

## **The role of educational media technology in increasing innovation processes in the educational process in Palestinian universities**

**By**

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### **Abstract**

This study aims to identify the role of educational media technology in increasing innovation processes in the educational process in Palestinian universities. The researcher used the analytical descriptive approach. A questionnaire was built and distributed to a sample consisting of (129) Palestinian university employees. The sample members were chosen randomly. The researcher used the search tool. The study consisted of (40) items distributed over four fields. The researcher used the Social Packages Program (SPSS) in the statistical analysis of the data, one-way analysis of variance test, the (T) test for the two independent samples, the Cronbach alpha equation, in addition to the averages and standard deviations of the questionnaire items, and the stability coefficient was ( 0.95), which is a good stability coefficient that meets the purposes of scientific research. The results of the study showed that the role of educational information technology in increasing innovation processes in the educational process in Palestinian universities is significant. It was found that there were no statistically significant differences at the level of significance ( $\alpha = 0.05$ ) between the responses of The study sample on the role of educational media technology in increasing innovation processes in the educational process in Palestinian universities is attributed to each of the variables (sex, gender for work, type of university), and the most important recommendations were for those in charge of Palestinian universities to continue paying attention to innovation and activating it in all academic fields. The need to continue activating the use of technology in the educational process in Palestinian universities.

**Keywords:** educational information technology, innovation processes, educational process, Palestinian universities.

### **Introduction**

The current century is characterized by tremendous scientific progress and an explosion of knowledge, which has led to many changes in all different fields of life. The cultural, social, educational and economic fields, and this was the result of qualitative progress in the fields of technology and industry, and the emergence of information and communication technology in all its forms such as: the Internet, computers, websites, e-mail, and their use in the educational process (Al-Bakhit, 2020).

Information and communication technology is a means and an aid in the teaching and learning process, which appeared in the modern era as a result of developments, as it provides many auxiliary tools that contribute to presenting the courses in the academic content in an interesting way, through the employment of websites, blogs, electronic platforms... etc., so that they can By repeating the content over and over again so that they can have a good understanding through the exploitation of technology in teaching and learning, and thus fully encompass the material (Raash, Al Mubarak, 2022).

Because innovation processes support creative thinking and drive efforts to extract economic and social value from knowledge, which is the lifeblood of any successful organization, new ideas, new approaches, and improved strategies are the only way through which organizations will pivot and grow in the modern business climate (Al-Khurasat, 2021) .

Therefore, we find ministries of higher education at the local or Arab levels making many and varied attempts and efforts to develop higher education and innovation (Ammar, et al., 2021). Therefore, the education sectors will witness a radical change in the method of learning and teaching, as universities will be equipped with smart systems for project management and research, and create a spirit Innovation in the educational campus that will be armed with an academically qualified cadre, starting from the top of the educational pyramid of leaders and lecturers, to achieve the highest levels of knowledge in the world, and the quality of the educational output, which is the student (Al-Mulla, 2021).

## **Study problem**

Innovation in education encourages teachers and students to know and use all tools to discover something new. It involves a different way of looking at problems and solving them. The thinking process you engage in will help students develop their creativity and problem-solving skills. Innovation does not mean creating something out of nothing. Any good scientific project, depends on searching for current solutions to come up with a new hypothesis to test it. There is an urgent need to develop innovation processes, especially in educational institutions. Innovation processes are important in activating educational processes to the fullest, all matters related to activate Education needs development and follow-up in order to benefit from what is new. Through the mixing of the researchers with Palestinian university students, they noticed that there is a lack of innovation processes in universities and that this era is the age of technology, so the problem of the study lies in answering the following questions:

1. What is the role of educational information technology in increasing innovation processes in the educational process in Palestinian universities?
2. Are there statistically significant differences between the responses of the study sample towards the role of educational media technology in increasing innovation processes in the educational process in Palestinian universities according to the gender variable?
3. Are there statistically significant differences between the responses of the study sample towards the role of educational media technology in increasing innovation processes in the educational process in Palestinian universities according to the variable of work type?
4. Are there statistically significant differences between the responses of the study sample towards the role of educational media technology in increasing innovation processes in the educational process in Palestinian universities according to the university type variable?

## Study Objectives

This study aims to:

1. Recognizing the role of educational information technology in increasing innovation processes in the educational process in Palestinian universities.
2. To identify if there are statistically significant differences between the responses of the study sample towards the role of educational media technology in increasing innovation processes in the educational process in Palestinian universities according to the gender variable.
3. To identify if there are statistically significant differences between the responses of the study sample towards the role of educational media technology in increasing innovation processes in the educational process in Palestinian universities according to the variable of work type.
4. To identify if there are statistically significant differences between the responses of the study sample towards the role of educational media technology in increasing innovation processes in the educational process in Palestinian universities according to the university type variable.

## Study Importance

The importance of the study related with the importance of its topic. This search deals with the role of educational media technology in increasing innovation processes in the educational process in Palestinian universities, because this topic is important in working to find out if there is a role for educational media technology in increasing innovation processes or not, and at the same time because this leads To work on reaching a set of results that lead the researchers to a set of recommendations so that both Palestinian universities and decision makers in the Ministry of Higher Education can benefit from them. In the educational process and provide them with references on this subject and consider them from previous studies in the Arab environment.

## Study limits

The study was limited to the following limits:

- **Human boundaries:** all administrative and academic university staff.
- **Spatial boundaries:** All Palestinian universities.
- **Time boundaries:** the first semester of the 2022-2023 academic year.

## Study Terminology

### *Educational media technology*

a general and comprehensive concept, which derives its origins and foundations from the concept of education, and in its relationship to educational technology, and indicates the use of all technological applications and benefiting from them as much as possible in managing and organizing the educational process in educational institutions (Irti', et al., 2018).

### *Innovation*

The successful and actual application of new, unfamiliar ideas that can be embodied in a new way of working. The latest innovation is a process carried out by the innovator who

relies on the application of the knowledge he possesses, in the embodiment of new choices on the thing he innovates under certain conditions, such as the availability of desire in performance and the availability of capabilities and the appropriate environment for application (Youssef, 2019).

### ***The educational process***

It is a knowledge system consisting of three main elements: inputs, processing, and outputs, as the inputs represent the students and their mental abilities and different characteristics, and the processing is represented by the memory of coordinating and organizing the previous information and converting it into meaningful cognitive patterns. The outputs represent the students' graduation of trained social laws. Good members of the community (Bin Malik, et al., 2021), the educational process (**procedurally**): It is a system consisting of a lecturer, a student, and a curriculum that seeks to raise the level of students.

### ***Palestinian Universities (procedurally):***

They are governmental, national and private universities, which offer many scientific and humanities specializations, through which many students graduate, and this supports the development of the higher education sector in Palestine; Upgrading and strengthening the reality of scientific research, and achieving quality in education in various institutions of higher education.

### ***Incremental innovation***

One of the most common forms and types of innovation, which is innovation that uses existing technology with the aim of improving its performance and development by adding new features and changes in design (Al-Hariri, 2011).

### ***Disruptive innovation***

Innovation often associated with the application of new technologies, processes, or disruptive business models to old industries, such as a phone company replacing existing technologies in its smart devices from buttons and keyboards to touchscreen devices (Ibn Burish, 2017).

### ***Architectural innovation***

One of the types of innovation that exists among business and technology giants such as large corporations, where they take their expertise, technologies and skills and apply them in different markets. In this way, they can open new markets and expand their customer base (Al-Otaibi, 2021).

### ***Radical innovation***

The rarest type of innovation, as radical innovation includes the creation of new technologies stemming from new ideas, services, and business models that open new markets that are completely different from other markets (Al-Hiyari, 2018).

### ***Previous studies***

Previous studies are the wide area through which we can understand the subject and benefit from what the researchers have reached before. It is important for any researcher to review the previous research that talked about the relevant topic.

### ***The study of Jad Al-Haq, and others (2020)***

Aimed to identify the impact of a web-based educational media program on developing intellectual security among undergraduate students. To achieve the goal, the researcher used

the semi-experimental approach in designing equal groups. The study tools and the performance evaluation form for the skill aspect of intellectual security, the results revealed that there are statistically significant differences at the level of significance of 0.01 between the mean scores of the students of the two groups (the control and the experimental) in the post-application of the test of the achievement of the cognitive aspect of intellectual security in favor of the experimental group.

***Hassanein (2020)***

Conducted a study to identify the use of traditional and digital means of communication by students in educational media departments, to identify the level of critical consumption of media among them, and the level of personal skills in the field of media education. The study concluded with several results, including: It was found that there is a statistically significant correlation between the use of paper newspapers, television, and social networking sites, and the level of critical consumption of these means.

***Salem's study (2020)***

Aimed to study the effect of using mobile phone applications on enhancing motivation towards learning chemistry among first secondary school students in Saudi schools in Kuala Lumpur. The test results showed that motivation towards learning chemistry improved among the students in the experimental group. The study recommended the use of mobile phone applications while teaching chemistry in Saudi schools to improve students' motivation towards learning.

***A study by Waghand and Tarar (2021)***

Aimed at measuring innovative thinking and cognitive sufficiency among university students. There are differences in innovative thinking and cognitive sufficiency according to the gender variable and in favor of males, and there is a significant positive relationship between innovative thinking and cognitive sufficiency.

***The study of Al-Hadabi, Salih (2020)***

Aimed to identify the extent of practicing creative thinking skills among students of educational technology at the Yemeni University of Ibb in applying innovative educational technologies. The descriptive approach was used, and the study population consisted of students of educational technology at Ibb University. In the ability of students to practice creative thinking skills, the study revealed a number of obstacles that impede the development of creative thinking among students. The study concluded with a set of recommendations and proposals.

***Saud Study (2019)***

The status of new information and communication technologies at the present time, a basic concept in the discussion about the school of the future, and the place of these tools in society and their effectiveness in learning, are the strengths that nourish thinking about teaching policy, strategies and practices. This new reality has pushed educational systems in developed countries to introduce this competency as an essential component of their curricula. Accordingly, Arab countries are called upon to face the challenge of integrating these tools into their educational practices as a means of accessing, exploiting, applying and producing knowledge. This pattern of use of information and communication technology is supposed to lead to the development of educational innovation.

***Didawi Study, et al (2019)***

Aimed to identify the role of educational media in enriching the educational process through the Al-Murabi magazine. To achieve the objectives of this research, the analytical



descriptive approach and the content analysis method were relied upon to analyze the content of the field preparation 10. The results of the study showed that there are no qualified cadres working to employ educational media well due to the absence of a specialized department for educational media.

***Kashairi study (2021)***

This study aimed to highlight media education as a concept that requires research and as a practice that requires training students in it at the university level, and this is based on the electronic form to investigate the opinions of a sample of university professors about its inclusion in university courses. Through awareness of the importance of media education, the student learns discrimination Between the truth and false ideas, and in turn he acquires skills that enable him to deal with the media, as he can understand the information he receives about what is published, especially in light of the abundance of information, and thus he becomes able to critically and creatively analyze the media contents.

***Saadi's study (2020)***

Aimed to develop a knowledge perception about the third phase of higher education and its role in the production and industry of innovation for the doctoral stage as a model. Given that the doctoral thesis is a knowledge study, and in the study, knowledge innovation and thought innovation were demonstrated. This study touched on the problem of scientific theft, and carried the study is the reality of the higher education system at the Algerian University, with an attempt to focus on the most important principles and points that must be available in order to improve the level of innovation. A questionnaire consisting of 41 items, and after confirming the indications of its validity and stability, was applied to 151 individuals, who are general managers and their deputies, directors of departments and their deputies, and heads of departments, in the academic year 2011/2012 AD.

***Al-Sawry's study (2020)***

Described the importance of creativity and innovation in higher education institutions. Given that innovation is one of the basic ingredients for achieving excellence and advancement at all levels, as it contributes to raising or improving the quality of higher education services, and this can be achieved by involving various actors and providing the appropriate environment and supportive of development. Stimulating the spirit of creativity and innovation among all members of the internal environment of higher education institutions in order to advance the national economy and achieve comprehensive development based on the knowledge economy.

***The Study of Graying (2020)***

Aimed to achieve excellence, gain competitive advantages, clarify the meaning of innovation and leadership, explain the meaning and types of humanitarian work, and focus on the University of Aleppo in the liberated areas as a leading educational institution. The analytical and original descriptive approach was used. To reach the concept of innovation and entrepreneurship in humanitarian work, and to focus on the education sector as an important humanitarian work in northern Syria. Which is considered as a model for innovation and entrepreneurship in Syria

***Youssef's study (2019)***

aimed to identify the nature of intellectual capital in the Jeddah Education Department as a model, and what are the current practices of the administration to motivate its employees to innovate, to manage and develop capital, and the study was based on the methodology of the case study and survey, and the study reached several results, namely One of the most important elements that affect innovation are technologies, relationships, research methods and

organizational structures. The study concluded the need to develop a strategy to ensure full utilization of intellectual capital and support innovation, and to increase investment in intellectual capital in its three dimensions to raise innovative capabilities and innovation growth rate in addition to that.

## Study population and its sample

The study population consisted of all the employees of the Palestinian universities, where the researchers chose an available sample consisting of (140) employees, where they distributed a questionnaire from which (129) questionnaires were retrieved valid for analysis.

**Table (1):** *the sample of the study according to its independent variables*

Variable	Category	Repetition	Ratio%
Gender	Male	82	63.6
	Female	47	36.4
	<b>Total</b>	129	100
type of work	Administrative	38	29.5
	Academic	91	70.5
	<b>Total</b>	129	100
University type	Governmental	40	31
	Private	41	31.8
	Public	48	37.2
	<b>Total</b>	129	100

## Study tool

The two researchers prepared the study tool (questionnaire) after reviewing the literature of the study and previous studies related to the subject. Each domain contains (10) paragraphs and was designed on the basis of a five-dimensional Likert scale. The paragraphs were built in a positive direction, and weights were given to the paragraphs as follows: Strongly agree: five degrees, agree: four degrees, neutral: three degrees and disagree: Two degrees, and totally disagree: one degree.

## Tool Validity

The validity of the tool was verified by presenting it to a group of arbitrators with specialization and experience, and they were asked to express their opinion about the paragraphs of the questionnaire by deleting, amending, and proposing new paragraphs and the appropriateness of the tool for the subject of the study, as it was composed of (30) paragraphs, and based on the observations of the arbitrators, it was modified. The study tool became, in its final form, consisting of (40) items, and accordingly, the tool enjoys the validity of the content.

## Tool stability

From extracting the stability coefficient, the researchers used Cronbach's alpha equation. The stability coefficient in relation to the first domain of incremental innovation reached (0.91), in the second domain of disruptive innovation (0.87), in the third domain of architectural innovation (0.93), and in the fourth domain of radical innovation (0.84). ) The

reliability coefficient for the total degree was (0.95), and all these values that have been reached for the stability coefficients are appropriate and fulfill the purpose of the study.

## Statistical treatment

After data collection, coding, and processing by appropriate statistical methods, using the SPSS statistical package program, the researchers used frequencies, arithmetic averages, standard deviations, percentages, the t-test for independent samples, the One Way ANOVA test, and Cronbach alpha equation.

## View the results of the study questions

In this section, the results of the study questions will be discussed, and based on the results of the study, recommendations and proposals will be presented that are appropriate to the subject of the study. The questionnaire was designed on the basis of a five-dimensional Likert scale. Large: four degrees, medium: three degrees, little: two degrees, very little: one degree, and the researchers relied on the interpretation of the results on this criterion:

1. From 3.5 and over = High
2. 3.5-2.5 = Medium
3. Less than 2.5 = Low

The first question: What is the role of educational media technology in increasing innovation processes in the educational process in Palestinian universities?

In order to answer this question, the arithmetic Averages, standard deviation, and percentage were extracted for each paragraph of the tool, and the following is a statement:

**Table (2):** Averages and standard deviations for the role of educational information technology in increasing innovation processes in the educational process in Palestinian universities arranged in descending order according to the arithmetic Average

Rank	Domain Number	Items	Arithmetic Average	standard deviation	Level
.1	3	The role of educational information technology in increasing architectural innovation	3.89	1.288	High
.2	4	The role of educational media technology in increasing radical innovation	3.78	1.358	High
.3	2	The role of educational media technology in increasing disruptive innovation	3.77	1.243	High
.4	1	The role of educational media technology in increasing innovation	3.67	1.353	High
<b>Total Degree</b>			3.7829	0.9537	High

It is clear from the data in Table No. (2) that the role of educational information technology in increasing innovation processes in the educational process in Palestinian universities is significant, as the averages ranged between (3.89) to (3.67). This result indicates that the role of educational information technology In increasing innovation processes in the



educational process in Palestinian universities, it was significant, as indicated by the arithmetic Average, which amounted to (3.78), and with regard to the fields, where the third field related to architectural innovation got the first degree, and the arithmetic average reached (3.89) with a standard deviation (1.28), which is considered significant. The fourth field, related to radical innovation, received the second degree, with an arithmetic Average of (3.78) with a standard deviation of (1.35), which is considered significant. The second field, related to disruptive innovation, received the third degree, with an arithmetic Average of (3.77) with a standard deviation of (1.24), which is considered the second. It is significant, and the first field related to increasing innovation got the fourth and last degree, with an arithmetic Average of (3.67) with a standard deviation of (1.35), which is also considered large according to the scale prepared for this study.

The second question: Are there statistically significant differences at the significance level ( $\alpha = 0.05$ ) between the averages of the study sample responses about the role of educational media technology in increasing innovation processes in the educational process in Palestinian universities according to the gender variable?

In order to check the validity of the hypothesis related to the gender variable, the (T) test was used for independent samples, and the results of the following table show that:

**Table (3)** results of the t-test to indicate differences about the role of educational media technology in increasing innovation processes in the educational process in Palestinian universities according to the gender variable

Domain	Type	Number	Arithmetic Average	standard deviation	T value	significance level
<b>growing innovation</b>	Male	82	3.39	1.421	-3.268-	0.001
	Female	47	4.17	1.07		
<b>Disruptive innovation</b>	Male	82	3.72	1.298	-.764-	0.44
	Female	47	3.89	1.147		
<b>architectural innovation</b>	Male	82	3.83	1.284	-.723-	0.47
	Female	47	4	1.302		
<b>Radical innovation</b>	Male	82	3.87	1.245	0.916	0.36
	Female	47	3.64	1.538		
<b>TOTAL SCORE</b>	Male	82	3.70	0.978	-1.289-	0.2
	Female	47	3.92	0.901		

\* (Statistically significant at the significance level  $\alpha = 0.05$ )

Through the data contained in the previous table, we note that there are no statistically significant differences at the level of significance ( $\alpha = 0.05$ ) between the averages of the study sample responses about the role of educational media technology in increasing innovation processes in the educational process in Palestinian universities according to the gender variable in all fields and the total score. Except for the first field, the value of the significance level of the total score was (0.20), and this value is greater than (0.05). ) between the averages of the study sample's responses about the role of educational information technology in increasing innovation processes in the educational process in Palestinian universities according to the gender variable.

The third question: Are there statistically significant differences at the significance level ( $\alpha = 0.05$ ) between the averages of the study sample responses about the role of educational media technology in increasing innovation processes in the educational process in Palestinian universities according to the type of work variable?

In order to check the validity of the hypothesis related to the type of work variable, the (T) test was used for independent samples, and the results of the following table show that:

**Table (4)** Results of the (T) test to indicate differences about the role of educational media technology in increasing innovation processes in the educational process in Palestinian universities according to the work type variable

domain	Type	Number	Arithmetic Average	standard deviation	T value	significance level
<b>growing innovation</b>	Administrative	38	3.47	1.447	-1.090-	0.27
	academic	91	3.76	1.311		
<b>Disruptive innovation</b>	Administrative	38	3.79	1.094	0.038	0.96
	academic	91	3.78	1.306		
<b>architectural innovation</b>	Administrative	38	3.87	1.319	-0.131-	0.89
	academic	91	3.9	1.283		
<b>Radical innovation</b>	Administrative	38	3.87	1.298	0.461	0.64
	academic	91	3.75	1.387		
<b>TOTAL SCORE</b>	Administrative	38	3.75	0.92	-0.253-	0.8
	academic	91	3.79	0.971		

\* (Statistically significant at the significance level  $\alpha = 0.05$ )

We note through the data presented in the previous table that there are no statistically significant differences at the level of significance ( $\alpha = 0.05$ ) between the averages of the study sample responses about the role of educational media technology in increasing innovation processes in the educational process in Palestinian universities according to the variable of work type in all fields and degree. The value of the level of significance of the total score was (0.80), and this value is greater than (0.05). Between the averages of the study sample's responses about the role of educational media technology in increasing innovation processes in the educational process in Palestinian universities according to the work type variable.

**Table (5)** The arithmetic Averages and standard deviations for the university type variable

Domain	Type	Number	Arithmetic Average	standard deviation
<b>innovation growing</b>	Governmental	40	3.85	1.388
	private	41	3.85	1.014
	public	48	3.38	1.539
	<b>Total</b>	129	3.67	1.353
<b>Disruptive innovation</b>	Governmental	40	3.9	1.105
	private	41	3.66	1.277
	public	48	3.79	1.336
	<b>Total</b>	129	3.78	1.243
<b>architectural innovation</b>	Governmental	40	3.9	1.392
	private	41	3.66	1.277
	public	48	4.08	1.2
	<b>Total</b>	129	3.89	1.288
<b>Radical innovation</b>	Governmental	40	3.88	1.471
	private	41	3.49	1.399
	public	48	3.96	1.202
	<b>Total</b>	129	3.78	1.358
<b>TOTAL SCORE</b>	Governmental	40	3.88	1.1
	private	41	3.66	0.863
	public	48	3.8	0.903
	<b>Total</b>	129	3.78	0.953

The fourth question: Are there statistically significant differences at the significance level ( $\alpha = 0.05$ ) between the averages of the study sample responses about the role of educational media technology in increasing innovation processes in the educational process in Palestinian universities according to the university type variable?

In order to answer this question, which is related to the university type variable, the researchers used one-way analysis of variance, and the results of the following tables show that:

It is clear from the previous table that there are differences in the arithmetic Averages in the categories of the university type variable, where the largest was in favor of public universities and the least was in favor of private universities, and to find out the significance of the differences, a one-way analysis of variance was used, as shown in Table (6)

**Table (6)** results of one-way analysis of variance to indicate differences about the role of educational media technology in increasing innovation processes in the educational process in Palestinian universities due to the university type variable.

Domain	source of contrast	Squares SUM	Freedom Degrees	Squares Averages	F value	significance level
<b>growing innovation</b>	between groups	6.854	2	3.427	1.898	0.154
	within groups	227.472	126	1.805		
	Total	234.326	128			
<b>Disruptive innovation</b>	between groups	1.186	2	0.593	0.38	0.685
	within groups	196.736	126	1.561		
	Total	197.922	128			
<b>architectural innovation</b>	between groups	3.994	2	1.997	1.207	0.303
	within groups	208.486	126	1.655		
	Total	212.481	128			
<b>Radical innovation</b>	between groups	5.387	2	2.693	1.472	0.233
	within groups	230.536	126	1.83		
	Total	235.922	128			
<b>TOTAL SCORE</b>	between groups	0.978	2	0.489	0.534	0.588
	within groups	115.444	126	0.916		
	Total	116.422	128			

\* (Statistically significant at the significance level  $\alpha = 0.05$ )

Through the data contained in the previous table, we note that there are no statistically significant differences at the level of significance ( $\alpha = 0.05$ ) between the averages of the study sample responses on the role of educational media technology in increasing innovation processes in the educational process in Palestinian universities according to the university type variable, on all fields. The quantitative degree, as the value of the level of significance above the total score was (0.58), and this value is greater than (0.05). The responses of the study sample about the role of educational information technology in increasing innovation processes in the educational process in Palestinian universities according to the university type variable.

## **Recommendations**

According to the results, the researcher came out with a number of recommendations, as follows:

1. Those in charge of Palestinian universities should continue to pay attention to innovation and activate it in all academic fields.
2. The need to continue activating the use of technology in the educational process in Palestinian universities.
3. The need to pay attention to activating the role of educational media within Palestinian universities.
4. The Palestinian Ministry of Higher Education should support Palestinian universities in order to continue activating innovation in them.
5. The necessity of conducting more studies related to innovation and applying them to another academic community that was not included in the current study.

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