

The Impact of Educational Technology Tool Usage in Teaching in Raising the Academic Achievement of Teachers and Students: A Study in East Jerusalem Schools

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Abstract: This study investigates the impact of the use of modern technology in supporting the educational process in schools in Jerusalem and the implications for the academic achievement of both teachers and students. First, the types of technological tools used in education are introduced and then their relative importance, availability and use in schools in Jerusalem are examined. Next, a descriptive analytical approach is used to explore the importance of employing technological tools in the educational process from both the teachers' and the students' perspectives. From this analysis, it is concluded that the use of technological tools plays an important role in the success of the educational process and that their use is reflected positively in a raising of the competence level of teachers. In addition, the use of technological tools improves the educational activities of the students, and their use achieves many of the desired educational goals due to their features and characteristics. This study therefore recommends that the level of interest in technological tools and their use in the educational process needs to be increased and that attention needs to be paid to the continuous training of teachers on how to use these tools effectively in the educational process.

Key words: Technological tools, educational process, effective teaching methods.

1. Introduction

The use of technological tools become an important and contemporary topic of interest among many researchers. Many studies have shown that the effective use of technological can help to solve many educational problems and raise the overall quality of education. The use of technological tools in education contributes to the achievement of educational goals by gaining the interest of students. Such tools attract the students' attention toward the lesson, bring the subject of the lesson closer to their level of awareness, and improve their motivation to engage with the subject of the lesson. These tools also provide support to teachers by offering content management and daily follow-up functions. However, from attending and providing several training courses in Jerusalem in particular, the researchers noted that teachers were not using modern technology effectively. Many technological tools are present in classrooms, but they are not integrated into and employed in the educational process properly so as to achieve the maximum benefit. The researchers also noted that many technological tools which considered as state of art in the educational process such as virtual reality (VR) and augmented reality (AR) are still not being used effectively yet.

Hence, in this study, the researchers attempted to investigate the use of technological tools in education and their perceived importance. The researchers focusing on gaining an understanding of the current situation in regards to the employment and integration of these technology-based educational tools as well as studying the impact of their use on the performance of teachers and students in schools. The researchers also aimed to identifying and addressing the causes that prevented the teachers from using the technological to their best advantages. For this study, the researchers adopted a descriptive analytical approach to identify and formulate the study problem. The study community consisted of 10 schools in Jerusalem and the study sample consisted of 91 school teachers and managers. A questionnaire was used as the data collection tool and the required information was collected in an accurate and orderly manner. After analyzing the data obtained from the questionnaire responses, it was concluded that it is vital that teachers in schools in Jerusalem use modern educational techniques and that the use of modern technology is essential for achieving the objectives of different lessons. It was also concluded that there is a need to have a special educational technology specialist in each school to train school teachers to use and leverage the benefits of technological tools effectively. The remainder of this paper is organized as follows: The next section reviews previous studies on the research topic. This is followed by a description of the research design. Then, the results of the analysis are presented and some recommendations are made, and finally, a summary of the study is provided.

2. Literature Review

The use of technological tools to support the delivery of education has become an essential part of the educational process. The use of these tools cannot be dispensed with in teaching situations because of the benefits these tools can provide. For example, facilitating the explanation of lessons to teachers, also to the student through enabling the absorption of knowledge and improving educational achievement with the least effort and in the shortest time possible. In this section, a brief review of previous studies on the importance and benefits of using technological tools in education is provided. In addition, an overview of the types of educational tools used to support the educational process and their respective benefits.

2.1. Related Works

Many studies have touched on the importance of using modern technology in education because of the important role it can play in avoiding many of the problems in the traditional education system that relies solely on the whiteboard and manual tools to achieve the desired goals [1]. Modern technology has helped to solve student-related problems, such as helping to increase student concentration during class and to understand subjects more quickly. The use of modern technology also helps to reduce the gap between students who have different levels of ability. It has also been shown that technological tools can help solve curriculum-related problems by making it easier for students and teachers to deal with vast amounts of information through, for example, facilitating the storage of such information in the cloud, or by displaying it in more interesting and stimulating ways [2], [3]. Technological tools can also contribute significantly to facilitating communication between school managers, teachers, students and parents through several means such as e-mail, social media, and e-learning. In addition, these tools can contribute to enhancing students' learning and to improving their level of scientific knowledge, in addition to providing an interesting learning environment for both teachers and students, in which time and space determinants are eliminated, as well as allowing students to learn in line with their individual capabilities and cognitive level [4].

The Palestinian Ministry of Education has worked on several projects to improve the quality of education by developing information communication technology and e-learning initiatives in order to contribute effectively to the development of the educational process and to enhance communication between the

parties involved in the educational process [5], [6]. These projects have focused on developing infrastructure, electronic content, building capacity, and strengthening the communications network within schools to achieve high access to information. One of these projects is the E-learning initiative, which was launched in 2004 and which aimed to improve the quality of education through the use of technology. This was followed by the Model Schools Network project in 2007, the Intel Education program in October 2008, and the Seed project in 2012. In addition, the PSD project was launched in March 2011 and this is still being implemented by the Ministry. Furthermore, the E-learning Promotion project for Palestinian schools was launched in 2010 with the aim of creating an interactive and active environment among students, teachers and the community inside and outside the class to give students critical and creative thinking skills and problem-solving capabilities. The study, which was conducted to investigate the impact of modern technology in education on the teaching of technology among teachers and students in schools in Tulkarem, Palestine [7], recommended that technology teachers be trained to use modern educational techniques, especially e-learning and multimedia. Currently, there are many leading Palestinian institutions in the field of training teachers in modern technological methods of education, including the Nayzak Foundation [8]. There are also a number of learning sites that seek to transform the curriculum into an interactive curriculum through technological methods including interactive books and active learning (IBAL) [9].

2.2. Technological Tools for Education

The use of technological tools in support of education is an application-based approach that increases the quality of educational performance through the use of physical components (hardware) or software and educational materials that are transformed from traditional into new forms of technology [10]. An overview of the main types of tools currently in use is given below.

Applications and devices for presentations and designs

- PowerPoint: A Microsoft visual graphical application that is primarily used to create presentations, PowerPoint can be used to create slideshows that include text, shapes and images, movement, charts, videos, etc.
- SmartBoard: Is used to display applications and various educational resources on a computer screen and that is used to communicate via the internet. It can be connected to a computer and digital monitor.
- Interactive projector: A device that converts any surface into an interactive tablet through the use of touch or an interactive pen that enables the user to write and draw on the default whiteboard.
- 3D printer: using 3D printer, students are able to print educational models. The student designs the different plastic pieces they need and then prints them and uses them immediately.

Smart devices

- Tablets and iPads: These devices can be described as intermediate devices that lie between laptops and smartphones because they combine the features of both laptops and smartphones.
- Mobile applications: Ready-made educational mobile applications are used to increase the student's understanding level at the individual level. These applications are based on simplifying the concepts especially in math and science classes and take into account the academic level and abilities of the individual student. In addition, through mobile applications such as App Inventor the student can employ programming technology and design mobile applications where the student learns to program and design educational games and applications that are related to various educational topics. These activities can develop the student's thinking, creativity, and touches on the issue of productivity in education.
- Virtual Reality (VR): Defined as a computer technology that simulates a real or 3D environment that

transmits human consciousness into that environment so that the individual feels that he/she is living in it and that may sometimes allow the user to interact with the virtual environment. The most notable example of VR technology is 360-degree video footage that virtually puts the user in a place to imagine and live its components as if the user were actually there. The term VR is also used to describe a wide variety of associated applications in education that include 3D environments with which the user interacts with touch or sound, such as the Cospaces app.

- **Augmented Reality (AR):** A technology that can turn a real image into a virtual image on a computer screen supported by information, audio or video. One of the most important uses of augmented reality in the field of education is the augmented book to virtualize the book items through using any intelligent device.

Internet applications

- **Cloud:** A storage space in which files and folders can be stored and then retrieved at any time and from any place. The cloud can be used to save different types of educational files such as photos, videos and texts for a wide range of subjects so that the student can retrieve them when needed.
- **Social media networks and sites:** These sites operate on websites and used to communicate through text, image, video, and other services. They are used in the educational process by creating specific pages to build collaboration platforms. Examples include Facebook, YouTube, and Twitter.
- **Google Apps:** A collection of collaborative and participatory tools and solutions provided by Google, which can be greatly utilized by education professionals and which include Google Drive, Gmail, Google Classroom.

Specific education applications

- **Simulation software:** A set of ready-made software that is used to facilitate and simplify concepts in various sciences, for example, Phet.Colorado.edu link.
- **Alternative evaluation:** A set of ready-made software that is used to hold examinations through different applications. This type of software can be used through smart devices such as tablets and smartphones to answer questions. One example of this software is Kahoot.com.

3. Research Design

The descriptive analytical method was used to investigate and explore the research problem and describe it in a scientific way. The research questions and objectives as well as the study community and the required sample are outlined below and were formulated and selected in order to collect, analyze, interpret the data accurately and to express that data both quantitatively and qualitatively.

3.1. Research Questions

The main question posed by this study was:

- What is the reality of employing technological tools in the educational process in Jerusalem schools?

Five sub-questions emerged from this question as follows:

1. What technological tools can be used in the educational process in schools?
2. To what extent are the technological tools available in schools?
3. How often do the teachers use the technological tools in the educational process?
4. What are the obstacles to using modern technological tools in the educational process?
5. What skills should teachers have to use technological tools in teaching?

3.2. Research Objectives

The objectives of this study were as follows:

1. To find out what technological tools can be used in the educational process in schools.

2. To determine the availability of technological tools in schools.
3. To determine the degree to which teachers use technological tools in the educational process.
4. To discover the obstacles to using modern technological tools in the educational process.
5. To identify what skills teachers should have to use modern technological tools in teaching.

3.3. Study Community and Study Sample

The goal of the study was to find out what technological tools can be used in the educational process and to understand the reality of their use. Therefore, the selected study community was the managers and the teachers in the Islamic Awqaf schools, Palestinian Authority schools, private schools and municipal schools in Jerusalem.

3.4. Questionnaire

A questionnaire was used as the tool for collecting the required data. The questionnaire was divided into two parts: The first contained some closed questions and the second part contained some open questions. The sections of the questionnaire were formulated in accordance with the objectives of the study in order to determine what technological tools can be used in the educational process in schools and the degree of availability and use of these tools among teachers and managers. In addition, the questionnaire contained items to gain an understanding of the skills that teachers should have to use such tools and to also identify the constraints hindering their use. The questionnaire was designed and distributed electronically. Cronbach's alpha coefficient was used to ensure the stability of the study tool.

4. Results and Analysis

This section contains an analysis of the information collected from the responses to the main parts of the questionnaire.

Table 1. Number of Questionnaires Distributed among the Study Sample

Sample	Distributed questionnaires	Returned questionnaires	Percentage of questionnaires returned	No. of males	No. of females
Teachers	100	85	85%	16	69
Managers	10	6	60%	2	4
Total				18	73

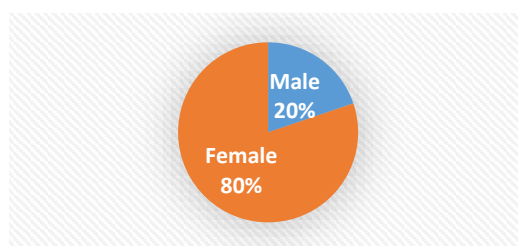


Fig. 1. Distribution of sample by sex.

Table 2. Distribution of Sample by Professional Experience

Years of experience	Count	Percentage
1 to 3 years	4	4.4%
4 to 7 years	11	12%
8 to 12 years	6	6.6%
13 years and above	70	77%

4.1. General Information

The questionnaire survey was distributed electronically to 10 schools. Completed questionnaires were

received from 91 respondents who were teaching/managing at the kindergarten (43) primary (28) and secondary (23) level. Information on the number of questionnaires distributed and returned is provided in Table 1. Fig. 1 shows the distribution of the study sample by sex. Table 2 and Fig. 2 show the distribution of the sample by professional experience.

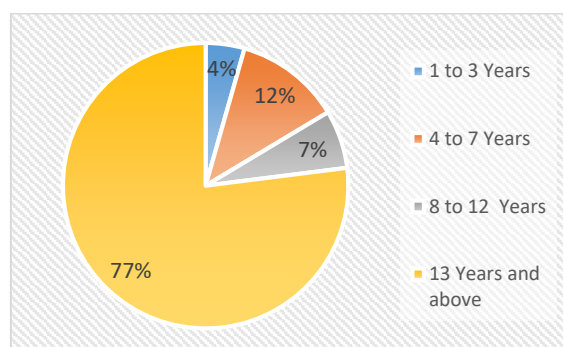


Fig. 2. Distribution of sample by professional experience.

Table 3. The Types of Technological Tools Used by Teachers and Managers

Tool classification	Type of technological tool	No. of "no" answers		No. of "yes" answers	
		Teachers	Managers	Teachers	Managers
Applications and devices for presentations and designs and interactive software	Computers for teaching	10	0	75	6
	Microsoft Word, PowerPoint, Excel, databases	12	0	73	6
	Smartboards	39	2	46	4
	LCD Projectors	7	0	78	6
	Interactive projectors	37	1	48	5
	Interactive books	59	5	26	1
	3D printers	77	6	8	0
Internet applications	Internet	4	0	81	6
	E-mail	45	2	40	4
	Search engines	13	0	72	6
	YouTube	4	0	81	6
	Electronic evaluation	48	4	37	2
	Moodle	51	4	34	2
	Cloud	48	3	37	3
	Social media networks	29	2	56	4
Smart devices and their applications	Simulation software	56	3	29	3
	Tablets and iPads	49	4	36	2
	Mobile applications	57	4	28	2
	Virtual reality	61	4	24	2
	Augmented reality	59	4	26	2

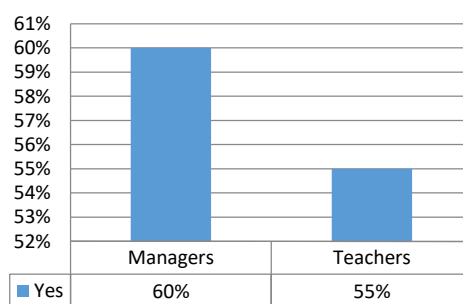


Fig. 3. Use of technological tools in the educational process in schools.

4.2. Technological Tools Used in the Educational Process

Tables 3 to 6 and Fig. 3 provide a detailed breakdown of the answers given by teachers and managers about their respective use of technological tools in school by number, average, percentage and ranking as well as a breakdown by tool classification and sex.

Table 4 Statistical Analysis of the Use of Technological Tools by Teachers and Managers

Type of technological tool	Ranking	Average no. of Yes answer	Percentage use	Degree of use
Internet	1	87	96%	High
YouTube	21	87	96%	High
LCD projectors	3	84	92%	High
Computers for teaching	4	81	89%	High
Microsoft Word, PowerPoint, Excel, databases	5	79	87%	High
Search engines	6	78	86%	High
Social media networks	7	60	66%	Moderate
Interactive projectors	8	53	58%	Moderate
Smartboards	9	50	55%	Moderate
E-mail	10	44	48%	Low
Cloud	11	40	44%	Low
Electronic evaluation	12	39	43%	Low
Tablets and iPads	13	38	42%	Low
Moodle	14	36	40%	Low
Simulation software	15	32	35%	Low
Mobile applications	16	30	33%	Low
Augmented reality	17	28	31%	Low
Interactive books	18	27	30%	Low
Virtual reality	19	26	29%	Low
3D printing	20	8	9%	Low

Table 5. Statistical Analysis of the Use of Technological Tools by Teachers and Managers by Tool Classification

Tool classification	Average	Ranking	Degree of use
Internet applications	55.89	1	High
Applications and devices for presentations and designs and interactive software	54.57	2	High
Smart devices and their applications	30.50	3	High

Table 6. Statistical Analysis of the Use of Technological Tools by Teachers and Managers by Sex

Sex	Count	Average	Percentage	Standard deviation	Statistical indication
Male	18	7.75	43%	6.02	Low percentage
Female	73	42.6	58%	18.07	High percentage

Table 7. The Availability of Technological Infrastructure in Schools

Item	No. of "no" answers		No. of "yes" answers		Ranking	Average no. of "yes" answers	Percentage	Direction intensity
	Teachers	Managers	Teachers	Managers				
The school provides a technician to observe the operations of devices with high efficiency.	8	1	77	5	1	82	90%	High
The school manager is interested in bringing in the latest modern technologies to support the educational process.	15	1	70	5	2	75	82%	High
Classes are equipped with the necessary technological tools and are ready to use.	17	0	68	6	3	74	81%	High
The school provides guidance to help teachers in the proper use of technological tools.	18	2	67	4	4	71	78%	High
The internet speed available in school is high.	28	2	57	4	5	61	67%	Moderate

4.3. Availability of Technological Infrastructure

Table 7 provides the data on the availability of technological infrastructure in schools according to the responses received and these data are presented in terms of number, ranking, average and percentage as well as direction intensity.

Fig. 4 shows the availability of technological infrastructure in schools from the point of view of managers and teachers.

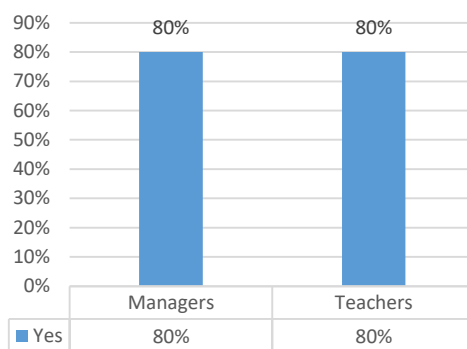


Fig. 4. Availability of technological infrastructure in schools from the point of view of managers and teachers.

4.4. Employment of Technological Tools in the Educational Process

Table 8, Table 9 and Fig. 5 show the data on the employment of technological tools in the educational process according to the responses received and these data are presented in terms of number, ranking, average and percentage as well as direction intensity.

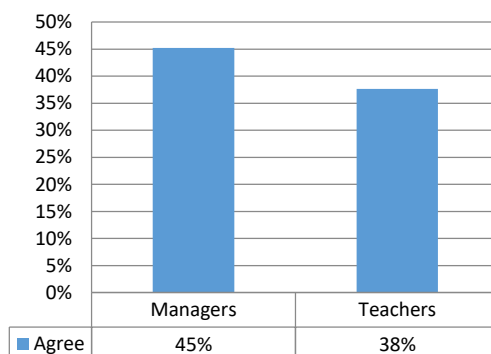


Fig. 5. Use of technological tools in education from the point of view of managers and teachers.

Table 8. The Employment of Technological Tools in the Educational Process

Item	Do not agree		Neutral		Agree	
	Teachers	Managers	Teachers	Managers	Teachers	Managers
Teachers use technological tools in their classes in varying proportions.	10	2	25	0	50	4
Computerized evaluation tools are one of the most widely used types of technological tool.	23	3	36	2	26	1
Teachers are keen to use computing in their classes for science subjects.	9	0	38	2	38	4
Teachers monitor their students by using technological tools for content management.	18	2	41	2	26	2
Teachers know the correct mechanisms for properly employing technological tools for educational purposes in their classes.	12	2	36	0	37	4
Teachers are keen to join computer training courses.	18	2	32	2	35	2

Table 9. Statistical Analysis of the Employment of Technological Tools in the Educational Process

Item	Ranking	Average no. of "agree" answers	Percentage	Direction intensity
Teachers use technological tools in their classes in varying proportions.	1	54	59%	Moderate
Teachers are keen to use computing in their classes for science subjects.	2	42	46%	Low
Teachers know the correct mechanisms for properly employing technological tools for educational purposes in their classes.	3	41	45%	Low
Teachers are keen to join computer training courses.	4	37	41%	Low
Teachers monitor their students by using the technological tools for content management.	5	28	31%	Low
Computerized evaluation tools are one of the most widely used types of technological tool.	6	27	30%	Low

4.5. Basic Skills Required for the Employment of Technological Tools in Education

Table 10 and Table 11 give the data on the basic skills that are required for using technological tools in education according to the responses received and these data are presented in terms of number, ranking, average and percentage as well as direction intensity.

Table 10. The Basic Skills Required for Using Technological Tools in Education

Item	Do not agree		Neutral		Agree	
	Teachers	Managers	Teachers	Managers	Teachers	Managers
Knowing the appropriate technological tool to use for the subject is mandatory for the educational technology.	0	0	6	0	79	6
Searching the internet is a very important skill for teachers	0	0	6	0	79	6
Basic computer skills constitute a key pillar for the computerization of education.	1	0	7	0	77	6
Developing the pedagogical skill to employ technological tools is the basis for correct computing.	3	0	9	0	73	6
Social media skills are the central focus of the educational process.	3	0	15	0	67	6

Table 11. Statistical Analysis of the Basic Skills Required for Using Technological Tools in Education

Item	Ranking	Average of no. of "agree" Answers	Percentage	Direction intensity
Knowing the appropriate technological tool to use for the subject is mandatory for the educational technology.	1	85	93%	High
Searching the internet is a very important skill for teachers	1	85	93%	High
Basic computer skills constitute a key pillar for the computerization of education.	3	83	91%	High
Developing the pedagogical skill to employ technological tools is the basis for correct computing.	4	79	87%	High
Social media skills are the central focus of the educational process.	5	73	80%	High

4.6. Importance of Employing Technological Tools in the Educational Process

Table 12, Table 13 and Fig. 6 provide data on the importance of employing modern technological tools in the educational process according to the responses received and these data are presented in terms of number, ranking, average and percentage as well as direction intensity.

Table 12. The Employment of Technological Tools in the Educational Process

Item	Do not agree		Neutral		Agree	
	Teachers	Managers	Teachers	Managers	Teachers	Managers
Technological tools play an active role in the development and improvement of the classroom environment.	2	0	6	0	77	6
The use of technological tools within the classroom contributes to increased student organization and control.	7	0	17	1	61	5
Technological tools help teachers to manage educational content more effectively.	3	0	8	0	74	6
Technological tools are an important element in raising the quality of education in schools.	3	0	12	0	70	6
Technological tools are a key focus in the development and improvement of the curriculum.	3	0	21	0	61	6
Technological tools help to treat students with different academic abilities and behaviors.	4	0	17	1	64	5
Using educational technology tools properly raises the academic level and thinking abilities of school students.	2	1	17	0	66	5
Technological tools are an essential component of the classroom learning process in the 21st century.	3	0	11	0	71	6

Table 13. Statistical Analysis of the Employment of Technological Tools in the Educational Process

Item	Ranking	Average no. of "agree" answers	Percentage	Direction intensity
Technological tools play an active role in the development and improvement of the classroom environment.	1	83	91%	High
Technological tools help teachers to manage educational content more effectively.	3	80	88%	High
Technological tools are an essential component of the classroom learning process in the 21st century.	8	77	85%	High
Technological tools are an important element in raising the quality of education in schools.	4	76	84%	High
Using educational technology tools properly raises the academic level and thinking abilities of school students.	7	71	78%	Moderate
Technological tools help to treat students with different academic abilities and behaviors.	6	69	76%	Moderate
Technological tools are a key focus in the development and improvement of the curriculum.	5	67	74%	Moderate
The use of technological tools within the classroom contributes to increased student organization and control.	2	66	73%	Moderate

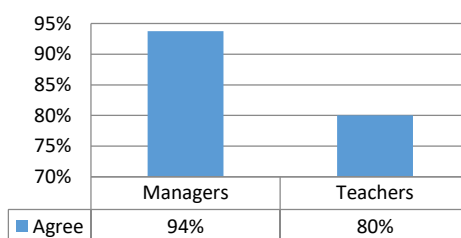


Fig. 6. Importance of employing technological tools from the point of view of managers and teachers.

4.7. Constraints and Difficulties

Table 14 shows the types of constraints and difficulties faced in the use of technological tools in schools based on the answers given by the teachers and managers. The data are presented in the form of numbers,

averages, rankings and percentages as well as direction.

Table 14. Constraints and Difficulties in the Use of Technological Tools

Item	No. of "no" answers		No. of "yes" answers		Ranking	Average no. of "yes" answers	Percentage	Direction intensity
	Teachers	Managers	Teachers	Managers				
Social media skills are the state of art for the educational process.	14	0	71	6	1	77	85%	High
Internet speed is a major challenge.	25	3	60	3	2	63	69%	Moderate
The use of technological tools has not been properly taught in schools.	30	0	55	6	3	61	67%	Moderate
Many technical problems arise when using technological tools in class.	31	1	54	5	4	59	65%	Moderate
There is a significant lack of education technology experts.	32	1	53	5	5	58	64%	Moderate
There is a big gap between the teachers' and students' technical and technological capabilities in terms of the use of technological tools.	42	3	43	3	6	46	51%	Moderate

4.8. Questionnaire Stability

Table 15 shows the stability of the questionnaire based on the Cronbach's alpha coefficient for each part of the questionnaire. From the table it can be seen that the stability coefficient for the overall questionnaire was 0.819, and that the stability coefficients of the different parts of the questionnaire ranged from 0.738 to 0.889. These values were considered acceptable for the purposes of the study.

Table 15. Statistical Analysis Of Stability Coefficients for a Part from the Questionnaire

Questionnaire part	Number of phrases	Cronbach's alpha factor
Types technological tools used in the educational process	20	0.809
Employment of technological tools in the educational process	7	0.738
Availability of technological infrastructure	5	0.882
Importance of using technological tools in the educational process	8	0.817
Constraints and difficulties in the use of technological tools in the educational process in schools	6	0.849
Basic skills required for using technological tools in education	5	0.849

5. Findings and Recommendations

This study revealed several advantages and constraints in relation to the use of technological tools in schools, which are highlighted in the following sections.

5.1. Advantages of Using Technological Tools

The key advantages of technological tools are:

- Change the philosophy of education: After the aim of education shifted to producing students capable of entering the labor market, the use of technological tools promoted the concept of lifelong self-learning.
- Change the teacher's role: Prior to the digital era, the teacher was the main source of knowledge and the focus of the educational process. After the use of technology-based teaching techniques became more widespread, the teacher's roles and functions evolved, so that he/she has now become a

designer, facilitator, and organizer of the educational environment, and a mentor to students. These tools help the teacher to improve his/her achievements by raising his/her professional competence and readiness. Moreover, they help the teacher to save the time and effort spent on the repeated use of traditional educational means, enabling him/her to make better use of the time available, helping him/her to increase student motivation, and assisting him/her to overcome the limitations of space and time.

- Change the role of the student: In traditional educational systems, the student played a passive role, and was limited to watching presentations and receiving information. After the introduction of technological tools, the student was able to become more active in their own learning. These tools encourage the student to participate and interact with different classroom situations, making the educational experiences more effective.
- Change the curriculum objectives: Previously, the curriculum focused on the learner's ability to memorize, remember and regurgitate as much information as possible. After the introduction of new technology, the acquisition of self-learning skills and the instilling of knowledge and research capabilities from different sources became one of the main general objectives of the curriculum.

5.2. Constraints and Difficulties

The teachers and managers who were surveyed for this study identified the following constraints and difficulties:

- A shortage of human resources for supervising learning resources.
- A lack of knowledge about how to operate and maintain technological tools due to a lack of training.
- A fear among teachers that they may use technological tools improperly. Therefore, be held accountable by their supervising manager.
- A fear among teachers about moving away from traditional methods of teaching.
- A lack of conviction among teachers about employing technological tools in education.
- A lack of encouragement being given to school managers and administrators to use technological tools.
- A lack of technological tools in some schools, including a lack of modern laboratories.
- A failure to introduce technological content that matches students' technological and technical skills, which reduces the value of computerized work.

5.3. Recommendations

Based on the results of the research and the comments of the managers and teachers in the selected schools, the researchers concluded several recommendations, the most important of which are:

- The creation of a special unit in the Ministry of Education consisting of qualified and experienced personnel in the computerization of education and mechanisms to employ technological tools in a correct pedagogical way. This unit would act as a reference point to support teachers in teaching computing.
- Ensuring that teachers use technological tools properly as these tools are complementary to the educational process and should be used only for a specified period and when needed.
- Providing technological tools in all schools and making sure that they are maintained on an ongoing basis.
- Holding training courses on an ongoing basis for all teachers from all disciplines to inform them of what has been learned in regards to the use of technological tools in education.
- The creation of a guide in the employment and use of technological tools in education, including

some rules on how to choose an educational tool in terms of its content, as well as some rules that must be observed before, during and after its use.

- Providing trainer in each school with basic technical support.
- Increasing the speed of the internet in schools so that technological tools can be used optimally.
- Guiding teachers on how to communicate with students through certain electronic programs such as Moodle, Google Classroom and Microsoft 365.

6. Summary

The concept of modern education has been associated with the employment of technology in education. It has become necessary for the teacher to be familiar with the types of up-to-date technological tools that support education and how to use them because of their important role in the educational process for both teachers and students. During this research, many topics were discussed in order to fully study the impact of the use of modern technology on the educational process in schools in the city of Jerusalem. This led to several conclusions, the most important of which was the clear need to use technological tools in education and that both managers and teachers perceived that these tools had a positive impact on the educational process. In addition, it was apparent that there was a lack of human resources for supervising the use of these tools and for helping teachers to use them in the best way, which pointed to the need to provide training to use them. To obtain a clearer picture of the impact of technological tools in schools and training needs, this research could be extended to include all the governorates in Palestine. As a future direction for this research, it is recommended to extend this research by concentrating on mobile and smart devices applications and on the augmented reality and virtual reality applications.

Conflict of Interest

The authors declare no conflict of interest.

Author Contributions

All authors work together in all tasks.

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