

***Reality and impact of the use of advanced technology in Algeria's education sector***

***Field study on a sample of education professors in the state of M'sila***

FAYCEL BIBI

University of Mohamed Boudiaf M'sila, Algeria

[Faycel.bibi@univ-msila.dz](mailto:Faycel.bibi@univ-msila.dz)

**Received:** 29 / 01 / 2024

**Accepted:** 13 / 03 / 2024

**Published:** 30 / 04 / 2024

**Abstract:**

By entering the advanced technology of various walks of life, it has radically changed its pattern at all levels, One area where technology has made a qualitative shift is education. In entering the field of education, the latter has produced many positive aspects that have benefited science and learners in educational institutions and Algeria among the countries that have introduced modern technology into education. In order to know the effectiveness of these modern tools on the system of education in general, this study was a reality and the impact of the use of educational technology in educational institutions and we followed the survey curriculum. data collection tool ", which relied on the questionnaire as an essential tool for data collection, the results of which included: Education technology is a successful model in the educational sector, as well as modern technology helps professors develop and develop their teaching skills by streamlining the communication process between the professor and the pupil.

**Keywords:** Technology, System, Education, Algeria, Impact, Impact

## I. INTRODUCTION

Over the past two decades, the world has witnessed successive and rapid technological developments in terms of how to access information in various fields and disciplines and this development has led the humanitarian sectors to move from traditional to modern modus operandi with minimal effort and cost as well. This paradigm shift has diversified in the fields of economic, social, cultural and educational life at the level of the technology world making human life easier than before and safer, technology has not excluded the field of education either. Where forms of telemedicine evolved and benefited from modern technical tools and in turn expanded the area of learners without time or space restriction, This rapid technological development has also led to the production of many knowledge manufacturing mechanisms and many technological programs that have been interested in educational institutions technology ", so that technology takes care of knowledge frameworks and develops the skills to handle tools in the appropriate way, Attention has increased in the use of education technology tools because they help students access some information in a manner commensurate with their mental abilities and thinking through several programs. The use of educational technology by educational institutions has supported research into scientific phenomena using a variety of tools. And data collection models and techniques, as well as experimentation and multiple methods of exploring different concepts and phenomena. Education technology has become particularly important in the field of education and learning, as education has been the key to the modernization and modernization of all societies owing to the challenges faced in the educational process, which have led educational institutions to engage in more active and effective development and renewal in order to accommodate all variables and meet contemporary challenges.

This has led us in this study to try to see the impact and capabilities of this type of education technology in bringing about change in the field of education and its impact on the quality of education in educational institutions. It is on this basis that this study seeks to answer the following key question: What is the reality and impact of the use of educational technology in Algerian educational institutions within Algeria's mandate?

We followed the survey curriculum in this study, where the impact of using these modern methods was studied by drawing on the questionnaire as an essential tool for collecting data to obtain the necessary data from the sample study, as the best technique for this type of study, especially with regard to evaluation and expression of opinion on the subject. We distributed 430 forms to professors from different educational stages in the liquid state.

This study seeks to:

- Identification of the advanced technology offered in Algerian educational institutions, the institutions of the state of M'sila as a model
- Determination of the degree of use of educational technology in Algerian educational institutions, the institutions of the State of M'sila as a model
- Identification of obstacles to access to educational technology in Algerian educational institutions, in the form of the State of M'sila

## First: What is education technology?

### 1\_ the concept and evolution of education technology:

Before delving into the concept of education technology, it must be defined which is the key to the subject:

Technology (technologie) is an ancient Greek word, derived from two words: "techne" means a technical skill and "logos" means a study or science, so the term "technology" means the organization of technical skill (الفريجات، صفحة 21، 2014).

An "Fakhri Akil" definition of the word technology is the proper scientific use or exploitation of available materials or potential

#### 1.1: Education Technology:

So much disagreement about the definition of the term "education technology" that another term of education has not received such a disagreement from researchers called "education technology", "education technology" or "teaching techniques", everyone who has known it according to his competence and his field of use, we provide the most famous of these definitions:

**UNESCO** definition "is a systematic direction for the design, implementation and evaluation of the educational process as a whole, depending on specific goals emanating from the results of research in education and human communication, and using human and non-human resources to make education more effective or to achieve better and more effective learning (الحيلة، صفحة 24، 2000).

The American Association for Educational Communications and Technology (aect) (1977) identified educational technology as a complex process involving people, actions, ideas, tools and organization to analyse, manage, implement, evaluate and manage all problems related to human education (العاطي، صفحة 10، 2014).

Dr. "Mustafa Felateh" knew the technology of education by saying, "They are the practical and scientific techniques on which the teacher relies to do his professional duty better (الفريجات، صفحة 9، 2014.)

"Charles Hoban" defines it as: an integrated organization comprising man, machine, ideas, opinions, working methods and management so that it operates within a single framework.

"Clark": As the process of utilizing modern inventors and industries in the field of education.

"Briggs" defines it as consisting of three elements:

- Educational processes
- Tools, hardware and software used in the educational process
- Process interaction with devices and tools (سلامة، 2007، الصفحتان 109-108).

"Hossain al-Tobji": It is a way of thinking as well as a method of working and a method of solving problems that depends on a systematic scheme or system method to achieve specific educational goals (سلامة، تصميم وانتاج الوسائل التعليمية للمكتبات وتكنولوجيا التعليم، 2007، صفحة 11).

It was also defined as: all methods, tools, materials, devices and regulations used in a particular education system intended to achieve previously defined educational goals and aimed at developing and enhancing the effectiveness of the educational system (عطي، 2008، صفحة 25).

The various concepts and terminology of education technology constitute an obstacle to the formulation of the final definition, but it is clear from these definitions that:

- Education technology is the result of the advancement of science and its applications in various fields in the form of tools that help education achieve its goals and solve many learning problems.
- Education technology means quality and improvement to develop the learning process.

- The ultimate goal of education technology is to create learning.
- Education technology is linked to educational development functions in terms of working methods and analysis of educational problems.

## **2. Historical development of the term "education technology":**

The concept of education technology has been sequenced from classical to visual and audiovisual education, and the visual and audiovisual industry has been credited with introducing the concept of alternative communication in education, where it has had a great dollar in highlighting and clarifying the conceptual concept of education technology, so that the focus is on the transfer of information from source to future. Behavioural science has also had an impact on education technology, starting with the process of immediate promotion and application in programmatic education and other behavioural theories (58)، (زاهر، 1999، صفحة)، and we try to summarize its development at the following stations:

**First Phase:** Visual education to audible education to education through all senses and in this station we note that the focus was on targeting the individual's and the learner's visual and audible sensory potential (sight and hearing).

**Second Phase:** Educational means as teaching aids, I have called the means of explanation or audiovisual aids because teachers have used them in their teaching but to varying degrees depending on their understanding and importance to them, some of whom have not used them and relied on the way in which they learn and are established because they believe that they are best (36)، (منصور، 1989، صفحة) regarded as perfectionist and secondary teaching.

**Third Phase:** The educational medium is an active medium between the teacher (consignor) and the learner (recipient). At this stage, effective communication takes place, and the means of education have an important role to play, and its absence is a disruption to the process of scientific communication if it is not transmitted.

**Fourth Phase:** Systems are a set of interrelated and interactive elements that work together to achieve a specific goal, that is, educational means are part of an integrated set of elements in the educational process. They are used to achieve educational goals. They are part of the educational system called educational technology (أحمد، 2008، صفحة 21).

## **3. Components and components of education technology:**

### **A. Components of education technology:**

The operational composition of education technology, based on a set of definitions to which we have referred earlier and others, leads us to believe that it is difficult to determine the mechanisms for the work of this field. This means the mobility and activity of the field, which is recognized by many researchers and organizations interested in the field, such as the Educational Communications and Technology Society of the United States. (AECT), the organization designated in the field of education technology and entrusted with the tasks of research and development, so we will consider identifying the components of the field based on its definition of education technology. In addition to the other set of definitions mentioned above, through the Educational Communications Society's conception of educational technology, the field consists of five basic components, namely, development design, use, management and evaluation, highlighted as follows:

**Design:** a set of procedures or processes dealing with the planning and implementation of the educational process, which is the process of defining learning conditions and aims at awaiting

educational strategies and products (الحيلة، 2000، صفحة 58) . The design contains four elements (زيتون، 2004، الصفحات 26-27) :

- Design of educational systems
- Media Message Design
- choosing educational strategies
- Study the characteristics of the learner

**Development:** implements and is interested in translating design specifications and characteristics into new teaching materials, devices, tools or learning sources (الشهادي، 2017) (صفحة 82) , and includes four elements:

- Production of printed and photographed materials (books, still images, stickers....)
- Production of audiovisual materials (is the educational material based on viewing and listening).
- Integrated multimedia production (interactive educational software).
- Innovate new computer-assisted methods such as (training and practice, private education, simulation of educational games) (محمود، 2012، صفحة 23) .

**Usage:** A method of presenting materials and activities to the learner, interacting with them for learning, as well as providing guidance for the use process and evaluating the usage results.

The use includes:

- Use of educational means
- Dissemination of technological innovations
- Implementing innovation and integrating it into the structure of the educational institution.

(الشهادي، 2017، الصفحات 82-83)

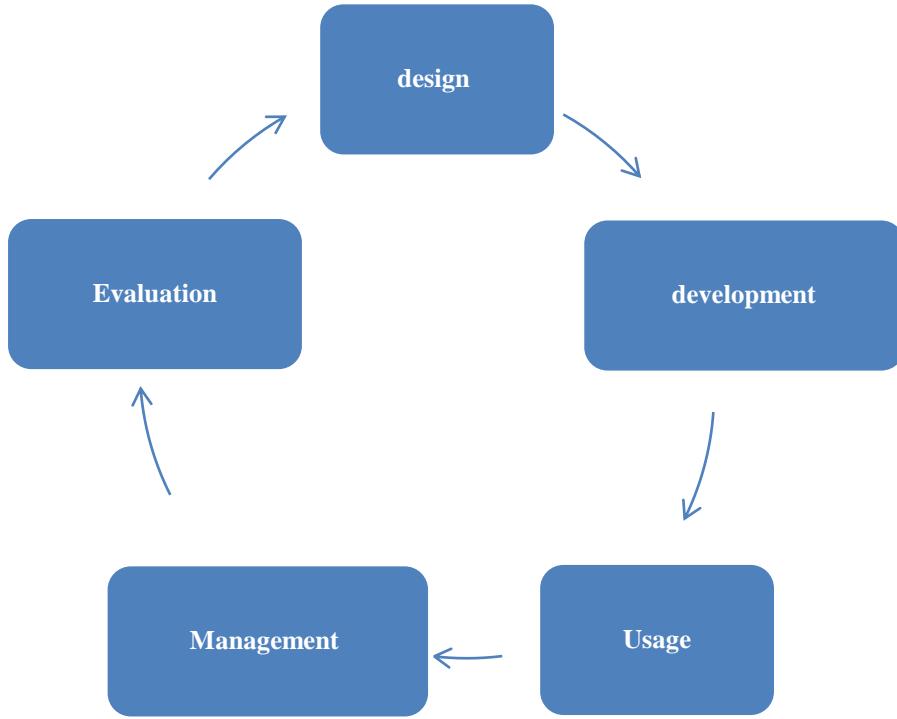
**Management:** The Department includes control of educational techniques through planning, organization, guidance, coordination, leadership, motivation, evaluation or control, and contains five components: (مهدى، 2015، صفحة 36)

- Management of educational design projects
- Management of educational message transmission systems
- Information Management
- Time Management
- Management of learning resource centres

**Evaluation:** The process of determining the efficiency of the learning process - learning as a whole or part of it, such as a program, product, objective, process, or curriculum, against specific criteria. The evaluation includes four components:

- Problem Analysis
- Benchmarking of the reference
- Interim Evaluation Procedure
- Final calendar procedure

❖ These components integrate and interact on two levels: theory and practice, as illustrated in the following figure:



**Figure 01: Nature of the relationship between the components of education technology**

### B. Elements of education technology:

According to "Charles Hoban's" definition of elements of education technology:

"Education technology is an integrated organization with the following components: human, machine, ideas and opinions working methods so that they all operate within a single framework."

**Human:** being is an important element in the educational process. Education cannot be done without human beings. It is the teacher, learner and researcher. Man is the goal of the educational institution to communicate its goals and plans and to develop it to keep pace with development on this earth (الشهادي، 2017، صفحه 79).

**Machine:** One of the features of this era is the control of the machine over all affairs of life. It is at home, at school, at work and on the street. It makes human beings short of time, effort and money.

**Thoughts and opinions:** There must be opinions and ideas that make the machine achieve its goals, help disseminate information, or achieve the goals that man seeks to reach.

**Business methods:** The diverse working methods used by both human and machine are things that need to be switched, changed and developed. This continuous development is one of the most important features of technology.

**Management:** It is an important element. It must be far from traditional management (order and termination). Its role is significant in examining all the factors in this methodological framework in devising methods and regulations governing the functioning and organization of work so as to ensure an adequate working environment in all the preceding components and to fulfil their role and objectives in a highly efficient manner (محمود، 2012، صفحة 11).

As already stated, only the interaction of the former elements combined with one another and united in the application of education technology can be done as required, leading to the achievement of the educational system's goals, speed and accurate and easy delivery of work.



**Figure 02: Integration of elements of education technology**

### C. Functions of education technology:

We can define the functions of education technology by (كاسي، 2022، الصفحات 7-8) :

- Planning educational systems and related educational means systems, ways of teaching them and the goals we want to achieve in the light of the necessary human material possibilities.
- Develop the necessary physical and human capabilities to manage and implement these systems and provide them with knowledge sources.
- Continuous assessment of the extent to which these systems are achieving and improving the goals set.
- Help solve some contemporary educational problems such as crowding classrooms. (الشهادي، 2017، صفحة 86)
- Contributing to some challenges such as: the multiplier growth of information and multiple sources of knowledge.

Fox and Kroll referred to four education technology jobs: (الحيلة، 2000، صفحة 51)

- **Excitement and motivation:** all forms of education technology play an important and outstanding role in stimulating students' interest and motivation in dealing with the subject before them, and not distracting them
- **Provision of information :** Education technology contributes to the presentation of scientific material information commensurate with the teaching method and the presentation of information planned by the teacher
- **Function Guidance:** Education technology is not limited to motivating learners and providing information but can contribute to guiding learners in two basic intellectual and physical forms.
- **Organizational function:** The organizational function of education technology achieves the economic aspect of the learning process by obtaining the best results at the lowest material or time cost where education technology works to save effort and shorten time.

#### **4. Foundations and foundations of education technology:**

One of the most important foundations and foundations of education technology is: (السعيد، 2017، صفحات 27-28)

- The role of technology is directly linked to the development of teaching and learning processes, the purpose of which is to eliminate diverse and renewed problems of education.
- Education technology is a science that combines theoretical and applied, which is what is selected in many sciences or difficult to combine.
- Education technology is an independent field with its rules, origins, ethics, responsibilities and functions.
- Application of a structure of structured science and knowledge related to the learner, the process of education and the sources of learning. This structure is derived from behavioral, psychological, pedagogical, communication and information sciences and other relevant.
- Use and use learning sources for learning so that the interaction between the learner and those sources emphasizes their individuality and activity during the learning process.
- The use of the systems' entrance, which involves the pursuit of logical, interconnected, reviewable and modifiable steps.
- Identify educational objectives in a procedural way that can be measured, ensure that they are achieved and achieve more learning that is effective. (الشهادي، 2017، صفحة 85)

#### **5. Pros and cons of education technology:**

##### **5.1. Pros of education technology:**

"Positive" means the importance, usefulness or usefulness of the educational process.

**First:** Improving the quality and effectiveness of education: (سلامة، تصميم وانتاج الوسائل التعليمية للمكتبات وتكنولوجيا التعليم، 2007، صفحات 123-124)

This improvement results from:

- Solve the problems of crowding classes and lecture rooms;
- addressing the shortage of educationally qualified teaching staff;
- Combating illiteracy, which is an obstacle to development in its various fields;
- Teachers' training in the preparation of appropriate goals, teaching materials and teaching methods;
- In line with the modern educational outlook that considers the learner to be the focus of the educational process.

**Second:** It leads to consulting students' interest and satisfying their needs for learning. There is no doubt that various educational methods such as journeys, models and educational films provide a variety of benefits, each of which takes into account the achievement of its objectives and raises its interest.

**Third:** It leads to the remoteness of the verbal use of the lesson, which does not have the same connotation as the teacher. (الحاري، 2017، صفحة 20)

**Fourth:** Education technology has increased pupils' positive participation in the learning process.

**Fifth:** It leads to the development of the ability to meditate and creative scientific thinking in reaching out to problem solving and arranging ideas in an acceptable format.

**Sixth:** Today's goal of education aimed at developing new trends and modifying behaviour has been achieved.

##### **5.2. The disadvantages of education technology:**

Educational technology also has pros and cons that limit its use, among other things: (رباعي، 2015، صفحة 13)

- Poor teacher-student interaction

- Attention to the cognitive aspect and feeling bored and overwhelmed by the use of these technological means
- Poor communication with others and frequent breakdowns;
- The most practitioners of educational technology are technicians and do not refer to educational professionals
- Fear of hacking privacy and confidentiality of information if designing special tests; (ربيع، صفحة 14، 2015)
- There is no follow-up by these companies to train teachers and administrators to see the latest technical developments in this field.

❖ **The role of modern technological means in achieving the objectives of the educational system:**

There is no doubt that the use of technological means in educational work generates many benefits for educational attainment of value and high efficiency. These benefits can be shortened by: (تفقيب، الصفحات 195-196، 2021)

- Help promote sensory cognition
- Help increase understanding or perception
- Help raise a pupil's ability to transform knowledge from one form to another as needed or in an educational situation
- Develop pupils' positive tendencies through experiences, visits, trips, films and audio and television recordings
- Developing the desire and interest to learn and accept the subject
- Increase verbal fluency and strength by continuously hearing films, audio recordings and additional readings required.
- Developing pupils' creative intellectual or procedural abilities. (محمودي، صفحة 184، 2015)

**Table No (01):** shows the contribution of e-learning technology to increasing the efficiency of the educational process.

Variable	repetition	percentage
<b>repetition</b>		
I strongly agree	210	48.84%
I agree	200	46.51%
Neutral	0	0%
I strongly disagree	0	0%
I don't agree	20	4.65%
<b>Total</b>	430	100%

Source: Author Faycel Bibi

It is clear from the table showing the contribution of e-learning technology to increasing the efficiency of the educational process. We note the largest percentage represented in I strongly agree with an estimated 48.84% and I agree with an estimated 46.51%, followed by a category I disagree with an estimated 4.65% and finally the two categories I disagree strongly and impartially education professors agree with the contribution of e-learning technology to increasing the efficiency of the educational process because it is an urgent need necessitated by today's conditions, local variables and global challenges, and as an intermediary between teacher and teacher and of great importance in the present era of globalization.

**Table No. (02):** Teachers' Opinion on the Contribution of Tools and Information Provided by Education Technology to Pupils' Evaluation.

Variable	repetition	percentage
<b>repetition</b>		
I strongly agree	140	32.56%
I agree	200	46.51%
Neutral	30	6.98%
I strongly disagree	20	4.65%
I don't agree	40	9.30%
<b>Total</b>	430	100%

Source: Author Faycel Bibi

The table shows the teachers' opinion on the contribution of tools and information provided by education technology to the pupils' assessment process. The largest proportion is in the category I agree with an estimated 46.51%, Then followed by a category I strongly agree with an estimated 32.56%, and then a category I disagree with an estimated 9.30%, Then the two categories in order are neutral and I disagree strongly, close to 6.98% for a neutral category and 4.65% for a category I disagree strongly. This is due to the fact that these tools and information are a source of facilitation of the educational process between the professor and the pupils and help to develop appropriate, fair and effective procedures for assessing the pupil and identifying the knowledge they have acquired.

**Table No. (03):** Education Technology's Contribution to Shortening Time for Many Tasks

Variable	repetition	percentage
<b>repetition</b>		
I strongly agree	290	67.44%
I agree	120	27.91%
Neutral	0	0%
I strongly disagree	20	4.65%
I don't agree	0	0%
<b>Total</b>	430	100%

Source: Author Faycel Bibi

It is clear to us through the table showing the contribution of technology education shorten the time to accomplish a lot of tasks. The highest percentage was in a category that I strongly agree with, where it was estimated at 67.41%, Then followed by a category I agree with an estimated 27.91%, and then a category I disagree strongly with an estimated 4.65%. In both categories, I disagree and impartial, Arris' secondary professors agree that education technology contributes to shortening time to accomplish a lot of tasks due to the availability of information with high accuracy and indefinite time.

**Table (04):** Professors' opinion on what education technology is a successful model in the educational sector.

Variable	repetition	percentage
<b>repetition</b>		
I strongly agree	190	44.19%

I agree	190	44.19%
Neutral	30	6.98%
I strongly disagree	0	0%
I don't agree	20	4.65%
<b>Total</b>	<b>430</b>	<b>100%</b>

Source: Author Faycel Bibi

It is clear to us from the table showing the teachers' opinions on education technology as it is a successful model in the educational sector. Where I was higher in the category I agree and I strongly agree with an estimated 44.19%, Then followed by the neutral category at an estimated 6.98%, and then I disagree at an estimated 4.65%. When I disagree strongly, the consent of the teaching professors is due to the fact that education technology is a successful model in the educational sector for the multiplicity of features and pros it offers to keep abreast of the evolution of the age, but it supports and contributes to the progress of the educational process in a simple and innovative way. Those who disagree are due to the disadvantages affected by the pupil and the teacher.

**Table No. (05):** Yobe's Opinion on How Modern Technological Tools Can Help Develop and Develop His Teaching Skills.

Variable	repetition	percentage
<b>repetition</b>		
I strongly agree	230	%53.49
I agree	170	%39.53
Neutral	20	%4.65
I strongly disagree	10	%2.33
I don't agree	0	%0
<b>Total</b>	<b>430</b>	<b>%100</b>

Source: Author Faycel Bibi

It is clear to us from the table above which shows the opinion of the professors on the extent to which technological means help to develop and develop his teaching skills. The highest percentage in the category I strongly agree with is an estimated 53.49%, Then followed by a category I agree with an estimated 39.53%, and then a neutral class of 4.65%. And then I don't strongly agree at an estimated 2.33%, and you don't agree when I don't. Most professors agreed that modern means of technology help them develop and develop their study skills due to the advantages of this modern technology and to the current era of globalization.

**Table No. (06):** Shows the percentage of the learner's website assistance to diversify his research methods.

Variable	repetition	percentage
<b>repetition</b>		
I strongly agree	200	46.51%
I agree	210	48.84%
Neutral	20	4.65%

I strongly disagree	0	0%
I don't agree	0	0%
<b>Total</b>	<b>430</b>	<b>100%</b>

Source: Author Faycel Bibi

The above table shows the percentage of help of the learner's websites on the diversity of ways of searching for information. The highest percentage was in a category I agree at an estimated 48.84%, and then a category I strongly agree at an estimated 46.51%. It is followed by a neutral category of 4.65%, and finally it is not in a category that I disagree strongly and disagree with. In other words, most of the interrogators all agreed that websites help the learner diversify his methods of research, This is due to websites providing information in a short time free of charge for different people and these websites contain educational materials that promote the learning process, It is one of the means to support the educational process, to provide him with various information anytime, anytime, anywhere, It can re-study and record the lesson, and its cost is low compared to traditional education.

**Table No. (07):** Indicates the contribution of technological media employment (computer, digital chalkboard, data show, Acoustic dictionaries)

<b>Variable</b>	<b>repetition</b>	<b>percentage</b>
	<b>repetition</b>	
I strongly agree	230	53.49%
I agree	170	39.53%
Neutral	20	4.65%
I strongly disagree	0	0%
I don't agree	10	2.33%
<b>Total</b>	<b>430</b>	<b>100%</b>

Source: Author Faycel Bibi

It is clear to us from the table above, which shows the contribution of the use of technological media in giving the learner as many alternatives and solutions as

possible in educational attitudes Where the highest percentage is in a category I strongly agree with an estimated 53.49% then followed by a category I agree with 39.53% then a neutral class with 4.65% then a category I agree with 2.33% and finally I disagree strongly with no, That is, professors at all levels of education strongly agree that technological media contribute to giving the learner as many alternatives and solutions as possible in educational attitudes because technological media have multiple advantages in preserving and stabilizing scientific information in the minds of pupils for a long time as well as keeping pupils and professors in a state of suspense to perform their respective duties to the fullest.

#### **General results:**

- Education technology contributes to greater coordination between the parties in the educational process
- E-learning technology contributes to increasing the efficiency of the educational process
- Education technology contributes to shortening time to accomplish a lot of tasks
- The majority of interrogated professors consider that education technology is a successful model in the educational sector.
- Most of the interrogated professors are interested in some kind of education.
- Modern technological methods help professors develop and develop their teaching skills.

- Education technology helps streamline the communication process between professor and pupil.
- Education technology helps achieve scientific honesty in the transfer and dissemination of knowledge.
- The Foundation does not hold training sessions on how to use education technology to disseminate and share knowledge.
- The use of education technology facilitates the exchange of ideas and opinions. between different disciplines in the school.
- Education technology helps spread knowledge culture among pupils.
- Websites help learners diversify their search methods for information.
- Using technological media to give learners as many alternatives and solutions as possible in educational situations.
- Sound dictionaries develop language fluency by requiring learners to produce different synonyms at a specific time.

❖ **List of sources and references:**

ابتسام أحمد طه أبو ربيع. (2015). **مستوى ادراك مديرى المدارس الابasية الخاصة لأهمية تكنولوجيا التعليم وعلاقته بمستوى توظيف المعلمين-رسالة ماجستير**. عمان، عمان الاردن: جامعة الشرق الاوسط.

أحمد زاهر. (1999). **تكنولوجيا التعليم كفلسفة ونظام**. القاهرة، القاهرة مصر: المكتبة الاكاديمية.

أحمد حامد منصور. (1989). **تكنولوجيا التعليم وتنمية القدرة على التفكير الابتكاري (الإصدار 2)**. القاهرة، القاهرة مصر: دار الوفاء للنشر والتوزيع.

حسن الباتح محمد عبد العاطي. (2014). **تكنولوجيا تعلم ذوي الاحتياجات الخاصة والوسائل المساعدة**. الاسكندرية، الاسكندرية مصر: دار الجامعة الجديدة.

حسن ربيعي مهدي. (2015). **تكنولوجيا التعليم والتعلم**. عمان، عمان الاردن: دار المسيرة للنشر والتوزيع.

خنيش السعيد. (2017). **تكنولوجيا تعليم اللغة العربية في الجامعة الجزائرية دراسة وصفية تحليلية في الوسائل والتقنيات المعتمدة في التعليم**. جامعة باتنة 1، باتنة الجزائر: جامعة باتنة 1.

شوقى حسانى محمود. (2012). **تقنيات وเทคโนโลยيا التعليم - معايير توظيف المستحدثات التكنولوجية وتطوير المناهج**. القاهرة: دار المجموعة العربية للتدريب والنشر.

عبد الحافظ سلامة. (2007). **الاتصال وเทคโนโลยيا التعليم**. عمان، عمان الاردن: دار اليازوري العلمية.

عبد الحافظ سلامة. (2007). **تصميم وانتاج الوسائل التعليمية للمكتبات وเทคโนโลยيا التعليم**. عمان، عمان الاردن: دار اليازوري العلمية.

عبد العي أحمد. (2008). **الوسائل التعليمية والتقنيات التربوية لتكنولوجيا المعلومات**. مصر، مصر: زهراء الشرق.

غالب عبد المعطي الفريجات. (2014). **مدخل إلى تكنولوجيا التعليم (الإصدار 2)**. عمان، عمان الاردن: دار كنوز المعرفة العلمية للنشر والتوزيع.

كمال عبد الحميد زيتون. (2004). **تكنولوجيا التعليم في عصر المعلومات والاتصالات**. القاهرة، القاهرة مصر: دار عالم الكتب للنشر والتوزيع.

محسن على عطي. (2008). **تكنولوجيا الاتصال في التعليم الفعال**. عمان، عمان الاردن: دار المناهج للنشر والتوزيع.

محضار أحمد حسن الشهابي. (2017). **مقدمة في الوسائل وเทคโนโลยيا التعليم**. عمان، عمان الاردن: دار اليازوري العلمية.

محمد تنقيب. (3 سبتمبر, 2021). دور تكنولوجيا التعليم في تحقيق أهداف المنظومة التربوية الجزائرية. *مجلة جسور المعرفة*, 7(3)، 196-195.

محمد دلاسي، نادية محمودي. (11 سبتمبر, 2015). واقع التعاون بين الاسرة والمدرسة من وجهة نظر الاستاذ الثانوي دراسة على عينة من الاساتذة بمدينة الاغواط جامعة الشهيد حمـه لـخـضرـ. *مجلـة الـدـرـاسـاتـ وـالـبـحـوثـ الـاجـتمـاعـيـةـ*(12)، صـفـحةـ 184.

محمد محمود الحيلة. (2000). *تكنولوجيا التعليم بين النظرية والتطبيق* (الإصدار 2). عمان، الأردن: دار المسيرة.

نجاة حسين وحياة كاسي. (15 مارس، 2022). *تكنولوجيا التعليم في الجامعة الجزائرية*. مجلة اللسانيات والترجمة (2)، الصفحات 7-8.

ياسمين محمد نول عبد الرزاق الحياري. (2017). *تقويم مقررات تخصص تكنولوجيا التعليم لمرحلة البكالوريوس في الجامعات الأردنية الخاصة من وجهة نظر الطلبة*. الأردن، الأردن: جامعة الشرق الأوسط.