

The Impact of Information and Communication Technology on Improving the Educational Process: A Field Study in Primary Schools in Theniet El Had, Tissemsilt Province

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Abstract:

This study aims to shed light on the role of information and communication technology through its various media, such as computers, the Internet, and electronic tablets, in improving the educational process in light of the digital revolution based on the world of knowledge. In our study, we addressed the theoretical aspects of both the phenomenon of information and communication technology and the phenomenon of the educational-learning process, and then devoted the research to the impact left by the use of technological media on the educational process according to the viewpoint of primary education teachers in the institutions constituting the field of study, using a descriptive analytical approach. We also concluded in our study that technological media have a positive impact on improving the educational process, with varying proportions.

Keywords: Technology, Computer, Internet, Educational Electronic Tablets.

JEL Classification: M15

Introduction:

Information and communication technology has recently witnessed remarkable developments and direct impacts of the digital revolution on the pattern of human life in all economic, social, cultural, and political fields. Indeed, all processes have become impossible to carry out without it, given its significant benefit in improving all human and administrative interactions. Given the increasing need of institutions of all types nowadays for technologies to acquire, store, employ, and share knowledge with all their stakeholders in order to achieve their objectives, especially their strategic ones, educational institutions have become obliged to keep pace with these developments and adapt their educational curricula to the requirements of the changes taking place. In this context, Algeria is among the countries seeking to develop the educational system in accordance with the modern revolution in order to improve the quality and standard of education. Among the efforts undertaken by the national government was connecting all institutions to Internet networks and increasing their flow rate, as well as introducing computers into administrative and educational work, establishing laboratories specifically for this purpose, and training

specialized teachers for this purpose. In addition, there is a genuine desire to improve all conditions of pupils' schooling, particularly primary education, as it is considered the basic foundation of socialization. The government has provided all educational institutions with electronic tablets and generalized their use at the national level in order to reduce the burden of carrying the schoolbag on the pupil.

Problem Statement:

Based on the foregoing, we arrive at the following research problem:

To what extent does information and communication technology contribute to improving the educational process in primary schools in Theniet El Had, Tissemsilt Province?

To further enrich the topic, we raise a set of questions as follows:

- Main Question:

Is there a statistically significant effect of information and communication technology on improving the educational process in the institutions constituting the field of study at the significance level $\alpha \leq 0.05$?

- Sub-questions: The main problem gives rise to a set of questions as follows:

ü Is there a statistically significant effect of computer technology on improving the educational process in the institutions constituting the field of study at the significance level $\alpha \leq 0.05$?

ü Is there a statistically significant effect of Internet technology on improving the educational process at the significance level $\alpha \leq 0.05$?

ü Is there a statistically significant effect of electronic tablet technology on improving the educational process in the institutions constituting the field of study at the significance level $\alpha \leq 0.05$?

Research Hypotheses: Based on the stated problem and the foregoing, we arrive at:

- Main Hypothesis:

There is a statistically significant effect of information and communication technology on improving the educational process in the institutions constituting the field of study at the significance level $\alpha \leq 0.05$.

- Sub-hypotheses: The main hypothesis includes a set of hypotheses formulated as follows:

ü There is a statistically significant effect of computer technology on improving the educational process in the institutions constituting the field of study at the significance level $\alpha \leq 0.05$.

ü There is a statistically significant effect of Internet technology on improving the educational process in the institutions constituting the field of study at the significance level $\alpha \leq 0.05$.

ü There is a statistically significant effect of electronic tablet technology on improving the educational process in the institutions constituting the field of study at the significance level $\alpha \leq 0.05$.

Objectives of the Study: The objective of this study is to:

ü Identify the phenomenon of information and communication technology.

- ü Identify the technological media (Internet, computer, electronic tablet) in the educational process.
- ü Identify the phenomenon of the educational process.
- ü Highlight the elements constituting the educational process.
- ü Explore interdisciplinary studies, such as the study of the relationships existing between information and communication sciences and language sciences.
- ü Investigate the extent of the impact of using information and communication technology on improving the educational process.

Research Method:

In our study, we relied on the descriptive method, which is based on defining the phenomena of information and communication technology and the educational process by addressing the concept, characteristics, importance, and various technological media, in addition to the elements upon which the educational process is based. As for the practical aspect, we developed a questionnaire as a data collection tool consisting of a section related to personal data, a section devoted to the first variable (information and communication technology), which is in turn divided into three technological media represented by the computer, the Internet, and electronic tablets, while the third section is devoted to the educational process. We also used the Statistical Package for the Social Sciences (**SPSS 22**) to analyze the data obtained and derive the information and results.

1- Conceptual Framework of Information and Communication Technology:

1-1- Definition of Information and Communication Technology:

The concepts associated with the phenomenon of information and communication technology are numerous due to the multiplicity of its elements, means, and fields of use. Some define it as “the totality of various means, tools, techniques, or systems that are employed to process the content or material intended to be conveyed through the process of mass, personal, or organizational communication, through which audio, visual, printed, or digital data are collected” (Allaoui, 2015, p. 237).

It has also been defined as “the technological ability to obtain, process, and exchange information for the purpose of making effective decisions” (Sahel & Boussetta, 2022, p. 174).

Information and communication technology also refers to all types of technology used to operate, transmit, and store information in electronic form. It includes computer technology, communication means, interconnection networks, and other equipment that are extensively used in communications (Meguizli, 2018, p. 172).

Based on the foregoing, a comprehensive concept of information and communication technology can be given as a combination of technological media used in knowledge-related processes, starting from the creation and formation of knowledge, then its storage, and ultimately its utilization and sharing with all stakeholders.

1-2- Characteristics of Information and Communication Technology:

Information and communication technology is distinguished from others by a set of characteristics, the most important of which are: (Djellab & Debdou ch, 2019, p. 18)

- **Time Reduction:** Technology makes all electronic locations adjacent; an example of this is the Internet, which allows everyone to obtain the information and data they need in a short time, regardless of their geographical location.

- **Increasing Productivity:** Information technology contributes to increasing productivity when it is used properly and effectively.

- **Flexibility:** The uses of information technology have multiplied due to the diversity of our needs for it. The simplest example is the computer, which we use in our daily and professional lives. It is a tool for writing and performing various complex operations, such as communication over long or short distances, etc. It also provides production with high efficiency, giving information technology considerable flexibility compared with a machine with limited uses.

- **Continuity:** This refers to being faster, smaller, and less costly, which are among the most important characteristics of information technology. It is characterized by continuous improvement in its speed and memory capacity.

By highlighting the most important characteristics of information and communication technology, it becomes clear that it is characterized by dynamism, continuity, processing speed, and the quality of its outputs.

1-3- Importance of Information and Communication Technology:

Since information and communication technology has invaded all fields and permeated all aspects of life, and has come to play an important role in communication and interaction while facilitating access to information, its importance is manifested in the following: (Mohammedi, 2022, p. 500)

- Information and communication technology contributes to economic development.
- Information and communication technology contributes to the flow of information and the promotion of transparency and accountability, thereby reducing errors and fraud.
- Providing better services to employees and users, which positively affects organization.
- Reducing the costs of production complexity and eliminating the effect of the competitive advantage resulting from economies of scale.
- Making communication faster and more efficient and at a lower cost.
- Providing organized processes and simplified procedures for resource management, thus achieving greater and better effectiveness.

1-4- Information and Communication Technology Tools:

The tools of information and communication technology are numerous and diverse. Whenever the field differs, the means also differ. In the field of education, for example, we find tools such as computers, the Internet, and electronic tablets, which help develop the educational process and determine the effectiveness of education.

- **Computer:** The computer is considered one of the most prominent technological media for data processing and is defined as “a machine or electronic device capable of receiving data or information, storing and processing it, in order to obtain the required results quickly and accurately. It has multiple educational, pedagogical, training, economic, and military

uses. The computer also uses other technologies such as video, sound, images, movement, flashing, and animation. As for the educational computer, it is ‘the process of introducing the computer into education, which means raising the level of education through the computer, benefiting from it, and providing educational subject programmes and their requirements, so that they can be used and employed effectively in the educational process’” (Beliredouh, 2020, pp. 153–154).

- **Internet:** The Internet is considered the most famous interactive information medium. It is a huge network containing a large number of public and private information networks connected to one another. It basically consists of equipment, communication software, and human personnel. The Internet network began during the Cold War, but until the late 1980s it was restricted to the Pentagon (the U.S. Department of Defense). However, it soon spread among academic university circles through the network of knowledge that could be accessed or through the use of electronic mail. After that, such networks became widespread in an unlimited number of websites and service sites of a purely cultural, political, and commercial nature” (Aoufi & Omrani, 2012, p. 34).

- **Electronic Tablets:** Tablet devices are an intermediate form between laptop computers and mobile phones. They represent a middle solution between the two. Many of us find the size of a mobile phone screen insufficient for browsing or watching films, while others find laptops large when moving them from one place to another or somewhat heavy. Hence, the idea of tablet devices emerged as a middle ground between the two” (Guerad & Bouloudat, 2022, p. 193).

2- Conceptual Framework of the Educational Process:

2-1- Definition of the Educational Process:

The educational process refers to “the procedures and activities that take place inside the classroom and that aim to enable learners to acquire theoretical knowledge, practical skills, or positive attitudes. It is a cognitive system consisting of inputs, processing, and outputs. The inputs are the learners; processing is the coordinating process of organizing, understanding, and interpreting information, identifying relationships between them, and linking them to previous information; while the outputs are represented by producing competent students and learners” (Bouren & Kacemi, 2023, p. 455).

2-2- Elements of the Educational Process:

The educational process consists of three central and main elements, which are considered its important foundations: (Bouren & Kacemi, 2023, pp. 455–456)

- **Teacher:** The teacher is considered the fundamental pillar of the success of the educational process, as he or she is a person trained and directed towards education. The teacher is considered the **محور** of the educational message or the most important pillar of its success. Regardless of how comprehensive the textbook may be, it will not achieve the intended objective if it is not taught by a competent teacher.

- **Learner:** The learner is considered the **محور** of the educational process, on the basis of which objectives are developed and the subject matter, educational activities, teaching methods, and necessary means that correspond to his or her intellectual and psychological characteristics are selected. It should be noted that the learner in the traditional approach has

no role in the educational process, except receiving the information dictated to him or her to memorize it for the purpose of recalling it at the time of examination. The new curriculum approach works to involve the learner in the responsibility of leading and implementing the learning process.

- **Educational Curriculum:** The educational curriculum represents a set of educational, social, cultural, physical, artistic, and scientific experiences that the school plans and prepares for its students inside or outside the school so that they can learn them with the aim of acquiring certain patterns of behaviour or modifying or changing other patterns.

2-3- Functions of the Educational Process:

The functional system of the educational process consists of the role of all the constituent elements in conveying knowledge from its source to the learner according to a specific setting and context, and these functions are represented in the following (Ben Yamina, 2017, p. 160):

- **Diagnostic Function:** This is carried out by providing the necessary knowledge about the facts related to all the elements constituting the educational process, by collecting and analyzing facts and attempting to arrive at general judgments and laws that explain these facts and phenomena and clarify the relationships and mutual effects between them.

Predictive Function: This is carried out through understanding the relationships and mutual effects between the various educational facts and phenomena, understanding the factors and consequences resulting from educational activities by formulating the general trends of the activity in order to determine the necessary formulas that lead to the anticipated outcomes of the educational process in the future. If this is achieved, then the mental and intellectual processes in the field of use, for example, such as abstraction, perception, analysis, inference, establishing relationships, and perceiving the relationships between phenomena, show that phenomena do not suggest that the speaking subject invents his or her language in any way whenever he or she seeks to express himself or herself.

- **Technical Function:** The teacher's relationship with knowledge is one of investigation and inquiry into its concepts and characteristics, how it is constructed and validated, its relationship with curricula, and the extent to which it is compatible with the intellectual and cognitive abilities and aptitudes of learners. It also involves searching for mechanisms to adapt it so that it is at the level of learners, arousing their interests and satisfying their cognitive and emotional needs. This relationship is not limited to what has been mentioned; rather, it extends to exerting effort and striving to find the best means and methods for activating it and translating it into abilities and competencies among learners, because the aim of education is to achieve the totality of an individual's positive or negative responses associated with certain psychological and educational subjects or situations that are presented to him or her verbally (stimuli).

2-4- Objectives of the Educational Process:

Education is an educational process that guides thought and emotion and develops the generations of the nation so that they become qualified to perform their various tasks in life. The educational curriculum, with its important elements in the educational process and the foundations and components it encompasses, is important in its construction. The objective

can be expressed as: “an intention expressed in a sentence or a written (or unwritten) statement that describes a proposed change in the learner's behaviour. The objective may be short-term (immediate) or strategic and long-term (goal).”

As for the educational objective, its definition derives from the concept of education, which aims to bring about certain positive changes in the individual's behaviour, thought, or emotions. Accordingly, the educational objective becomes the intended change to be brought about in the learner's behaviour, thought, or emotions. The educational objective represents the behaviour to be learned by the learner, considering that behaviour as the intended educational outcome to be achieved at the end of the educational process. In this regard, the educational objective refers to the effect of the educational process on the learner's behaviour. Behaviour is the response produced by an individual in response to a stimulus, whether the response is overt, taking the form of an action or statement, or internal and covert. The stimulus may originate externally (from the teacher, for example) or internally from the student himself or herself (Al-Hayla, 2002, p. 70).

3- Field Study

3-1- Study Model: The study model can be illustrated as follows:

The study model consists of an independent variable represented by information and communication technology through its three media (computer, Internet, and electronic tablets), while the dependent variable is represented by the educational process, as illustrated in the following figure:

Figure No. (01): Study Model:

Information and Communication Technology

Educational Process

Source: Prepared by the researcher based on the study data.

3-2- Study Population, Sample, and Data Collection Instrument:

- **Study Population:** The population consists of all teachers employed in primary schools in the district of Theniet El Had, Tissemsilt Province.

- **Study Sample:** A purposive sample was selected, whereby thirty (30) questionnaires were distributed to teachers in primary institutions. Table (01) shows the number of questionnaires distributed and valid for statistical analysis.

Table No. (1): Study Sample:

No.	Primary School	Number Distributed	Number Valid for Analysis	Number Invalid for Analysis
01	El Ikhwa Bougattaf	18	18	00
02	Boudhiba Youcef	07	07	00
03	Djabouat Abdelbaki	05	05	00
Total		30	30	00

Source: Prepared by the researcher based on the outputs of the field study.

- Study Instrument:

After reviewing the literature and studies related to the topic, it was concluded that the best means of collecting data was the questionnaire. Therefore, we prepared a questionnaire and presented it to the sample members based on the following steps:

- A good understanding of the study variables and their dimensions in order to formulate a set of questions appropriate to the nature of the topic under consideration.
- Reviewing questionnaires related to the topic.
- Distributing the questionnaire to all members of the sample in order to collect the necessary data.

This questionnaire consists of two main parts. The first part contains personal data, while the second part contains the study questions. The latter was divided into four main sections, as follows:

- The first section represents the first independent variable concerning the technological medium of the computer (T1).
- The second section represents the second independent variable concerning the technological medium of the Internet (T2).
- The third section represents the third independent variable concerning the technological medium of electronic tablets (T3).
- The fourth section represents the dependent variable concerning the educational process (D).

Each section also contains four questions appropriate to the nature of the topic under consideration.

- Instrument Scale:

The five-point Likert scale was adopted to measure the study variables, with the weights presented in Table (03) below:

Table No. (2): Five-Point Likert Scale

Scale	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Weights	01	02	03	04	05

Source: Prepared by the researcher based on the five-point Likert scale.

These scores are used to determine the strength and availability of the response. Accordingly, the categories of the five-point Likert scale (class limits and class length) were determined as follows:

- The range is calculated as follows: $5 - 1 = 4$.
- The class length is calculated by dividing the range by the number of categories (options): $4/5 = 0.80$.
- The first category for the arithmetic mean values is from 1 to $1 + 0.80$, and the same applies to the remaining arithmetic mean values. Thus, the following table shows the method for interpreting the arithmetic mean categories.

Table No. (03): Standard Deviation Scale

Category 1 to 1.80	1.81 to 2.60	2.61 to 3.40	3.41 to 4.20	4.21 to 5.00
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Levels Strongly Disagree Disagree Neutral Agree Strongly Agree

Source: Prepared by the researcher based on the five-point Likert scale.

3-3 Statistical Analysis of the Data: This section involves analyzing the data obtained from the questionnaire results through:

- Validity and Reliability Test:

Table No. (04): Questionnaire Reliability Coefficient:

Reliability Statistics Cronbach's Alpha Number of Items

0.856 28

Source: Prepared by the researcher based on the outputs of the (SPSS) program.

From Table No. (04), it is clear that the Cronbach's alpha value equals (0.856) for all study dimensions, which is higher than the minimum acceptable level (0.6). These results indicate the following:

- The presence of credibility and reliability in the responses.
- Internal consistency among all questionnaire items.
- The formulated statements are appropriate to the nature of the topic.
- The results can be generalized to the study population.

- Analysis and Discussion of the Results:

- Definition and Estimation of the Study Model.

Table No. (05): Multiple Linear Regression Coefficients:

Model	Unstandardized Coefficients B	Standard Error	Standardized Coefficients Beta	T	Sig.
1 (Constant)	0.24	0.818		0.293	0.772
Computer T1	0.236	0.156	0.229	1.516	0.142
Internet T2	0.236	0.147	0.242	1.604	0.121
Electronic Tablets T3	0.408	0.132	0.469	3.088	0.005

Dependent Variable: Educational Process.

Source: Prepared by the researcher based on the outputs of the (SPSS) program.

The above table shows the nature of the study model representing the effect of information and communication technology through its three dimensions (computer, Internet, and electronic tablets) on the educational process. Through the statistical processing of the responses of the sample members, it became clear that the general direction of the study model represents a linear relationship. By calculating the standard error of estimation (0.427), which measures the dispersion of the values of the model variables around the regression line, the multiple linear regression model can take the following form:

D (Educational Process) = 0.24 (T0) + 0.236 (T1) Computer + 0.236 (T2) Internet + 0.408 (T3) Electronic Tablets

The estimated model of the relationship between information and communication technology and the educational process, which takes the values expressing the following:

- 0.24 represents the initial value of technology.

- The value 0.236 represents the amount of change in the educational process affected by a one-unit increase in the use of computers while keeping the other factors constant.
- The value 0.236 represents the amount of change in the educational process affected by a one-unit increase in the use of the Internet while keeping the other factors constant.
- The value 0.408 represents the amount of change in the educational process affected by a one-unit increase in the use of electronic tablets while keeping the other factors constant.

- Equations of the Study Variables:

Table (06): Equations of the Study Variables

Study Variables	Correlation Coefficient	Coefficient Determination	of Linear Model between Study Variables
Technology and Educational Process	67%	50%	$D = 0.24(T_0) + 0.236(T_1) + 0.236(T_2) + 0.408(T_3)$
Computer and Educational Process	38.3%	14.7%	$D = 2.163(T_0) + 0.359(T_1)$
Internet and Educational Process	38.6%	14.9%	$D = 3.133(T_0) + 0.377(T_2)$
Electronic Tablets and Educational Process	52.2%	32.7%	$D = 1.815(T_0) + 0.498(T_3)$

Source: Prepared by the researcher based on the outputs of the (SPSS) program.

From the preceding table, which illustrates the nature of the relationship between the independent and dependent variables of the study, the following can be observed:

- Regarding the simple linear relationship showing the relationship between the computer and the educational process, the correlation coefficient equals 38.3%, while the coefficient of determination has a value of 14.7%. Accordingly, it can be stated that the elements of the independent variable, computer, explain 14.7% of the dependent variable, namely the educational process, leaving a difference of 85.3%, representing the other variables not included in the model. This indicates that the educational process is affected by several variables. Therefore, the first sub-hypothesis is correct.
- Regarding the simple linear relationship showing the relationship between the Internet and the educational process, the correlation coefficient equals 38.6%, while the coefficient of determination has a value of 14.9%. Accordingly, it can be stated that the elements of the independent variable, Internet, explain 14.9% of the dependent variable, namely the educational process, leaving a difference of 85.1%, representing the other variables included in the model, indicating that the educational process is affected by several variables. Therefore, the second sub-hypothesis is correct.

- Regarding the simple linear relationship showing the relationship between electronic tablets and the educational process, the correlation coefficient equals 57.2%, while the coefficient of determination has a value of 32.3%. Accordingly, it can be stated that the elements of the independent variable, electronic tablets, explain 32.3% of the dependent variable, namely the educational process, leaving a difference of 67.7%, representing the other variables not included in the model, indicating that the educational process is affected by other variables. Therefore, the third hypothesis is correct.
- Regarding the multiple linear relationship showing the relationship between the independent variable, technology, with its three dimensions—computer, Internet, and electronic tablets—and the dependent variable, the educational process, the correlation coefficient equals 67%, while the coefficient of determination has a value of 50%. Accordingly, it can be stated that the independent variable, technology, with its three dimensions, explains 50% of the dependent variable, namely the educational process, leaving a difference of 50%, representing other variables not included in the model and indicating that the educational process is affected by other factors. Therefore, the main hypothesis is correct.

- **F-Test:** Since the probability value associated with the F-test is $\text{sig} = 0.001$, which is less than 0.05, this leads us to accept the model and the explanatory power of the multiple linear regression model for technology and the educational process.

- **t-Test:** Referring to Table No. (05), it is clear that the dimension with the greatest effect on the educational process is electronic tablets, given that $\text{sig} = 0.005$, which is less than 0.05, while the other variables are omitted because their sig values are greater than 0.05. Therefore, the regression line model takes the following relationship:

D (Educational Process) = 1.815(T0) + 0.498(T3) Electronic Tablets

- **Analysis of the Pearson Correlation Coefficient Results:**

The Pearson correlation coefficient indicates the correlation relationship between two variables, with its value ranging between (-1, +1). The strength of the linear relationship is also determined through the absolute value of the Pearson correlation coefficient. If the coefficient value is strictly greater than zero, we say that the correlation is positive and that the relationship between the two variables is direct. If the correlation value is strictly less than zero, we say that its value is negative and, consequently, the relationship between the two variables is inverse. If its value is equal to zero, we say that there is no relationship between the two variables. Using the following graphical analysis of the Pearson correlation coefficient:

- From 0 to 0.3: there is no significant correlation.
- From 0.3 to 0.5: there is a weak correlation.
- From 0.5 to 0.7: there is a moderate correlation.
- From 0.7 to 0.9: there is a strong correlation.
- From 0.9 to 1: there is a very strong correlation.

Table No. (07): Correlation Relationships between Variables:

Correlations	Computer T1	Internet T2	Electronic Tablets T3	Educational Process D
Computer T1				
Pearson Correlation	1	0.198	0.226	0.383
Sig. (2-tailed)	—	0.295	0.229	0.037
N	30	30	30	30
Internet T2				
Pearson Correlation	0.198	1	0.212	0.386
Sig. (2-tailed)	0.295	—	0.262	0.035
N	30	30	30	30
Electronic Tablets T3				
Pearson Correlation	0.226	0.121	1	0.572
Sig. (2-tailed)	0.229	0.262	—	0.001
N	30	30	30	30
Educational Process D				
Pearson Correlation	0.383	0.386	0.572	1
Sig. (2-tailed)	0.37	0.035	0.001	—
N	30	30	30	30

Source: Prepared by the researcher based on the outputs of the SPSS program.

The above table shows the correlation coefficient between the study variables, namely technology with its three dimensions (computer, Internet, and electronic tablets), and the educational process, where:

ü The Pearson correlation coefficient between the computer and the educational process is equal to (38.3%). This indicates that the correlation is moderate and that the nature of the relationship between the two variables is direct. Moreover, Sig. (2-tailed) is less than 0.05. This means that the computer affects the educational process. Therefore, the first sub-hypothesis (**There is a statistically significant effect of computer technology on improving the educational process**) is valid.

ü The Pearson correlation coefficient between the Internet and the educational process is equal to (38.6%). This indicates that the correlation is weak and that the nature of the relationship between the two variables is direct. Moreover, Sig. (2-tailed) is less than 0.05. This means that the Internet affects the educational process. Therefore, the second sub-hypothesis (**There is a statistically significant effect of Internet technology on improving the educational process**) is valid.

ü The Pearson correlation coefficient between electronic tablets and the educational process is equal to (57.2%). This indicates that the correlation is moderate and that the nature of the relationship between the two variables is direct. Moreover, Sig. (2-tailed) is less than 0.05.

This means that electronic tablets affect the educational process. Therefore, the third sub-hypothesis (**There is a statistically significant effect of electronic tablet technology on improving the educational process**) is valid.

• **Conclusion:**

After presenting the theoretical approach to both phenomena of information and communication technology and the educational process, in terms of concepts, characteristics, functions, components, media, and importance, and then presenting the applied aspect represented by studying the effect of information and communication technology on improving the educational process in primary institutions in Thniet El Had, Tissemsilt Province, we achieved our objective, which consisted of determining the extent to which the technologies of the computer, Internet, and electronic tablets contribute to improving the educational process, through answering the set of questions previously raised, which were analyzed and interpreted in the field study.

We reached the following results:

- The diversity of means and media contributes to bringing ideas and concepts closer to the learner, while increasing the effectiveness of their understanding of the academic subjects.
- Technological means contain elements of stimulation and attraction of the learner's attention, and provide them with correct and accurate information. In addition, they facilitate the teacher's method of explaining the lesson, on the one hand, and facilitate the learner's reception of knowledge, on the other hand.
- The results confirmed the positive contribution of technological media (computer, Internet, and electronic tablets) to supporting and improving the educational process and academic achievement by enhancing the learner's knowledge base, given the multiple applications provided by these media.
- There is a positive effect of using the computer on improving the educational process in the institutions constituting the field of study.
- There is a positive effect of using the Internet on improving the educational process in the institutions constituting the field of study.
- There is a positive effect of using electronic tablets on improving the educational process in the institutions constituting the field of study.
- It can be said that these results are partial and related only to the research sample, and they cannot be generalized to the other institutions, perhaps because the other institutions do not have these media, or because not all teachers are familiar with these technologies and how to deal with and use them.

Based on the aforementioned results, we can present the following recommendations:

- Enriching the educational system with modern methods of acquiring knowledge, and training teachers in the basics of using technological techniques.
- Employing technological techniques in the educational process in general, and developing a learner in light of the digital revolution.
- The necessity of providing modern means in every educational institution.

- Analyzing the primary education curricula in all their elements (objectives, contents, approaches, activities, and assessment) in order to determine their compatibility with modern means.
- Encouraging teachers who integrate modern means into the classroom.
- Addressing all negative attitudes toward the use of technological media in the school environment and providing some positive incentives.
- Establishing specialized laboratories in educational institutions to train teachers, raise their level of performance, and develop their skills.
- Conducting specialized research on the use of educational media technology so that all personnel working in educational institutions can benefit from it.

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