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The Implementation of Technological Means in Educational Institutions: Current Realities and Future Prospects

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Abstract

This study explores the implementation of technological means in educational institutions, focusing on current realities and future prospects. It highlights the transformative impact of educational technology on teaching and learning by enhancing communication, fostering self-directed learning, and modernizing instructional methods. The study defines technological means as instructional tools that facilitate effective knowledge acquisition and promote learner autonomy. A field investigation conducted in Algerian educational institutions, particularly at Khalij Al-Murjan in Annaba, demonstrated that integrating computers into Arabic language teaching increased learners' motivation, confidence, and engagement while reducing anxiety. Teachers also acknowledged the computer's role in enhancing creativity and problem-solving skills. The research concludes that incorporating technological means—especially computers—into education is essential for improving teaching quality and learning outcomes. It further recommends collaboration among educators, linguists, and engineers to develop Arabic CALL programs and provide continuous IT training for teachers.

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Introduction

Educational institutions represent pivotal social structures that bear a significant responsibility in the development of ideas and skills. Consequently, the educational field has witnessed the emergence of numerous novel methods and approaches, notably the integration of modern technologies into the educational process. This integration has precipitated a substantial transformation within the educational environment.

Educational technology (ET) contributes to the deepening of the learning process with the objective of improving its outcomes. ET is conceptualized as a comprehensive process grounded in the application of scientific and theoretical frameworks and the utilization of human learning resources.

ET facilitates a rich, multi-sourced learning environment that actively promotes communication among the diverse stakeholders within the educational system. Furthermore, it aids in modeling education and presenting it in a contemporary format, simultaneously fostering a generation of teachers and learners capable of engaging with technology and equipped with the requisite skills of the contemporary era.

The incorporation of modern technologies into the educational process has spurred notable and rapid developments that have influenced the performance of both teachers and learners. This influence stems from technology's capacity to handle not only information but also images and sound. As a result, the contemporary objective of education has

evolved beyond merely imparting knowledge and facts to learners; it now extends to cultivating their skills, competencies, and self-reliance, enabling them to interact effectively with the evolving demands of modern life.
Hence, educational methods within the educational process have diversified. E-learning has emerged as a key approach, relying on the transfer of knowledge through information and communication technologies (ICTs) due to their inherent efficiency, speed, and wide-ranging dissemination.
Accordingly, this research paper seeks to address the following two pivotal questions:

- What is the current reality of educational institutions' adoption of technological means?
- How have technological meanscontributed to the development of the educational process?

I.The Concept of Technological Means

The term modern technology refers to technological resources distinguished by their high efficiency and speed in executing user-defined tasks. These resources enable users to attain their objectives through various methodologies, in the shortest possible time, and with the highest levels of efficacy. Modern technology constitutes an optimal pathway for accessing services or information, and its existence is essential for facilitating individual lives across diverse domains. It is evident that such technology has permeated all sectors, including health, education, medicine, transportation, and tourism.
Based on this premise, technological means utilized in an educational context are defined as the collective technologies and instructional tools through which pedagogical methods (theories, concepts, knowledge, and experiences, etc.) are presented to learners. These means enable learners to acquire and assimilate this content with minimal effort and in the shortest possible time (Bachar2019)
They are also defined as "materials employed by the instructor to assist in the effective delivery of educational content," which may encompass models, pictures, drawings, or devices. The instructional resource (medium) must satisfy the following criteria:

- It must be relevant to the subject of learning.
- It must be displayable within the classroom environment.
- Its presentation must correspond to the learner's developmental level.
- It must be cost-effective in terms of expense, presentation, and benefit.

It must be easily accessible to both the instructor and the learner, allowing for consultation when required (http://www.akut.comL 2010)

- In an alternative formulation, technological means are described as "any material, medium, or device that the instructor can use to facilitate the teaching–learning process, whether it is a printed book, a film, or even a chalkboard." In essence, they are any materials, tools, or devices that are partially or entirely deployed to induce the learning process among students (Al Farra 1999)

1. The Utilization of Technological Instruments in the Educational Process

Technological instruments constitute one of the fundamental pillars upon which the future school is constructed. The success of the educational process in attaining its objectives is gauged by the swiftness of its response and interaction with societal changes, as well as by the extent of its benefit from the tremendous knowledge explosion the world is currently witnessing. The significance of employing technological instruments in learning is evidenced by the advantages they offer compared to traditional learning. The most notable benefit of this mode of learning resides in the flexibility it affords, alongside other advantages, including:

- **Self-directed Learning**: Most e-learning programs are accessible whenever there is a need or desire to engage with them.
- **Accelerated Learning Pace**: E-learning courses can be completed approximately 50% faster than conventional courses, partly because individualized work permits learners to bypass material they already possess knowledge of and concentrate on topics necessitating additional practice.
- **Consistency of Delivery**: E-learning eliminates issues associated with the varied instructional approaches utilized by educators for the same subject matter.
- **Ubiquitous Accessibility**: E-learning is accessible from any location and at any time. This characteristic has rendered education viable for individuals who, due to heavy professional commitments, were previously unable to attend such courses before the development of e-learning.
- **Ease and Speed of Renewal**: E-learning materials can be effortlessly updated and reloaded onto compact discs (CDs). Although the update and distribution of CD-based programs might entail slightly higher expenditures, it remains less costly than the manual reprinting of instructional content and the retraining of educators to deliver the revised material.
- **Enhanced Retention Capacity**: This improvement stems from the multimedia elements integrated into e-learning—such as videos, interactive audio effects, and others—that serve to reinforce the intended message for learners (Al Zarkani, www.scrbd.com)

Technological instruments stimulate the motivation of learners and facilitate the educational process. The concept of facilitation has become intimately linked with modern educational curricula, expressing their ambition to render

the learning process more accessible and advantageous for the learner. It represents, therefore, a comprehensive and dynamic issue that necessitates reflection upon the nature and objectives of teaching, as well as the development of specific hypotheses based on the constantly evolving insights from psychology, pedagogy, and sociology (Bennani1999)

In the domain of Arabic language didactics, facilitation is predicated on "adapting grammar and morphology to the standards mandated by modern education through simplifying the methodology by which grammatical rules are presented to learners." Indeed, scholarly inquiry into pedagogical methods to facilitate the teaching of Arabic has become an urgent prerequisite for elevating the language to the stature of globally dominant languages—a goal achievable solely through the coordinated endeavors of stakeholders at all levels (Journal of linguistic studies, vol 03,p152.)

Thus, the employment of technological instruments furnishes a clear illustration of how modern technology can be applied and integrated into educational institutions. These instruments are diverse, encompassing audio recordings, smartphone applications, and computers.

2. Types of Education Based on Technological Means

When technological means are integrated into the educational process, they serve to deliver individualized lessons directly to learners, wherein interaction occurs between individual students and the educational programs provided by the computer, adhering to self-learning models. The nature of the studied program and the learner's adopted learning style influence this interaction. (Al-Hilah,2003) This process essentially involves the interaction between the learner and the computer, often through a computer-based educational program. The incorporation of technological means has led to the emergence of several types of learning enabled by modern technologies, as follows:

2.1 Individualized Learning

Individualized learning refers to an instructional process that considers learners' individual differences and personalizes learning so that each learner has the opportunity to study according to their needs, abilities, and interests. Through the use of computers, the machine itself undertakes the entire process of instruction and evaluation, effectively replacing the instructor. (Abdul Malik,www.etc.go.sa) This represents a form of direct interaction between the learner and the computer, exemplifying individualized learning (Gharib,2006)

2.2 Distance Learning

Distance learning aims to deliver educational services to groups unable to attend institutions or learning centers in person. It employs a variety of media, ranging from printed materials to satellite broadcasting, with intermediate tools such as correspondence, press, radio, telephone, television, audiovisual recordings, and electronic computers (Gharib,2006)

2.3 Self-Learning

The remarkable advancement of technological means has underscored the importance of teaching students how to learn and how to retrieve information, rather than merely acquiring facts and skills that soon become obsolete. This is because curricula are constrained by rapid obsolescence, leading them to lose their relevance over time (Gharib2006)

2.4 Computer-Assisted Instruction

The computer is utilized as an auxiliary educational tool for learning. It facilitates the design and presentation of lessons through projectors, the development of specific applications, or the operation of an electronic whiteboard.

2.5 The Computer as an Information Source

Information is stored in the computer and retrieved when needed; for instance, saving financial and economic data relevant to a given curriculum or maintaining records of students' information for future reference (Abdul Malik, www.etc.go.sa)

The modern world is experiencing an unprecedented scientific revolution in the field of computing, which has become an integral part of all levels of education, from primary school to university. There are numerous reasons to acquire comprehensive knowledge about the use of technological means in education. Consequently, several justifications for the use of computers in educational institutions can be identified.

3. Justifications for the Use of Technological Means in Educational Institutions

The integration of technological means into educational institutions has become an imperative in the digital age, as it allows the educational system to keep pace with ongoing technological developments. The key justifications for adopting computer technologies in educational settings can be summarized as follows:

- Computers assist in performing tasks more quickly.
- They lower the overall cost associated with completed tasks.
- Work completed utilizing computers tends to be of a higher quality (Ali,www.badnia.net.2007)
- The computer serves as a patient "instructor," enabling learners to review materials repeatedly without fatigue or frustration.
- It reduces the time and effort required for data analysis, ensures accuracy, and offers high storage and retrieval capacities.
- It allows for the diversification of instructional methods and approaches to achieve specific learning objectives.

- The computer acts as an interactive medium between the device and the user, unlike other means which are limited to one-way transmission (Malik,www.etc.gov.sa)
- The novelty of computer-based educational programs stimulates learners' motivation and fosters active learning toward achieving educational goals.
- Computers create a conducive environment for inquiry through access to various educational resources.
- They aid learners in constructing educational materials and analyzing abstract concepts and information.
- They improve the quality and impact of the learning process.
- Educational content can be divided into a series of units that learners can study at their own pace and according to their abilities and schedules.
- Computers meet the demands of ongoing technological evolution. It is no exaggeration to state that the world is witnessing an educational revolution brought about by the rapid scientific and technological developments that have created what is termed "knowledge accumulation." This is essential for addressing the major challenges of the twenty-first century, such as cultural change, technological advancement, and the information age. These present and future dynamics compel educators to rethink and develop curricula to align with the needs of both the present and the future.
- Computers make learning more effective and appealing by incorporating colors, images, and music.
- They enable struggling learners to correct their errors without embarrassment.

4. The Teacher and Their Role in Technology-Based Education

The role played by the teacher in the educational environment is of paramount importance, as the teacher constitutes a fundamental pillar of the educational process. The teacher is responsible for delivering the subject matter according to a specific methodology aimed at shaping a learner of distinguished academic level—which is the ultimate goal we strive for. Since the learner is the center of the educational process, their interests and aptitudes must be taken into account when designing the curriculum. Furthermore, other factors must be considered when presenting the material, including the technological integration witnessed by society. Arabic language classes, for instance, have become tedious from the students' perspective, leading them to disengage due to the monotonous instructional methods adopted by teachers in delivering lessons.

Today's learners are influenced by and in tune with technological development—especially the computer, which has become widely accessible. In traditional educational settings, teachers still rely on conventional teaching aids—such as the blackboard—which places the entirety of instructional responsibility upon them and leads to the persistence of the rote-learning method. Although the competency-based approach is meant to involve the learner in lesson construction, the students' weak foundational knowledge often prevents this. For that reason, integrating modern educational technologies has become essential, as they constitute one of the core foundations upon which the school of the future must be built.

The role assumed by the teacher in the educational process, in general, is extremely vital since they represent one of its key components, serving as the mediator between the curriculum and the learner (Al- Awraghi,2006) The extent of the teacher's scientific and pedagogical expertise, along with their mastery of effective instructional methods, determines their ability to produce excellent and creative students. Indeed, the success of the educational process cannot be achieved without the teacher's contribution. Their competence, motivation, and inclination toward teaching enable learners to acquire appropriate educational experiences (Al- Zarkani,www,scrbd.com)

It is true that the learner is the core of the educational process, and that everything should be adapted to their interests, aptitudes, capacities, and academic and pedagogical level. However, the teacher remains the key element that ensures the effectiveness of teaching and learning (Al- Zarkani,www,scrbd.com) Nevertheless, the teacher's role has fundamentally changed from the past to the present. To reflect this profound transformation, a set of terms has been introduced to describe the teacher's function, such as facilitator, guide, supervisor, and expert, among others.

This transformation is particularly evident in computer-assisted instruction, in which the teacher's importance and role have greatly increased. The computer requires a skilled teacher who masters instructional strategies and is eager to stay abreast of every new development in their field of specialization. With the rapid technological progress of the twentieth century, teachers have taken on new roles. To ensure that their role remains truly effective, teachers must combine specialization with experience, be well qualified, and possess the necessary expertise to guide their students effectively so they can make optimal use of technology.

Accordingly, the teacher must:

- Transform the classroom from a space where information is transmitted in a fixed, one-directional mannerfrom teacher to learnerinto a dynamic learning environment centered around the learner.
- Develop a practical understanding of learners' characteristics and needs.
- Employ instructional skills that take into consideration the learners' diverse and varying needs and expectations.
- Develop a practical understanding of technology while maintaining focus on their personal instructional role.
- Function efficiently as a skillful guide and facilitator of educational content.
- According to Brown and Henscheid (1997), (Al-Oud, bairak. yoo.com,2011) the role of the teacher who uses computers in educationwhether in traditional instruction or distance learningcan be summarized in the following key tasks:

4.1 The Role of the Instructor in Utilizing Technological Means

The instructor is tasked with elucidating the use of the technological meansfor study-related tasks, clarifying ambiguous points for the learner, and responding to all questions and inquiries. The instructor must not proceed to a new point until the learner has attained full mastery of the preceding information.

4.2 The Role of the Facilitator of Interaction in the Educational Process:

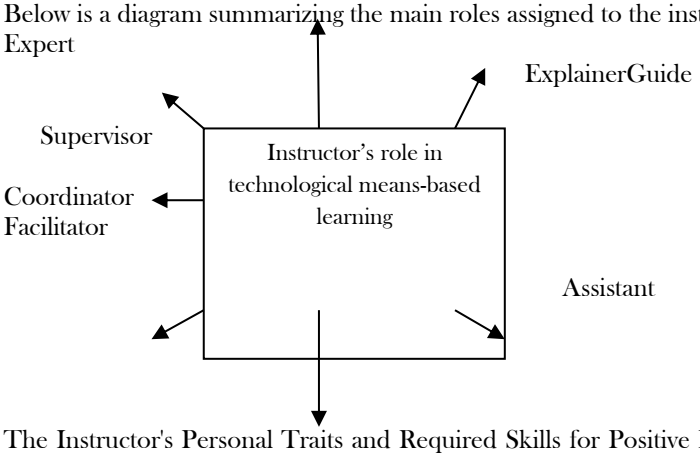
In this capacity, the instructor aids the learner in utilizing and interacting with the technological meansby encouraging the asking of questions and making inquiries pertinent to the learning process and the methods of using the technological meansto access diverse knowledge. The instructor should also promote communication with other learners and instructors who utilize the technological meansvia email and the internet, thereby enhancing responsiveness.

4.3 The Role of the Promoter of Knowledge Generation and Creativity:

Here, the instructor encourages the learner to actively employ the technological meansand to engage in creating and developing requisite educational programs, such as designing web pages and collaboratively conducting writing tasks and academic research with other learners. This also encompasses participation in discussions through email (Al-Zarkani,www,scrbd.com) Consequently, the instructor's role becomes more engaging and enriching, transitioning from a mere transmitter of knowledge to a supervisor and guide who shares in the learners' engaging journey of acquiring and applying knowledge.

Furthermore, the instructor's connection to the educational reality will be strengthened through the Digital Simulation Network, which will immerse the instructor in virtual classrooms—dynamic and interactive models—that replicate real educational settings (Al- Zarkani,www,scrbd.com)

Below is a diagram summarizing the main roles assigned to the instructor in technological means-based learning:



The Instructor's Personal Traits and Required Skills for Positive Interaction with the Technological means-Based Learning Environment:

- Motivation
- Self-control
- Flexibility
- Time management skills
- Perseverance
- Future planning
- Self-confidence
- Effective communication skills
- Commitment
- Ability to assume responsibility for learning
- Reading and note-taking skills
- Making educational decisions
- Information retrieval skills
- Adapting instruction to individual learner differences
- Information technology skills
- Learner performance evaluation
- Data analysis and interpretation skills leading to results
- Research based on strategic approaches

II.The Use of Technological Means in the Algerian Educational Institution: Reality and Prospects

The status of the Arabic language within educational institutions is notably problematic. Students pursuing the Arabic language often show disinterest in learning their native tongue, consequently assigning it a marginal role. Therefore, a focused emphasis on its instruction is now essential, as this educational process serves as the core connection re-establishing the relationship between Arabic speakers and their language. This goal necessitates rigorous planning and a robust methodological and strategic framework.

The factors contributing to the deficiency in Arabic language instruction within the Algerian educational institution are two-fold: some relate to pedagogical planning and instructional approaches, while others pertain to the tools and technologies that should be utilized as supplementary means to facilitate learning and engage students (or learners). Consequently, the Arabic language education system in Algerian schools must incorporate technological means into the instructional process to enhance motivation and appeal in language learning.

1. Field Study: A Model for Employing Technological Means in the Algerian Educational Institution

A field study was executed using a randomly selected sample of fourteen (14) learners. This sample regularly participated in sessions where computer-based model lessons were employed, in addition to their standard computer science classes. The sample was sourced from the Khalij Al-Murjan Institution in Annaba Province—an educational institution that offered the appropriate setting for conducting this study, as it required a classroom equipped with multiple computers.

The study sample comprised eleven male learners and three female learners. Three lessons delivered by the subject teacher using the conventional teaching method were closely monitored.

2. The Traditional Method of Presenting Educational Material

Each lesson, lasting one hour, was exclusively dedicated to linguistic phenomena and conducted using a text-based approach. The instructional session was structured as follows:

- The instructor commenced by posing a set of questions designed to orient the learners toward the lesson's central theme.
- This phase was succeeded by oral reading, wherein each learner read a paragraph or a segment thereof, thus facilitating the maximal number of students to participate in reading the text.
- Subsequently, the main idea and supporting ideas of the text were identified.
- The instructor selected a set of sentences from the text and transcribed them onto the board. Through observation—guided by the instructor—the learners were systematically led to discern the specific linguistic phenomenon constituting the lesson's objective.
- The grammatical or linguistic rule was then induced.
- Despite the instructor's professionalism and twenty-eight (28) years of experience, several observations were documented:
- The instructor's presentation of lessons adhered to a singular pattern, which engendered a sense of monotony and routine during instruction.
- There was a noticeable deficit in motivation and engagement, which failed to capture the learners' attention—particularly given their age range between 11 and 16 years.
- By the conclusion of each lesson, the instructor exhibited signs of fatigue, which diminished their performance, especially during the final sessions of the day.
- The instructor did not allocate sufficient attention to verifying learners' comprehension of the lessons, primarily attributable to time constraints.
- A number of learners refrained from participating, particularly during the practice stage, due to feelings of embarrassment or anxiety regarding the provision of incorrect answers.

On this basis, it becomes evident that the method enabling learners to engage actively and efficiently with the lesson should foster positive interaction throughout its progression. It ought to stimulate learners to think, irrespective of their proficiency level, and permit them to participate freely in the lesson without feeling self-conscious in the presence of their peers. Learners must perceive that committing mistakes is an inherent component of the learning process, provided they are neither embarrassed nor discouraged.

Given that this age group (11–16 years) is notably sensitive, the elements of motivation and attractiveness in lesson presentation are critical for capturing their interest, enhancing their listening and speaking skills, and ensuring effective participation in the learning process. Consequently, the integration of modern technologies, such as computers, into learning has become an urgent necessity dictated by current realities—namely, technological advancement and the deteriorating state of education in our country, particularly in the early stages of schooling. These stages are vital for shaping the individual who will become the citizen of tomorrow, eager to explore new knowledge and technologies in all fields, especially in education.

Thus, the aim is to assist learners in the acquisition and refinement of essential skills through active training and continuous practice. Upon achieving this, we can legitimately assert that we have attained the future we aspire to—a future characterized by active learners who comprehend how to learn, how to develop their skills and knowledge continually, and how to think reflectively and critically about their own learning.

3. Core Procedures for Computer-Assisted Lesson Delivery

Focusing on the essential actions required of students during computer-based instruction:

- Explaining the procedural steps that students must follow when interacting with the computer system.
- Preparing students, promoting their readiness, and stimulating their motivation for this specific instructional modality.
- Directing students to attend closely, adhere to the provided instructions, and execute the assigned exercises.
- Addressing the critical environmental and psychological factors during lesson implementation:
- Considering the environmental conditions relevant to the students during lesson implementation, such as ensuring optimal illumination in the practice area.
- Mandating the use of headphones, given that computer-assisted lessons are typically designed to incorporate auditory components.
- Maintaining an environment of tranquility to ensure the unimpeded progression of the instructional session.
- Prioritizing the student's psychological state, as it represents a paramount factor in lesson delivery, influencing the precision, performance speed, and effective comprehension of the instructional material.
- Mitigating the operational challenges that students may encounter during lesson execution (for instance, navigating between instructional screens may pose difficulty for a student with limited computer proficiency).
- Providing pedagogical supervision and guidance by the instructor throughout lesson implementation, monitoring the progress of the learning activity, identifying both strengths and deficiencies, and meticulously documenting observations.
- Data Collection Methodology and Empirical Findings:
- Three primary instruments were utilized to gather the data necessary for the determination and validation of the scientific outcomes. These methodological tools were as follows:
- Field Observation of the implementation of computer-assisted lessons.
- Questionnaires administered to the students (the research sample).
- Questionnaires administered to the Arabic language instructors.
- These data collection mechanisms yielded a collection of observations, percentages, and numerical data which, upon systematic compilation, led to the following empirical results derived from this field study:
- There was zero absenteeism among the participants within the sample group.
- Students exhibited a high degree of interest following their attendance in the computer-assisted lessons, specifically in the manner of presentation subsequent to the initial lesson. This was unequivocally demonstrated in their conduct, reactions, and dynamic engagement with the researchers throughout every phase of lesson delivery.
- Pronounced and palpable enthusiasm was evidenced through their continuous attempts to display their responses on the computer, alongside a complete absence of apprehension regarding the submission of incorrect answers.
- Students self-corrected their erroneous responses based on the feedback provided by the computer system. Their demeanor reflected confidence and satisfaction—to the extent that two students, previously characterized by their lack of participation in conventional classroom instruction, became actively engaged upon the introduction of computer-assisted lessons, a behavior that was unprecedented among their classmates.
- One student within the sample who had previously resided abroad in France (in Oran) for twelve years demonstrated notable persistence in utilizing the headphones to listen to the exercise solutions and consistently sought to repeat them. This outcome underscores the critical significance of the auditory input (spoken language) within the instructional process.

III.The Learners' Questionnaire

The questionnaire serves as an effective research instrument in scientific inquiry, utilized to collect empirical data, ascertain factual information, understand specific contexts and variables, and investigate attitudes and perspectives. Consequently, the instrument administered to the participants (the study sample) was structured into two sections: the first section comprised four items, and the second consisted of twelve items. It was designed to elicit their perceptions regarding the adoption of computer use in Arabic language learning, their modalities of computer interaction, and the challenges they encountered during instructional implementation. Furthermore, the instrument specifically targeted the pedagogical methods employed, assessing their efficacy in fostering learner motivation and engagement, thereby improving understanding and information retention.

Participants required approximately ten (10) to fifteen (15) minutes to complete the questionnaire. Clarifications were provided prior to its administration to encourage participants to articulate their opinions candidly and accurately.

1. Learners' Questionnaire Results

The key findings, or indicators, derived from the participants' questionnaire results are presented below, organized by the following themes and their corresponding percentages:

- **Section One**

Question	Yes	%	No	%
1. Do you have a computer at home?	13	92.85%	1	7.14%
2. Do you use a computer at your school?	13	92.85%	1	7.14%
3. Are you proficient in using the computer?	12	85.71%	2	14.28%
4. Does your school encourage you to use the computer in learning?	9	64.28%	5	35.71%

➢ Section Two

Question	Yes	%	No	%
1. I am interested in learning Arabic through the computer.	14	100%	0	0%
2. In your opinion, does the computer help you in learning your language?	14	100%	0	0%
3. Does the teacher show interest in teaching Arabic using the computer?	13	92.85%	1	7.14%
4. Learning Arabic through the computer increases my love for it.	14	100%	0	0%
5. I follow other programs on the computer.	13	92.85%	1	7.14%
6. I am interested in having exercises and tests on the computer.	12	85.71%	2	14.28%
7. Using the keyboard improves my learning speed and accuracy.	14	100%	0	0%
8. I recognize and correct my mistakes through these programs, which gives me greater confidence.	12	85.71%	2	14.28%
9. My computer work benefits me in other activities.	12	85.71%	2	14.28%
10. I learn from my mistakes when I evaluate myself on the computer.	12	85.71%	2	14.28%

2. Analysis of Learner Questionnaire DataFollowing

The processing of the questionnaires and the calculation of the resultant percentages, it is imperative to subject this data to a process of scientific analysis and interpretation. This procedure serves to confirm the validity of the hypotheses and the soundness of the opinions. Based on this confirmation, the main axes of the questionnaire are identified, and the degree of influence of each axis on the others is measured, ensuring that the analysis is comprehensive and balanced across its constituent elements

The resulting percentages yielded the following findings:

➢ The learners' responses to the questions in the **first section** produced closely related percentages: **92%, 92%, 85%, and 64%**. Overall, these figures indicate that the learners' environment is conducive to computer-based learning. The responses to the first question, which asked whether the learner possesses a computer at home, showed a percentage of **92%**, meaning that most learners own a computer. This factor is undoubtedly one of the essential foundations that facilitate computer-assisted learning. In addition, the institution where the application was conducted offers a specific subject devoted to teaching the basics of computer science, as evidenced by the **92%** of learners' responses confirming that the institution encourages the use of computers. This, in turn, significantly contributes to learners' acquisition of computer-use skills, which is further supported by the **85.71%** response rate to the question: *"Do you master computer use?"*

➢ Regarding the **second section**, the learners' answers confirm that they have benefited from computer-based learning and have developed a strong inclination and eagerness to learn through this modern method. This is demonstrated by the **100%** of learners who expressed their desire to use the computer in learning the Arabic language. It is commonly observed that learners often show reluctance toward studying this subject, as they perceive it to be dry and lacking vitality—mainly due to the teacher's method of presentation and the pedagogical approaches employed. However, the learners affirmed that the computer presents lessons in a more engaging, stimulating, and motivating manner, thereby increasing their affection for the Arabic language. This is clearly reflected in their unanimous (100%) responses.

➢ During the computer-based lesson implementation, this was particularly noticeable: the lessons integrated sound, image, and colors that captured the learners' attention. The use of the keyboard and the speed of navigation between lesson stages—moving forward or backward within the program—granted the learner a sense of autonomy and helped reinforce and consolidate knowledge. This flexibility allows the learner to review information whenever needed without resorting to rote memorization. Moreover, this feature of computer-based instruction facilitates the quick operation of programs and smooth, accurate transitions between pages.

The final conclusion drawn from this analysis is that learners strongly confirmed both their ability and their keen desire to engage in computer-based learning. They found in it elements of interest, stimulation, rapid execution, and confidence-building the very factors that significantly contributed to capturing and maintaining their attention.

3. The Questionnaire Directed to Teachers

Teachers contributed to the research by providing their observations on the subject. The questionnaire distributed to them consisted of two (2) sections: the first included four questions, while the second comprised multiple-choice

items and two open-ended questions designed to elicit their opinions on the use of computers in learning the Arabic language and the extent to which it contributes to improving learners' academic achievement. The completion of the questionnaire took between two and four days.

The questionnaires were distributed to a group of Arabic language teachers from various middle schools in the Wilaya of Annaba, as shown below:

Municipality	Middle School	Number of Teachers Participating in the Questionnaire
Annaba	Khalij Al-Murjan (training site)	4
	Mustapha Ben Boulaïd	6
	Babo Mohamed Cherif	5
	Omar Al-Mukhtar	3
El-Hajar	Ressa Djoudi	4
	Ahmed Tawfiq Al-Madani	2
	Ibn Battuta	4
Total	**7 Middle Schools**	**28**

3.1 Indicators of Teachers' Questionnaire Results

➢ **First**

Statement	Yes	%	No	%	No Answer	%
The use of computers in learning is a necessity imposed by reality.	23	92%	2	8%	/	/
Lessons designed on computers build learners' self-confidence due to continuous reinforcement during lesson implementation.	15	60%	8	32%	2	8%
It enables learners to demonstrate their talents and problem-solving abilities.	19	76%	5	20%	1	4%
The learner approaches the lesson with enthusiasm.	20	80%	5	20%	/	/

➢ **Seconde**

Statement	A	%	B	%	C	%
The computer-designed program is accessible.	16	64%	9	36%	/	/
Lessons are designed in a ready-made format.	18	72%	2	8%	5	20%
I have a desire to teach using computers.	15	60%	4	16%	1	8%
The teacher's preparation for the lesson type.	17	68%	0	0%	8	32%
Computer-based lessons reveal learners' abilities.	10	40%	8	32%	7	28

4. Analysis of Teachers' Questionnaire Results

- Regarding the third item of the second section ("I feel a desire to teach using the computer"), it was observed that four questionnaires were left without marking the intended box.
- Concerning the two open-ended questions, the teachers generally showed interest and seriousness in their responses. Based on the results obtained, the following points can be inferred:
- Teachers, with close percentages ranging between 92%, 60%, 76%, and 80%, emphasized the necessity of integrating the computer into teaching the Arabic language and its effectiveness in developing learners' self-confidence, enthusiasm for learning, and providing them with opportunities to showcase their talents and abilities.

- The necessity of using the computer is dictated by current educational realities, as integrating it into the teaching-learning process has become essential. The 60% rate regarding the effectiveness of computer-assisted lessons in building learners' confidence reflects, to some extent, the educational tool's role in fostering this trait among learners. It thus becomes a substantial support for their productivity and love of learning. However, this percentage also reveals that a portion of teachers remains unaware of the computer's active role in the overall learning process and its prospective applications.
- As for the computer's contribution to solving educational problems, the rates of 76% and 80% serve as evidence of teachers' acknowledgment of this role. The computer enhances memorization capacity and helps overcome difficulties learners face in solving problems and exercises. This is due to the features of computer systems, such as auditory cues that help anchor ideas in memory, and the interactive aspect that enables learners to demonstrate their abilities and talents.
- The main conclusion drawn from this analysis is that the computer has become an urgent necessity imposed by current technological developments. Its primary role in learning is to attract learners to lessons with enthusiasm and curiosity, making the learning process smoother, more dynamic, and engaging—far from the monotony and routine of traditional methods.
- The legitimacy and importance of implementing computer-designed Arabic lessons were further supported by close response rates from teachers on the second axis of the questionnaire (64%, 72%, 60%, 76%, 46%, and 40%).
- The 64% figure indicates that computer-designed lessons are easily accessible. Teachers suggested that this could be achieved by submitting a project proposal to the subject inspector, who could facilitate agreements between Arabic language teachers and computer engineers to design such lessons, or through individual collaboration between a teacher and an engineer. This reflects the teachers' willingness to apply this method of lesson delivery to foster learners' autonomy in learning.
- Most educational institutions expressed their desire to adopt this type of lesson, as reflected by 72% of teachers' responses. This percentage depends on the nature of the institutions involved and the equipment available to them. Moreover, computer-assisted lessons enrich learners' linguistic repertoire through auditory stimuli, as listening plays a crucial role in consolidating structures in learners' minds. This helps them acquire new vocabulary that enhances their lexical competence through the lesson content. Teachers also praised the presentation method, which significantly contributed to reinforcing vocabulary retention among learners.
- Teachers expressed a desire to teach using computers, focusing on one of its key advantages—its element of engagement—as well as its status as a modern educational tool. This was confirmed by 76% of teachers' responses, reflecting their inclination toward computer-assisted instruction, which saves time and effort while making lessons more stimulating and engaging.
- This type of lesson also reveals learners' confidence, mistakes, talents, and readiness. The teachers' questionnaire results (40%, 28%, 32%) correspond to this observation, as the options under this question align within a common framework, resulting in close percentages. This indicates that each teacher has a specific viewpoint but generally considers computer-assisted lessons to help identify learners' mistakes. Since the computer operates based on user-input commands according to the programmed system, it alerts learners to their errors through indicators or stimuli designed to draw attention and correct mistakes.
- Furthermore, such lessons disclose learners' talents and readiness, as reflected by 32% of teachers' responses. This percentage illustrates teachers' views that these lessons reveal learners' creativity through how they operate the program, navigate between elements, and manage interaction—skills that also depend on the way the lesson itself is designed on the computer.

Conclusion

✓ Computer-Assisted Language Learning (CALL) contributes significantly to enhancing the learner's linguistic competence, and teachers demonstrate a readiness to adopt this educational method, given that the computer possesses the characteristics that justify its integration into the educational field.
✓ The computer helps learners consolidate their acquired linguistic competence and address their most pressing linguistic difficulties.
✓ It saves time and is considered one of the essential and indispensable tools in the educational process.
✓ The effective and positive use of the computer, as an engaging and motivational medium, necessitates improving learners' proficiency levels.
✓ The computer has become a necessity in our modern era, provided that learners develop a positive attitude toward its use so that it remains a blessing rather than a burden. As an attractive tool, it facilitates learners' acquisition of new knowledge, thereby contributing to their academic advancement.
✓ It enables a shift in the way lessons are presented, transforming learners from passive recipients of information into active and participatory agents in the learning process.
✓ It redefines the teacher's role within the new educational environment, in light of the integration of a modern instructional medium endowed with specific pedagogical features.
✓ Learners in Algerian schools have shown receptiveness toward this type of modern teaching method.

Recommendations

At the conclusion of this study, a set of recommendations can be proposed:

✓ The necessity of fostering coordination among linguists, educators, and computer engineers to design an Arabic language program tailored for Computer-Assisted Language Learning (CALL).

✓ The need to equip educational institutions with computer technology to create an environment conducive to the application of such instructional methods.

✓ The importance of organizing training courses for Arabic language teachers in the field of information technology, enabling them to acquire sufficient knowledge and skills to design and deliver computer-based lessons effectively.

Ethical Considerations. This study was conducted in accordance with accepted ethical standards for educational research. Participation in the field investigation was voluntary, and informed consent was obtained from all participants prior to data collection. Respondents were assured of anonymity and confidentiality, and no personally identifiable information was recorded or disclosed. The research involved no experimental intervention, manipulation, or risk to participants, and all data were used exclusively for academic and scientific purposes.

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