leverages communication technologies and computer systems to facilitate the learning process (Le Ministère de l'Éducation nationale et de la Formation professionnelle, 2020: 4).

From these definitions, we can conclude that virtual education comprises several key elements:
• There are temporal and spatial boundaries separating the learner from the teacher.
• There is interaction between the teacher and the learner in a cohesive cognitive educational environment, as well as interaction among learners themselves.
• The process relies on various communication media and technologies (print, audio, visual, electronic) to convey information to the learner.
• It is supported by technical and administrative planning and organization of the educational process, following carefully designed courses.

6 Motives for Switching to Virtual Education

Many countries have shifted towards virtual education technology due to several compelling reasons. This transition has become essential, as global trends and organizations dedicated to scientific development emphasize its necessity. Key motives include:
• Unequal Educational Opportunities: A significant segment of society seeks training and educational attainment. However, many individuals face obstacles to enrolling in universities for various reasons, including age, health, social status, or professional conditions.
• High Costs of University Education: The financial burden of higher education in many countries has left a large group of students unable to pursue their educational goals.
• Imbalanced Distribution of Educational Institutions: The uneven geographical distribution of educational facilities makes it challenging for many individuals to enroll, effectively denying them their right to education.
• Increasing Demand for Education: The growing number of students wishing to study has led to a shortfall in traditional institutions, which often lack the necessary resources and equipment to accommodate them.
• Technological Advancements: The technological developments witnessed since the last century have generated a rapid influx of information. This has created a need for a new type of education that effectively utilizes modern technology.

7. Objectives of Virtual Education

Based on the motives for adopting virtual education, we can identify the objectives this system aims to achieve:
• Achieving Equal Opportunities in Education: This is often described as "education democracy," which emphasizes that "everyone has the right to access available educational opportunities." Virtual education helps overcome time, age, and geographical barriers, allowing all individuals to learn without commuting. As noted by Al-Sanbel (2001), "This type of education helps to achieve the democratization of education, as education is transferred to every citizen wherever they wish. It also contributes to making education a continuous and extended process throughout life" (p. 84).
• Promoting a Culture of Self-Learning: Virtual education encourages self-learning and self-training, developing learners' skills and experiences. This shift moves away from traditional rote learning, fostering autonomy that enhances the quality of education.
• Leveraging Modern Technologies: Virtual education provides students and teachers with various digital tools, such as websites and CDs, to enhance their learning experiences.

• Creating a Supportive Educational Environment: This approach aims to improve academic achievement for many students while offering good training and professional growth opportunities for employees. By harnessing qualified learning resources, virtual education contributes to developing effective professionals, which positively impacts societal development across various fields.

• Reducing Classroom Pressure: By accommodating more students, virtual education alleviates overcrowding in classrooms, enhancing the effectiveness of teachers and creating a more comfortable atmosphere for both students and instructors.

• Organizing the Educational Process: Virtual education facilitates the planning of school schedules, exam systems, and student evaluations, ensuring that goals are clearly defined and achievable.

8- Features and Characteristics of Virtual Education

Virtual education offers several advantages, including:

• Increased Learner Freedom: Learners have greater freedom to study and pursue education compared to their peers in traditional education systems. These systems often require adherence to a strict schedule imposed by the educational institution (Zaytoun, 2004: 284).

• Innovative Educational Material Preparation: Virtual education employs specialized methods for preparing educational content. This approach ensures that the course structure, its formal elements, and presentation methods are effectively integrated. The course does not merely present educational material; instead, it simulates the teacher's role through guided educational dialogue. This method fosters a sense of communication between learners and the "hidden teacher" embedded within the course design (Zaytoun, 2004: 284). The interactive process is a key feature of this educational approach.

• Alignment with Modern Educational Principles: Virtual education adheres to various principles of contemporary education. These include motivating learners, recognizing individual differences in learning styles, and allowing learners to select courses that align with their professional interests and desires. This flexibility ensures that education is tailored to meet individuals' professional, personal, and social needs while connecting to the labor market.

• Utilization of Modern Technologies: This educational approach leverages advanced technologies and contemporary communication tools, setting it apart from traditional education as a reflection of scientific and technological progress.

• Overcoming Barriers to Traditional Education: Virtual education addresses many challenges that restrict access to traditional education. These challenges include issues related to regularity, time, location, working conditions, admission requirements, age, and evaluation systems. Moreover, it facilitates access for a broader age range, including adult workers and homemakers, who may not fit into the typical age brackets defined by traditional institutions (Zaytoun, 2004: 287).

9- Stages of Virtual Education

Virtual education has evolved through several key stages:

9.1 Teaching by Correspondence

This early form of virtual education involved the exchange of letters through postal mail. It achieved significant success in Western countries, particularly in Germany, the United States, England, and France, and was also adopted by several developing countries, including Algeria. The target audience for correspondence learning primarily consisted of adults with professional, social, and family responsibilities. This demographic remains a focus of distance education today (Schlosser & Simonson, 2015: 9).

9.2 Open Universities

Open universities allow learners the freedom to select materials that suit their needs and preferences. This stage of virtual education utilizes various resources, such as printed materials, audiovisual content, CDs, and correspondence through regular mail, television, and radio programs that explain the courses.

9.3 Video Conferencing

Video conferencing represents a significant advancement in virtual education, incorporating both audio and video components to enhance interactivity in the learning process. It relies on satellite technology and satellite television broadcasting, making it one of the most important tools in virtual education due to its accessibility for teachers (Karima, 2018: 350).

9.4 Virtual Education Using the Internet

This is the most recent stage and reflects the global trend toward online education. The widespread availability of the Internet and the rapid dissemination of information have led to the emergence of new educational institutions that primarily rely on technology. These institutions are often referred to as monotypical institutions, with the more advanced versions being called virtual universities (Karima, 2018: 350).

10. The Experience of Virtual Education in Algeria

Like other developing countries, Algeria has embraced distance education for various reasons, including its vast geographical area and the goal of achieving universal education. This method has proven effective worldwide in disseminating knowledge while reducing costs. The Ministries of Education and Higher Education in Algeria have made significant efforts to promote virtual education. However, the Algerian experience is still in its early stages and faces numerous challenges and obstacles, which will be discussed further. Some notable Algerian programs include:

10.1 Ministry of Education Programs

10.1.1 The National Institute for Education and Distance Learning

Established in 1969 as the National Center for Generalized Education, this institution was transformed in 2001 into the National Bureau of Education and Distance Training. It serves as a valuable resource for learners of all ages, providing opportunities for those who have not had the chance to complete their studies (National Bureau for Education and Distance Training, 2020: 3).

Duties:

Instruction is provided in accordance with official programs, either through correspondence or by utilizing media technologies and communication to support individuals who could not continue their formal education.

The institute aims to reduce the school dropout rate by organizing support and alternative quotas for students requiring special educational assistance.

It implements appropriate methods and means of education and distance learning, particularly through information and communication technologies.

The institute establishes partnerships and cooperation with foreign bodies and institutions to enhance its activities.

It contributes to promoting the Arabic language, particularly for non-native speakers in Algeria.

It ensures the provision of complementary education within the framework of normative renewal and social and professional advancement (National Bureau for Education and Distance Training, 2018).

10.1.2 The iPad Digital School as a Model

The iPad Digital School aims to effectively integrate information and communication technologies within the educational environment. It seeks to foster continuous communication between schools, teachers, learners, and parents, providing students with greater access to automated media within educational institutions and enhancing their chances of academic success.

The "iPad" Foundation launched this digital school, targeting secondary and intermediate students with a special online program designed for those preparing for the baccalaureate certificate or the basic education certificate. This virtual school, named "Your Upbringing," serves as a comprehensive and integrated educational space for all stakeholders in distance education. It specifically caters to students, parents, and educational institutions (Dabab & Bruais, 2019: 159).

The iPad Foundation has also created a virtual school that allows students enrolled in public or private institutions to prepare for exams. The subjects taught in this virtual school align with the official curriculum outlined by the Ministry of Education. Launched four years ago for primary education, "Your Upbringing" provides access to 300 lessons for final-year students and 300 lessons for intermediate students, along with 3,000 exercises that include corrections and explanations. Students can communicate with their subject teachers through the program to seek further clarification. Additionally, parents can monitor their children's activities at school, including lesson schedules, attendance, academic performance, and feedback from teachers. The program enables teachers to access lists of students and their lessons, fostering a collaborative educational environment (Dabab & Bruais, 2019: 160).

10.2 Virtual Education Programs in the Field of Higher Education

The University of Algeria is among the universities that have proactively adopted and employed the virtual education system. Among the goals it seeks to achieve through this are:

Absorbing the increasing numbers of teachers while gradually overcoming the challenges posed by the inverted pyramid structure regarding current teachers (quantitative criterion).

Improving training awareness and rapidly approaching international standards in terms of quality assurance (qualitative standard).

10.2.1 University of Continuous Training

10.2.1.1 Definition of the University and Its Teaching System

It is a public institution affiliated with the Ministry of Higher Education, established in 1990, aimed at providing educational services to those who did not have the opportunity to obtain it due to various circumstances. Since its inception, the institution has relied on the virtual education system and utilized a range of educational means and tools. This university comprises 53 centers and 11 annexes nationwide, supervised by university professors. Before the recent reforms, it allowed any holder of a baccalaureate degree or an equivalent certificate to join and complete his studies to obtain a certificate in applied university studies.

The teaching system at this university does not differ from that of a regular university in terms of educational programs and courses; the only difference lies in the laws and conditions of teaching. Students undergo a three-year training program that includes academic training in their field according to their specialization, with students required to complete and defend a graduation project in their final year of training.

As for the graduation patterns before the recent reforms, the university's graduation consisted of two phases:

Pre-graduation Stage: Registration required obtaining a third-year secondary level, called the preparatory stage, which has three divisions: Arts, Science, and Management and Economics. Students can choose their mode of education, whether regular or free, with compulsory attendance, taking into account the availability of teaching staff. At the end of this year, students take the baccalaureate exam (bac UFC), qualifying them for university admission. However, with the new reforms, the preparatory year for the entrance exam to the University of Continuous Training has been abolished, and enrollment now requires only a baccalaureate degree, similar to regular universities.

Post-graduation Stage: At this stage, registration is based on the baccalaureate degree obtained, and it includes two types of education:

Face-to-Face (F2F): F2F classes are scheduled based on the conditions of employed students.

Distance Education Using Audio-Visual Means: This is one of the primary tasks for which this institution was established. This is conducted through the university website, with programmed lectures and uploaded audio-visual lessons. It also provides electronic discs containing all necessary materials for learners. For inquiries and concerns, students can submit their questions via university email, and responses are sent to the same email. Regular communication and interaction between learners and professors occur twice a week to enhance the educational experience. Additionally, virtual education relies on radio and television classes, along with weekly lessons broadcast on national terrestrial channels (Larbi, 2017: 31).

10.2.1.2 Reforms Witnessed by the University in the Field of Virtual Education

The university has made significant advancements in its training performance in distance education, particularly after developing educational platforms that allow students to study from any location while benefiting from direct supervision by professors and engaging in various activities virtually. This setup enables students to progress academically without relocating.

The university has also undergone several reforms, launching remote registration programs for bachelor's and master's degrees in multiple fields, including economic, commercial, legal, political sciences, media, communication, languages, and automated media. Those wishing to enroll in higher education for a bachelor's or master's degree remotely must possess a secondary education baccalaureate certificate or a foreign certificate recognized as equivalent. Registrations were open from February 4 to February 24, 2021, through a dedicated website for this process, which was restructured to align with the reforms affecting the higher education sector by adopting the LMD system after granting the certificate of applied university studies (DUEA) (Algerian Study Website, 2021).

2.6.1.3 Recent Projects of the University of Continuous Training in the Field of Virtual Education

FORTIF Training (Master): This program focuses on training specialists and includes two components in distance education. It is a collaboration with UNESCO, CNED, the French CNAM, and the

A band 6. One key aspect of this program is preparing lessons on the Internet (Web) using the SERPOLET virtual learning platform for distance education.

10.2.2 National Virtual Education Project

10.2.2.1 Overview

The National Virtual Education Project was launched at the University of Algeria to address existing gaps in educational framework and improve training quality to meet quality assurance standards. This project originated at the University of Oran and aims to integrate new educational methods. The project has three main stages:

First Stage: This stage focuses on using technology, such as video lectures, to manage the increasing number of learners while enhancing educational quality in the short term.

Second Stage: This stage adopts modern pedagogical technologies, particularly "WAP," which refers to online learning or e-learning. The goal is to ensure quality assurance in the medium term.

Third Stage: This stage involves integrating and disseminating the distance education system. It promotes distance education through the Knowledge Channel, benefiting users beyond the university context (Maamri, 2013). Currently, education relies on a network of visual lecture platforms and e-learning resources available to most educational institutions. Access to this network is facilitated by the National Research Network (ARN). Thirteen higher education institutions have set up locations for both sending and receiving data, while 64 other institutions serve as receiving sites. This setup encompasses 77 higher education institutions, including universities, university centers, and higher schools. The Scientific and Technical Research Center serves as the project's central hub (Salami et al., 2016: 38).

The project features three visual lectures from several universities, including the University of Benyoussef Benkhadda, Harib Boumediene in Algiers, Saad Halab Boubagi Mokhtar in Annaba, Qasid Rabb Habbour Fafleh, Abdel Rahman Femirah in Bejaya, Hajel Khader Binta, Mentouri Bikbek Santine, and Farahat Abass Séf. Additional contributors include the universities of Sanya Bouhran and Abu Kerbe Kerbe Laydemant Touch, along with the Center for the Development of Advanced Technologies and the Research Center in Scientific Media and Mastery (Salami et al., 2016: 38).

2.6.2.2 Modern Programs and Future Projects for Virtual Education at the Algerian University

COSELEARN: This program is a collaboration between the Ministry of Higher Education and Scientific Research and the Swiss Foundation Qualilearning. It focuses on training in the principles of distance education and involves nine countries from the Sahel and Maghreb regions. The program has two stages:

First Stage: In 2007, 34 experts were trained and employed as specialists and engineers in various Algerian university institutions.

Second Stage: This stage began in March 2009 and involved training assistant specialists (now specialists in e-learning) with goals such as:

Strengthening permanent support teams in technology.

Increasing the number of students by providing a technological environment that connects partner universities. Thousands of students gained free access to various services, including email, shared calendars, and document storage (Saidahm, 2018).

Avicenne Virtual: This is one of the largest virtual education projects in the Mediterranean region. It uses information and communication technology in education, combining technical, media, and educational factors when preparing programs and materials. A group of professors from participating universities supervises this process. Educational materials are accessible in more than six languages and include 15 Arab and European countries: Algeria, Tunisia, Morocco, Egypt, Lebanon, Syria, Jordan, Palestine, Turkey, France, Spain, Cyprus, Malta, Italy, and Britain. Each center across these countries is known as the Avicenna Knowledge Center (AKC) (Qahham & Al-Sabti, 2015: 19).

Project auf - Master Branch: This project focuses on insight and visualization in computer-aided design.

Transfert auf: This project configures two components in the field of virtual education, using the ACOLAD virtual education platform.

DESS UTICEF: This master's program trains specialists in the use of information and communication technology to enhance education and training. Louis Pasteur University in Strasbourg and the CERIST Center for the Study and Research of Scientific and Technical Information oversee this initiative.

FPD.CARO: This initiative, led by the University of Bejaia, introduces new educational practices based on independence, social learning, cognitive conflict, self-learning, and knowledge building through educational activities (Gharaf, 2014: 74-75).

programmatically.IDE: This program directly supports ongoing reforms in vocational education. It addresses economic and industrial needs, aiming to expand media and communication technology in higher education and scientific research. The program also seeks to develop training through underutilized means (Saidahm, 2018: 15-16).

10.2.2.3 The Equipment of Al-Jazari University to Implement the Virtual Education System

To ensure the success of virtual education at Algerian universities, the Ministry of Higher Education and Scientific Research has allocated a significant budget of 1.35 billion Algerian dinars. The electronic education system has been enhanced through a national network connecting libraries. This network aims to expand access to all institutions across the country, based on the following:

Video Lecture Network and Electronic System: This initiative focuses on optimizing human and material resources by creating a video lecture network that integrates all university institutions. It includes 13 sending sites and plans for 46 additional sites. The network was expanded starting from the 2009-2010 academic year, reaching preparatory schools equipped with virtual laboratories and multimedia teaching halls connected to a special video lecture network (Abassi & Foudi, 2020: 90).

E-Learning System: The e-learning system is based on a virtual learning platform functioning as a client-server model. This system allows for setting up and accessing resources online in an asynchronous manner. Teachers can utilize various methods, including lessons, exercises, and practical lessons. The system also offers tools for collaboration among professors, such as email, forums, and chat (Abassi & Foudi, 2020: 88-90).

The ultimate goal is to develop real online educational pathways that consider learners' needs and are founded on focused pedagogy. This approach follows a specific pedagogical charter aligned with new educational techniques that incorporate information and communication technologies, such as participatory training, structuring, sequencing, and scenario development. It adheres to standards related to IMS (SCORM, LOM) (Abassi & Foudi, 2020: 90).

11. Obstacles to Virtual Education in Algeria

Despite efforts to implement successful virtual education in schools and universities, Algeria faces numerous financial, human, and technical challenges:

11.1 Physical and Technical Obstacles

Limited Material Resources: There is a scarcity of educational materials and software, inadequate equipment (e.g., computers), and insufficient internet coverage and speed.

Budget Constraints: The educational sector requires substantial financial resources for internet access that institutions often cannot provide.

High Cost of Communication: Electronic communication can be expensive.

Lack of Integrated Infrastructure: The absence of cohesive hardware, software, and communication networks hampers progress.

Weak University Sites: University facilities often lack organization, and there is a shortage of specialists in this area (Salami et al., 2016: 39).

Recognition Issues: Some official bodies do not recognize the certificates issued by online universities.

Cost of Educational Software: Designing and producing educational software is costly.

Inconsistent Standards: There is no unified standard for content creation.

Frequent Network Interruptions: Connectivity issues can disrupt learning.

Challenges with Implementation: Applying adaptive technologies can be difficult.

11.2 Human Obstacles

Lack of Awareness: Many professors and officials lack knowledge of computer technologies and are more familiar with traditional education methods.

Student Resistance: Students often prefer traditional methods that require less effort, as they seek ready-made lectures (Belbakai, 2015).

Training Needs: Teachers, learners, and administrators require training in computer and internet use. However, there is a notable lack of interest in foreign language proficiency courses among teaching staff (Dabbah & Brouis, 2019: 164).

Shift Towards Self-Learning: The internet's role in education may lead to confusion and anxiety among learners without proper guidance and supervision.

Negative Teacher Attitudes: Some educators view technology as peripheral to the educational process, believing that traditional teaching methods are sufficient. Others perceive technological tools as competition for their roles (Dabbah & Brouis, 2019: 164).

Low Student Engagement: There is often a poor response from students to new educational methods.

Brain Drain: There is a lack of qualified specialists in technology fields due to emigration.

Unclear Concept of Educational Technologies: Despite advancements in developed countries since the late 1960s, Arab nations, including Algeria, still often refer to educational tools in outdated terms. Consequently, the concept of educational technologies is not fully embraced or applied in ministries of education, universities, or institutes (Dabbah & Brouis, 2019: 165).

Incentives for E-Learning: Clear incentive systems are necessary to motivate students towards e-learning. Currently, the lack of defined methods and incentives hinders the effectiveness of online education (Dabbah & Brouis, 2019: 165).

12. Suggested Solutions

Continuous Training and Support: Implement ongoing training programs for teachers and administrators at all levels to enhance their skills in virtual education.

Community Awareness Programs: Raise awareness among community members about the benefits of virtual education. Organize initiatives aimed at correcting negative perceptions and promoting positive attitudes towards this mode of learning.

Curriculum Development: Ensure that curricula are continuously updated and aligned with established educational plans, facilitating the effective integration of virtual education.

Re-engineering Educational Processes: Revise educational and administrative processes to effectively utilize educational information systems and tools, especially digital communication technologies and self-directed learning resources (Dridi, 2017: 223).

Program Reassessment: Reevaluate and enhance existing programs, courses, and educational strategies. Focus on effectively implementing various information technology programs, including the knowledge economy, information systems, software engineering, networking, e-commerce, and artificial intelligence. Distance education should be prominently integrated into these programs (Dridi, 2017: 223).

Improved Communication Networks: Work towards establishing an advanced, cost-effective communication network to promote equitable access to education for all groups. Accessible Educational Resources: Develop and distribute educational materials in the form of e-books at minimal costs, ensuring accessibility for all learners. Addressing Resource Shortages: Tackle the shortages related to material resources and equipment essential for effective virtual education. Technical and Administrative Solutions: Identify and resolve all technical and administrative challenges that hinder the implementation of virtual education.

Recognition of Distance Education: Promote the integration of distance education in postgraduate studies, enabling the issuance of recognized certificates for those seeking educational advancement.

Skill Development: Encourage educational institutions to focus on developing general skills, including critical thinking, planning, cognitive and psychological adaptability, technological proficiency, and effective time and resource management.

12.Research Results

Through our examination of the concept of virtual education and the Algerian experience in this field, the present study reveals the following findings: The experience of virtual education in Algeria is still in its early stages. It has not yet fully transcended the constraints of time and space. The understanding of virtual education in Algerian society is primarily limited to correspondence education. This limitation stems from a lack of awareness about virtual education and its advancements, which is further exacerbated by a general detachment from modern information and communication technologies.

13. Conclusion

Virtual education in Algeria has yet to achieve a satisfactory level of quality. It continues to face numerous challenges, both material—such as insufficient equipment and resources—and human, relating to training and acceptance of new technologies. Additionally, the absence of a unified standard for content creation and technical issues regarding security and data integrity further complicate the situation. Despite the availability of innovative websites, Algeria suffers from a scarcity of experts in information technology, marketing, and management. There is also a shortage of professional educators who are specifically trained in these areas. These shortcomings adversely impact the quality of education and hinder scientific advancement and national development. Given these observations, Algeria must critically evaluate the shortcomings in its virtual education system. It should thoroughly analyze the challenges it faces and devise suitable solutions to overcome them. Moreover, establishing a forward-looking vision for the educational process—particularly in the realm of virtual education—is essential for the country's future progress.

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