

THE IMPACT OF E-LITERACY ON INCREASING THE USE OF ARTIFICIAL INTELLIGENCE FOR HIGH SCHOOL STUDENTS IN NABLUS

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Abstract – This research aimed to study the relationship between e-literacy and increasing the use of artificial intelligence technologies among secondary school students in Nablus Governorate in Palestine, and the consequent increase in the level of cognitive and scientific achievement, through a study population consisting of all secondary school students in Nablus during the year 2025, and their number (15,682) male and female students, a random sample was selected and (375) questionnaires valid for analysis, with a recovery rate (2.4%) from the study population. The results concluded that there is a statistically significant effect of e-literacy on increasing the use of artificial intelligence with an explanatory value of (32.9%). Where The researchers recommended the relevant authorities to provide the appropriate environment for literacy among secondary school students by developing a strategic plan that starts with preparing students from the previous stages of the secondary stage and preparing educational curricula that support this, and preparing and training teaching

Keywords – E-literacy, artificial intelligence, digital transformation, secondary schools, Nablus Pales

1. INTRODUCTION

In light of the rapid technological developments in the world, and what countries seek to emulate digital transformation and introduce it in most of the operational procedures in institutions, the educational sector had to witness a revolution in this field to emulate what the world around the student is witnessing, and Palestine is like other countries that sought to eradicate electronic literacy among students, especially in light of the conditions in the Palestinian territories that force the educational sector to rely on distance learning most of the time. However, the real benefit of these technologies is related to the extent to which students have the skills to deal with technology, especially with the emergence of digitalization programmed and systems that increase the importance of artificial intelligence as an effective educational tool that contributes to improving the quality of education and developing students' skills, which means that e-literacy starts at school.

In the midst of the challenges that some countries of the world are witnessing in organizing their population structure, Palestine was one of the countries distinguished by its youthful population, as the Palestinian society is a young society, with more than a third of its population under the age of 15 years, according to a report issued by the Palestinian Statistics Centre through a report reviewing the population situation in Palestine on the occasion of World Population Day. The report indicated that the proportion of individuals in the age group (0-14 years) is estimated at 37% of the total population in Palestine in mid-2023. The percentage of individuals aged (65 years and above) was 4 per cent. [1]. Perhaps the conflicts and challenges experienced by the Palestinian citizen, which make him believe that his refuge in liberation is to cling to his right to education and adhere to it, was one of the reasons that led to what the data (PCBS) indicated that the illiteracy rate has decreased significantly since 1997, as the illiteracy rate among the Palestinian population 15 years and above decreased from 13.9% in 1997 to 2.1% in 2023 [2].

The question here is whether Palestine will maintain the level of electronic literacy as it has maintained the level of alphabetic literacy, and in order to achieve this, it is necessary to start early in order to catch up. It can be said that the lockdowns faced by the world in 2020 and the spread of Covid-19 had an impact on the orientation of many aspects of life to electronic programs and systems and the adoption of digitization in obtaining many services, especially in the field of education, which had a role in the beginning of students' interaction with electronic services and programs. Since the new generation of young people, especially those aged 16-18 years, are the future of this country and are growing up with a new generation of artificial intelligences, are they able to deal with them and employ them to serve their future and increase their knowledge, and is there anyone to guide them to adjust and settle this relationship to serve their interests, develop their knowledge and create their future?

Before delving into the merits of the study, it was necessary to standardize some concepts, the most important of which is the concept of artificial intelligence [3] that it is one of the advanced technologies used and can be used in accounting and

contributes to the management of accounting processes and tasks with mechanisms with development and intelligence that exceeds the human being who is its creator and provider of knowledge and sensory basics.

While [4] defines it as "a set of techniques and tools that are used to create technological systems that can perform tasks that are considered intelligent similar to those performed by humans such as machine learning, natural language processing, robotics, computer vision, planning and prediction". According to [5] "AI is divided into two parts, one of which is imitating humans by simulating human behavior and the other is solving complex problems by machine". Perhaps one of the most extensive books that detailed most aspects of AI was by [6] where she pointed out that the main goal of AI is to enable computers to perform tasks that the mind can normally perform, such as thinking, which is the quality of intelligence, and it has a richly organized space and includes various abilities to process information.

Here, the two researchers see a definition that combines these opinions and other definitions of artificial intelligence as "it is the result of what man has entered during decades of data to a machine that was made and programmed to process this data and output it with information, movements or any form of output required by the programmer, and perhaps the superiority of artificial intelligence in thinking and processing things came from the multiplicity and difference in the thinking of the elite human brains that dealt with it and integrated their intelligence over years, which enriched the nature of the outputs performed by artificial intelligence."

The concept of e-literacy is defined by [7] "the illiteracy that must be partially or completely eliminated to reach modern learners who are able to learn online efficiently and effectively". [8] believes that the concept of digital literacy encompasses the cognitive, social and emotional aspects of working in a computer environment. [9] indicates that "digital illiteracy is a component of cultural illiteracy in general, and there are those who associate it with the illiteracy of dealing with computers and modern information technology (digital illiteracy) and those who associate it with the lack of basic skills in how to deal with information resources and achieve optimal investment in them". [10] defined it as "the weakness and lack of theoretical knowledge in digital information, the possession of digital skills and digital intelligence to deal with modern technology in all its forms, as well as the deficiency in practical practices with these technological media in terms of obtaining information and knowledge (digital content) and communicating with others at any place and time, resulting in the inability to deal well with any digital issue when it appears in the digital environment."

Based on these definitions and other definitions and concepts that the researchers have seen, they define e-literacy as "everyone who needs to break the barrier of knowledge of digitization programs and systems to be followed by a continuous learning process for everything that is developed in the field of technology and artificial intelligence, to be able to keep up with the rapid development and not be out of the future ecosystem."

Since this generation of young people is distinguished by the availability of many means of well-being and the availability of all the necessary needs for creativity, it is logical that the percentage of known gifted people increases.

In a study conducted by [11] investigated the use of artificial intelligence applications in gifted education. The findings revealed that there was no significant interaction in the use of AI applications among gifted students based on their academic degree, nor was there any interaction regarding the challenges that hinder the integration of AI applications in education. Among the study's recommendations was the need to raise the awareness of gifted students about the importance of utilizing artificial intelligence in the educational process, [12] indicated that the use of technology in education has a positive impact on the teaching and learning processes, as it made it an easy process that can be obtained in seconds, and saves time and effort in delivering information to students, and one of the most prominent features of this era in which we live is the tremendous flow of knowledge and information and the variety and speed of obtaining it, connected to modern communication technology, which affected many sectors, the most important of which is the education sector.

In the same context, through a study conducted by [13] on the use of artificial intelligence applications in education, which aimed to investigate the nature of the relationship between the use of artificial intelligence applications in education, it was concluded that "the degree of use of artificial intelligence applications in English language learning such as Grammarly, Google translate, Duolingo, ChatGPT, by the sample members was high, and that the degree of engagement in learning the English language among government secondary school students in Mafraq was high, and cognitive engagement came first, then behavioral engagement, and finally emotional engagement, indicating a positive correlation between the use of AI applications and students' engagement in learning the English language."

In a study conducted by [14] aimed to explore the effectiveness of AI applications in enhancing the instructional design of digital content. The findings highlighted that AI plays a pivotal role in advancing instructional design practices by improving the skills of both teachers and educational technology specialists. This is achieved through the development of high-quality curricula and online learning materials, the enrichment of core instructional content, and the support provided to educational technology specialists in acquiring essential design skills. [15] pointed out that "with the introduction of AI applications in the field of educational design, the general form of digital content production practices and learning objects will change, and the process of course development will be redefined in new ways based on data analysis and digital applications, so we must first assess the human and technological capabilities of artificial intelligence, to avoid error in data analysis, then apply an effective knowledge management system as one of the most important technological and human infrastructure, which educational institutions need before developing it."

In a study by [16] aimed at a cognitive achievement test to measure the cognitive aspect of e-learning and an observation card for the performance aspect of e-learning skills indicated that "the ability to learn and deal with artificial intelligence is independent of the level in the mental capacity of the student in terms of ease of learning and readiness to learn".

In a study that adopted the quasi-experimental approach of [17] through which it applied a model called Hamdan model, which is based on the use of synchronous and asynchronous digital platforms in presenting and solving tasks, the results showed that training according to Hamdan model in e-learning has a positive and statistically significant effect on professors' attitudes towards e-learning."

A study conducted by [18], they concluded that "the obstacles to the use of e-learning in public schools in Nablus Governorate from the perspective of educational supervisors are not due to gender or years of supervisory experience, but rather related to the amount of training and follow-up received by the supervisor, and not due to the scientific qualification variable, as the researchers attribute this result to the fact that the nature of the scientific qualification of male and female educational supervisors does not address the understanding and real application of electronic learning but depends heavily on less supervisory methods.

In a study by [19] aimed to examine the impact of employing artificial intelligence techniques on the academic achievement of eighth-grade female students in Islamic education, and by relying on the semi-experimental method, the results of this study came out to prove the effectiveness of artificial intelligence techniques in academic achievement as it concluded that "using artificial intelligence techniques in solving activities led to changing the educational environment for students, which increased their desire to participate and increased their motivation towards learning, and artificial intelligence techniques provide multiple images and shapes and colorful which attracts the students' interest and makes them more active and more able to learn. For his part, [20] pointed out in his study on the use of artificial intelligence in the development of extracurricular skills for secondary school students, that it is possible to benefit from artificial intelligence in the development of extracurricular skills for secondary school students through the provision of supplies and expertise and the launch of mental creativity in students with the provision of laboratories, curricula and teaching staff and the opening of the fields that students have in completing assignments without restriction.

A review of the previous studies shows the diverse results about the importance of artificial intelligence and its integration into the educational process, and its relationship with raising and improving the level of scientific achievement, and some of these studies shed light on the obstacles and challenges faced by educational institutions to enter this new phase of the development of education. These studies and their questions and recommendations have had an important impact on enriching knowledge and guiding researchers to new data in their field of study. Previous studies dealt with the extent to which teachers and supervisors employ AI programs in the educational process and their readiness to keep pace with this educational revolution.

Through life experiences and academic expertise, the researchers noticed that there are no interconnected programs that ensure e-literacy, whether among students in secondary schools or through university students who will be future teachers, supervisors or decision-makers. Through the researchers' awareness of the importance of complementarity in educational institutions and society, this study came to identify the effects of e-literacy in increasing the use of artificial intelligence for secondary school students, as previous studies and research concluded the importance of artificial intelligence and its role in raising the level of scientific achievement of students and their ability to keep pace with the world around them, and hence this study came to see the plan that precedes the application of artificial intelligence in the educational process, which is the extent of students' readiness and their level of knowledge and knowledge of the uses of artificial intelligence, as the student is the basis of the educational process. It is no secret that the exceptional circumstances in which Palestinian students live are a reason no less important than the results of COVID-19, which led to reliance on distance learning and the use of artificial intelligence programs to ensure the continuity of the educational process. However, the same exceptional circumstances that Palestinian students live in, such as road closures and constant incursions that hinder access to school, have hindered the ability of some students to keep up with the rapid development in the field of artificial intelligence or digitization by their own efforts, whether for financial reasons or for cognitive and guiding reasons. The importance of this study from a practical point of view is that one of the researchers is a mother of secondary school students who observes the impact of artificial intelligence and the use of educational platforms on improving the performance of her students and the obstacles they face, while the other researcher has a PhD in management and holds academic and administrative positions at Lincoln University in Malaysia, and they realized the importance of this study in the practical context and the need to work on preparing and preparing secondary school students in terms of artificial intelligence literacy. As for the scientific importance of the study, it appears through its measurement of the impact of e-literacy on increasing the use of artificial intelligence for secondary school students in Nablus, this comes in the study's contribution to knowledge enrichment and a deeper understanding of the nature of the relationship, and directing future research towards a better understanding of e-literacy and the use of artificial intelligence, and finally this study provides a scientific basis that contributes to directing efforts and effective planning to ensure building a generation that is not isolated from its reality and helps Palestine maintain its advanced position in e-literacy as it has maintained its position in alphabetic literacy.

1.1 Study Questions

In light of the above, the research seeks to answer the following questions:

- Is there a statistically significant effect of e-literacy on increasing the use of artificial intelligence for secondary school students in Nablus?
- What is the level of knowledge about artificial intelligence and its uses among secondary school students in Nablus?
- What is the level of use of artificial intelligence in the educational process among secondary school students in Nablus?
- What is the level of practical experience in using AI programs and applications among secondary school students in Nablus?

The answers to these questions will help to identify the level of high school students' knowledge of AI educational programs and their uses and the degree of reliance on them, and aims to identify the role of public schools in Nablus governorate in providing a learning environment for high school students, what are the sources of knowledge of high school students in public schools about AI programmes, and what is the role of the teaching and administrative staff in public schools in guiding and motivating students on the uses of AI.

2. METHOD AND PROCEDURES

To accomplish the objectives of the study, the researchers designed a questionnaire informed by theoretical literature and previous studies. The instrument initially comprised 31 items distributed across three main domains: knowledge of artificial intelligence and its applications, the use of artificial intelligence in the educational process, and practical experience with AI programs and applications. These dimensions were intended to measure the impact of e-literacy on enhancing the utilization of artificial intelligence among secondary school students. The questionnaire was reviewed by three expert referees, and modifications—including additions and deletions—were made based on their feedback. The statistical validity of the tool was confirmed through the calculation of Pearson's correlation coefficient between each item and the total score. The study employed a descriptive-correlational research design, deemed the most appropriate for this type of investigation. The study population included all secondary school students in Nablus during the academic year 2024/2025, totaling 15,682 male and female students according to the statistics of the Nablus Directorate of Education. A random sample was drawn, and 375 valid questionnaires were successfully collected for analysis, representing 2.4% of the study population.

3. RESULTS OF THE STUDY

Table (1): Demographic Distribution of the Study Sample

Variable	Category	Number	Percentage
Gender	Male	177	47.2%
	Female	198	52.8%
	Total	375	100.0
Grade	Tenth	156	41.6%
	Eleventh	89	23.7%
	Twelfth	130	34.7%
	Total	375	100.0
Residents	City	98	26.1%
	Village	252	65.3%
	Camp	32	8.5%
	Total	375	100.0
Specialty	Scientific	84	22.4%
	Literary	135	36.0%
	Industrial	35	9.3%
	Commercial	9	2.4%
	None	112	29.9%
	Total	375	100.0

The above table indicates the demographic information of the students participating in this study, where the distribution ratios of the sample converge with respect to the gender of the students, which supports the coverage of the results for both genders. As well as in the secondary school classes. However, the place of residence focuses on village students and may have little impact on external influences as most village students' study in the city, but the influences related to the student, his needs and experiences will be more centered on village students.

Table (2): Pearson Correlation Between Individual Items and Total Score

Paragraph number	Correlation Coefficient (t)	Statistical Significance	Paragraph number	Correlation Coefficient (t)	Statistical Significance
Knowledge of artificial intelligence and its uses					
1	0.584	0.00**	2	0.614	0.00**

Use of artificial intelligence in the educational process					
3	0.710	0.00**	9	0.434	0.00**
4	0.689	0.00**	10	0.488	0.00**
5	0.582	0.00**	11	0.463	0.00**
6	0.762	0.00**	12	0.635	0.00**
7	0.521	0.00**	13	0.538	0.00**
8	0.579	0.00**			
Practical experience in using artificial intelligence programs and applications					
14	0.494	0.00**	21	0.675	0.00**
15	0.784	0.00**	22	0.574	0.00**
16	0.429	0.00**	23	0.486	0.00**
17	0.765	0.00**	24	0.649	0.00**
18	0.559	0.00**	25	0.788	0.00**
19	0.474	0.00**	26	0.417	0.00**
20	0.751	0.00**	27	0.448	0.00**

** Statistically significant at ($0.01 \geq \alpha$)

Table (2) shows that all correlation values between the items of each domain and the total domain score are statistically significant. This result reflects a strong internal consistency among the items of the scale, thereby confirming the validity of the instrument in accurately measuring the constructs it was designed to assess.

3.1 Stability Questionnaire

The results revealed that the value of Cronbach's alpha reliability coefficient for the overall scale was high, reaching (0.838). This indicates that the instrument possesses a high degree of reliability, confirming its suitability for application and its ability to achieve the objectives of the study.

4. ANALYSIS OF THE RESULTS

Results of the first question: Is there a statistically significant effect of e-literacy on increasing the use of artificial intelligence for secondary school students in Nablus?

Table (3): Regression Results: Impact of E-Literacy on AI Use among Secondary Students in Nablus.

Variables		Beta	R	R ²	t value	Statistical Significance
Knowledge of artificial intelligence	Use of artificial intelligence in educational process	0.190	0.570	0.329	3.910	0.000

	Practical experience in using artificial intelligence programmers and applications	0.161			2.831	0.000
	Increased use of artificial intelligence	0.145			4.599	0.000

**** statistically significant at the significance level ($\alpha \leq 0.01$), * statistically significant at the significance level ($\alpha \leq 0.05$)**

To answer the first question, Pearson Correlation coefficient was used to find the effect of e-literacy on increasing the use of artificial intelligence for secondary school students in Nablus, as shown in Table (3).

The data presented in Table (3) demonstrate a statistically significant effect of e-literacy on enhancing the use of artificial intelligence among secondary school students in Nablus. The correlation coefficient (R) was 0.570 with a significance level of (0.000), confirming the strength and statistical significance of the relationship. Moreover, e-literacy accounted for 32.9% of the variance in the use of artificial intelligence, which reflects a substantial explanatory power. These findings are in line with previous research, particularly the results reported by Abdulaziz (2021).

To address the second research question, the arithmetic means and standard deviations for secondary school students' knowledge of artificial intelligence and its applications in Nablus were calculated, as presented in Table (4).

Results of the second question: What is the level of knowledge about artificial intelligence and its uses among secondary school students in Nablus?

Table (4): Mean and Standard Deviation of AI Knowledge and Usage Among Secondary Students in Nablus (n = 375, Descending Order)

V a r i a b l e s	A	x	e	s	F r e q u e n c i e s	P e r c e n t a g e s
How artificial intelligence is used in the study	Through trial and error				8 4	2 2 . 4 %
	Curriculum and computer labs at school				1 3 5	3 6 . 0 %
	Through friends and acquaintances				3 5	9 . 3 %
	Recommendations from my teacher				9	2 . 4 %
	Special Training Courses				1 1 2	2 9 . 9 %
Sources of knowledge through artificial intelligence	Through trial and error				9 4	2 5 . 1 %
	Curriculum and computer labs at school				6 8	1 8 . 1 %
	Through friends and acquaintances				1 4 4	3 8 . 4 %
	Recommendations from my teacher				6 5	1 7 . 3 %
	Special training courses				4	1 . 1 %

The data shown in table (4) indicate that (36%) of secondary school students used artificial intelligence through the educational curriculum and computer labs at school, and (38%) of the sources of knowledge through artificial intelligence through friends and acquaintances. This indicates the weak role played by the school in introducing students to the mechanisms of using artificial intelligence and its programs that can enrich the educational process. As for how to use artificial intelligence, 36% of students had the opportunity to use computer laboratories, while the rest of the sample did not have the opportunity to do so, which may be due to the lack of computer laboratories in schools or the lack of interest of the teaching and administrative staff in the school in this regard. This result is consistent with the studies of (Toukan and Mousa, 2021) and (Fadel, 2024). The previous tables also indicate that AI is not limited to a category of gifted students or those with the student's mental capacity, confirming the studies of (Al-Tamami, 2023) and (Abdulwahab, 2023).

Results of the third question: What is the level of using artificial intelligence in the educational process among secondary school students in Nablus?

To answer the third question, the arithmetic means and standard deviations of the level of using artificial intelligence in the educational process among secondary school students in Nablus were extracted, as shown in Table (5).

Table (5) Mean and Standard Deviation of AI Usage in Education Among Secondary Students in Nablus (n = 375, Descending Order)

Paragraphs	Arithmetic mean	Standard Deviation	Degree of agreement
AI system allows the student to access the educational material at any time	4 . 1 7	0 . 9 6	H i g h
I feel that the use of digital learning in AI helps in the enrichment of knowledge and science.	3 . 7 8	0 . 8 9	H i g h
AI gains the use of scientific thinking skills in solving problems.	3 . 7 1	0 . 9 3	H i g h
The use of digital learning in AI helps to provide exciting applications for students	3 . 7 0	0 . 8 6	H i g h
Using AI in class increases your engagement	3 . 5 7	1 . 0 4	M e d i u m
I feel that digital learning using AI increases the effectiveness of the educational process.	3 . 5 4	0 . 9 5	A v e r a g e
Professors are AI-proficient and key student resources.	3 . 2 4	1 . 0 8	A v e r a g e
Using AI in school requires extra time	3 . 1 7	0 . 8 7	M e d i u m
AI programmers and applications are used in all curricular subjects indirectly	2 . 9 7	0 . 9 8	A v e r a g e
AI programmers and applications are used in all curricular subjects directly	2 . 8 4	0 . 9 4	M e d i u m
Ministry of Education schools offer sufficient technical support for AI integration in education.	2 . 7 6	1 . 0 5	A v e r a g e
O v e r a l l s c o r e	3 . 4 0	0 . 4 8	A v e r a g e

The data shown in table (5) indicate that the level of application of the use of artificial intelligence in the educational process among students of secondary schools in Nablus was moderate, as the arithmetic mean of the total score was (3.40) with a standard deviation of (0.48).

Table (5) shows that the statement "The AI system allows the student to access the educational material at any time" ranked first, with an arithmetic mean of 4.17 and a standard deviation of 0.96. The second-highest statement was "I feel that using digital learning in AI helps in achieving enrichment of knowledge and science," with a mean of 3.78 and a standard deviation of 0.89. The lowest-rated statement was "Ministry of Education schools provide adequate technical support to facilitate the use of AI in the educational process," with a mean of 2.76 and a standard deviation of 1.05. These results highlight the critical importance of enhancing students' knowledge in the field of artificial intelligence, as it directly contributes to improving both their knowledge acquisition and academic achievement. These findings are consistent with previous studies (Mohammed, 2020; Harahsha, 2023; Al-Desouki Ali, 2024; Al-Saqriya, 2024).

Results of the fourth question: What is the level of practical experience in using artificial intelligence programs and applications among secondary school students in Nablus?

To answer the fourth question, the arithmetic means and standard deviations of the level of practical experience in using artificial intelligence programs and applications among secondary school students in Nablus were extracted, as shown in Table (6).

Table (6): Mean and Standard Deviation of Practical Experience with AI Programs and Applications Among Secondary Students in Nablus (n = 375, Descending Order)

Paragraphs	Arithmetic mean	Standard Deviation	Degree of agreement
I have the ability to download books and programmes from the internet and upload them	3 . 9 9	1 . 0 2	H i g h
I have the ability to solve assignments online appropriately.	3 . 7 9	0 . 9 5	H i g h

I use AI for educational enrichment and to get typical answers.	3.79	0.92	H i g h
I have the ability to create an email account and use it to communicate on academic and official topics.	3.71	1.08	H i g h
I have the ability to obtain information from more than one source and integrate it into another source.	3.70	1.08	H i g h
I can use search engines to browse websites that support AI.	3.68	0.93	H i g h
I use some computer programmers to search for scientific topics and extracurricular activities.	3.66	1.04	M e d i u m
AI programmers and applications are my second resort if the material is not fully understood by the teacher.	3.49	1.24	A v e r a g e
Distance learning has played a major role in the trend towards the use of AI programmers and applications.	3.46	1.07	M e d i u m
The school's computer rooms provide all the necessary research supplies at all times.	3.31	1.18	A v e r a g e
I follow AI websites and influences related to the educational process.	3.26	0.87	A v e r a g e
I rely on summarizing the scientific material through AI and using it as a reference for study.	3.17	1.12	M e d i u m
My use of AI is based on a total reliance on solving assignments to obtain grades and marks.	3.05	1.18	M e d i u m
The Palestinian curriculum and educational programmed encourages the use of AI	3.02	1.07	A v e r a g e
Overall score	3.43	0.74	A v e r a g e

The data shown in Table (6) indicate that the level of practical experience in using AI programs and applications among secondary school students in Nablus was moderate, as the arithmetic mean of the total score was (3.43) with a standard deviation of (0.74). It is clear from Table (6) that (I have the ability to download and upload books and programs from the Internet) ranked first with an arithmetic mean of (3.99) with a standard deviation of (1.02), and came in second place (I have the ability to solve assignments electronically appropriately) with an arithmetic mean of (3.79) with a standard deviation of (0.74). The lowest was (the Palestinian curriculum and educational programs encourages the use of artificial intelligence) with an arithmetic mean of (3.02) with a standard deviation of (1.07). The studies of (Al-Desouki Ali, 2024), (Sayyadi, 2023) and (Hamdan and Melody, 2024) confirm the findings.

5. DISCUSSION OF THE RESULTS

The Pearson Correlation Coefficient was employed to examine the effect of e-literacy on enhancing the use of artificial intelligence among secondary school students in Nablus. The results revealed a statistically significant effect, with a correlation coefficient (R) of 0.570 and a significance level of 0.000, indicating that e-literacy significantly contributes to increasing the use of artificial intelligence, explaining 32.9% of the variance. Furthermore, arithmetic means and standard deviations were calculated to assess students' knowledge and use of artificial intelligence. The data showed that 36% of secondary school students accessed AI through the educational curriculum and computer labs at school, while 38% acquired knowledge of AI through friends and acquaintances.

Arithmetic means and standard deviations were calculated to assess the level of AI usage in the educational process among secondary school students in Nablus. The results indicated that the overall level of AI application was moderate, with a total score mean of 3.40 and a standard deviation of 0.48. The highest-rated item was "The AI system allows the student to access the educational material at any time," with a mean of 4.17 and a standard deviation of 0.96. The second-highest item was "I feel that the use of digital learning in AI helps in achieving the enrichment of knowledge and science," with a mean of 3.78 and a standard deviation of 0.89. The lowest-rated item was "Ministry of Education schools provide adequate technical support to facilitate the use of AI in the educational process," with a mean of 2.76 and a standard deviation of 1.05.

Arithmetic means and standard deviations were calculated to evaluate the level of practical experience in using AI programs and applications among secondary school students in Nablus. The results indicated that students' practical experience was moderate, with a total score mean of 3.43 and a standard deviation of 0.74. The highest-rated item was "I have the ability to download books and programs from the Internet and upload them," with a mean of 3.99 and a standard deviation of 1.02. The second-highest item was "I have the ability to solve assignments electronically appropriately," with a mean of 3.79 and a standard deviation of 0.74, followed closely by "I have the ability to solve assignments electronically," with a mean of 3.79 and a standard deviation of 0.95. The lowest-rated item was "The Palestinian curriculum and educational programs encourage the use of artificial intelligence," with a mean of 3.02 and a standard deviation of 1.07).

Based on the results of the study, the analysis shows that there is a statistically significant effect of e-literacy on increasing the use of AI for secondary school students in Nablus with an explanatory value of (32.9%). In other words, the more knowledgeable high school students are about electronic programs and systems and have overcome the stage of e-literacy, the more these students will use artificial intelligence programs and platforms and employ them to improve and raise their scientific and cognitive level. The results also confirmed that the process of e-literacy through the educational environment provided by the public school and the ability of the educational staff in the school to deal with educational programs and platforms, and the Palestinian curriculum does not sufficiently simulate the requirements of literacy and does not encourage the use of AI appropriately.

6. Recommendations

With regard to general recommendations, the researchers, through what has been presented from previous studies and the results of the current study, emphasize that literacy among secondary students is the first step towards keeping pace with developed countries in the electronic and digital fields, as they recommend the need to:

- The relevant authorities should provide the appropriate environment for the literacy of secondary school students by developing a strategic plan that starts with preparing students from the previous stages of the secondary stage and preparing educational curricula that support electronic literacy and enhancing integration between the parties involved, whether by preparing and training teaching and administrative staff in schools to start the practical application of electronic literacy, equipping computer laboratories in schools and providing them with sufficient numbers and the necessary needs to provide an appropriate research environment for students at all times and ensure equity in knowledge and learning.
- The researchers recommend that this strategic plan be accompanied by a similar plan from the competent authorities at the Ministry of Education to identify the needs of university graduates, especially in the educational field, by raising their scientific and practical level and their expertise in the use of artificial intelligence in the educational process. This will make the teacher enter the field of education armed with all that is modern in the field of knowledge of artificial intelligence and how to use it to serve the educational process.
- Create university specializations towards educational technology specialists to support and reference schools, and create educational platforms that mimic the Palestinian curriculum plans.
- Designing educational programs to raise awareness of the importance of employing AI applications in education and the importance of preparing for this transition.
- Given the importance of scientific research in analyzing the issue and proposing appropriate solutions, the researchers believe that this research paper can be the nucleus of more specialized and expanded research at the level of Palestine or other countries in the field of e-literacy.

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