

The Role of E-Learning in Teaching Mathematics from the Perspective of Second Cycle Teachers in Primary Education

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Abstract: The research aims to explore the significance of the role of e-learning in teaching mathematics from the perspective of second cycle primary education teachers. It examines the variations in their opinions based on research variables, identifies the challenges that may prevent the use of e-learning in mathematics teaching, and determines the data that could facilitate the use of e-learning in teaching mathematics to primary education students. Utilizing a descriptive methodology suitable for the nature of this study, the research was conducted on a sample of second cycle primary education teachers for the 2023/2024 academic year. Through a questionnaire used as a data collection tool, the following results were obtained: Most second cycle primary education teachers employ e-learning during the planning phase through websites, rely heavily on electronic books during the implementation phase, and during the evaluation phase, social media plays a significant role in assessing students due to the ease of communication between the teacher and the guardian.

Keywords: E-learning; Teaching Mathematics; Second Cycle Teachers.

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I- Introduction :

The first wave of e-learning, emerged in the mid-1990s and early 21st century, necessitating educators, researchers in the field of education, and stakeholders in the development of the nation's system to keep pace with changes in modern electronic technology. E-learning and its methods and tools that facilitate the transfer and dissemination of knowledge have become an undeniable role that cannot be ignored. Moreover, understanding the modern variables of communication and its technology has helped provide the appropriate environmental conditions for the educational process that uses communication technology suitably through the dissemination of information. This has shifted the student from being a passive individual who receives information to an active participant in the e-learning environment, using all available capabilities. Despite all this, the current educational system still faces challenges in preparing its individuals for the information society, which considers dealing with information technology one of its objectives (Blum, 1997). These modifications have resulted in the development of the presentation of scientific material and its adaptation to student preferences.

In the context of this rapid electronic development, it was essential for senior officials, politicians, and researchers in Algeria to keep up with it. This was embodied through the adoption by the Algerian Ministry of National Education of a project to digitize the sector, use information and communication technology, provide digital tablets, and attempt to generalize them in the primary education stage. It has become necessary to start activating e-learning in mathematics due to the special importance of this subject, and rely on it for success in studies and life in general because it is fundamentally the axis on which digital field development is based.

Furthermore, "e-learning enhances the role of the teacher as a supervisor, guide, and organizer of the educational process, thus becoming compatible with the developments of the modern era" (Al-Gendi & Zakaria, 2005, p. 387). The teacher is the cornerstone of the educational process and is primarily responsible for preparing a generation that keeps up with and comprehends modern technology, becoming "a planner, designer, communication organizer, objective preparer, diagnostician, guide of the educational and learning process, behavior engineer, controller of the learning environment, and provider of necessary learning facilities, thus demanded to perform numerous roles to elevate the process as a whole" (Al-Asaf & Al-Sarayrah, 2012, p. 46).

The use of e-learning in teaching mathematics is one of the modern trends that many studies have recommended for its effectiveness. These studies show that "a person can remember 10% of what they read, 20% of what they hear, 50% of what they see and hear, and about 90% of what they hear, see, and do" (Fathallah, 2004, p. 162). From the perspective of learning and teaching mathematics, some consider the computer as a good mediator for it, and one of the main reasons to use computers in teaching mathematics is "the significant improvement in the attitudes of teachers and students towards studying mathematics, in addition to the inevitability of our schools and curricula facing and keeping pace with the immense cognitive and technical development, while the internet provides the learner the opportunity to learn independently, through peers, and through the experiences of teachers, guides, and specialists on that network" (Al-Mughira, 1989, p. 247). The researcher in the current study seeks to determine the effectiveness of using e-learning in teaching mathematics from the perspective of second cycle teachers in primary education.

1. Study Problem:

The Algerian Ministry of National Education, like most ambitious education systems worldwide, strives to enhance and develop information and communication technology and integrate it into the educational-learning system. This aims to improve and enhance the outputs of this process in primary schools, as evidenced by several laws, ministerial instructions, and government decisions, including the decision dated December 28, 2010, which established a national committee for digitizing administrative and educational management in the national education sector. A national strategy was also developed and approved during the national conference held at the Mathematics High School in El Qubba on March 26 and 27, 2015. The framework document for the 2024/2025 school year emphasizes the utmost importance of e-learning, aiming to achieve a quality school that ensures equal opportunities for all children and fairness among them for quality, effective, and

inclusive education, and ensures the generalization of e-learning and the expansion of the use of electronic boards in other primary schools.

It is important to study how and to what extent teachers and professors use modern technologies in the learning and teaching process due to their positive impact on enhancing student achievement levels and understanding the extent of modern technology usage and the obstacles that prevent its use in other curricula from different educational stages (Abdul Karim, 2013).

As many studies have indicated, such as the study by (Al-Mazhur, 2023), this study aimed to understand the extent to which electronic games are used in teaching mathematics from the perspective of primary school teachers. The researcher used a descriptive survey methodology based on a questionnaire, and the study sample consisted of 79 randomly selected teachers. The study concluded that the use of electronic games in teaching mathematics from their perspective involves significant obstacles in teaching mathematics by primary school teachers.

The study by (Atallah, 2020) aimed to measure the level of e-learning and to know the degree of availability and use of modern methods in teaching mathematics. The researcher relied on a descriptive methodology using a questionnaire as a research tool, and the study sample consisted of 100 teachers from Najaf schools. The study reached several results, including knowledge of modern methods in the field of educational technology that can serve the educational process and some methods that may prevent their benefit, as well as identifying difficulties and obstacles that hinder the use of modern methods in the technological field.

The study by (Al-Balawi, Intisar, & Abdul Aziz, 2024) aimed to understand the degree of use of collaborative e-learning applications from the perspective of primary school teachers in Hail. The researchers used a descriptive survey methodology and used the questionnaire as a study tool. The study sample consisted of 333 primary school teachers in Hail. The study reached several results, including no statistically significant differences at the significance level ($\alpha \leq 0.05$) regarding the degree of use of collaborative e-learning applications from the perspective of primary school teachers in Hail, and no differences attributed to the variable of educational qualification. However, there were statistically significant differences attributed to the variable of job experience in favor of those with less than five years of experience and those with 6-10 years of experience who had training courses. The results also pointed out some obstacles, most notably the lack of appropriate infrastructure for internet networks in schools.

The study by (Ajaj & Ahmad, 2023) aimed to understand the reality of using e-learning strategies in teaching primary grade students from the perspective of teachers and educational supervisors in Mecca. The descriptive survey methodology was used based on a questionnaire. The study sample consisted of 14 educational supervisors and 202 teachers of primary grades. The study found that the use of e-learning strategies in virtual classrooms in teaching primary grade students from the perspective of teachers and educational supervisors was at a high level (average 4.18), and that 93.1% of teachers use active learning strategies, and 6.9% of teachers use the flipped classroom strategy, and 0.5% of teachers use strategies such as individual coaching, summarizing, direct interactive teaching, simulation and modeling, and gradual erasure in teaching primary grade students in synchronous e-learning environments. The benefits of using e-learning strategies in virtual classrooms in teaching primary grade students from the perspective of teachers and educational supervisors were very high (average 4.21), and the obstacles to using e-learning strategies in virtual classrooms in teaching primary grade students from the perspective of teachers and educational supervisors were high (average 4.04). The results also showed no statistically significant differences between the average responses of the study sample regarding the questionnaire axes according to variables (educational qualification, job title, years of experience, training courses). It is important to study how and practice and understand the extent to which teachers and professors use modern technologies in the learning and teaching process and their positive impact on raising the level of student achievement.

The study by (Buthaina, Sadina, & Ahlam, 2023) found that training and education on the use of modern technologies have a significant impact on teachers' performance without neglecting educational qualification, which contributes to awareness of electronic applications.

Therefore, the researchers saw the need to conduct a more specific and in-depth study to understand the reality of using e-learning in teaching mathematics from the perspective of second-cycle primary education teachers in the schools of El M'Ghair District, El Oued Province. Based on the foregoing, the study's problem is represented by the following main question:

Does the use of e-learning lead to an improvement in the level of teaching mathematics from the perspective of second-cycle primary education teachers?

Based on this main question, three sub-questions arise as follows:

- 1- Does e-learning lead to improved lesson planning efficiency in mathematics for second-cycle primary education teachers?
- 2- Does e-learning lead to improved lesson execution competencies in mathematics for second-cycle primary education teachers?
- 3- Does e-learning lead to improved evaluation competencies in mathematics for second-cycle primary education teachers?

2. Study Hypotheses:

- 1- E-learning leads to improved lesson planning competencies in mathematics for second-cycle primary education teachers.
- 2- E-learning leads to improved lesson execution competencies in mathematics for second-cycle primary education teachers.
- 3- E-learning leads to improved lesson evaluation competencies in mathematics for second-cycle primary education teachers.

3. Significance of the Study:

The importance of this research stems from the fact that:

- This research may contribute to helping mathematics curriculum developers to refine strategies and teaching methods in line with e-learning and its technologies.
- This research may reveal some actual obstacles that limit e-learning in the teaching of mathematics.
- This research may support second-cycle primary education teachers, encouraging them to use e-learning in teaching mathematics.

4. Objectives of the Study:

The current research aims to:

- Understand the role of using e-learning in teaching mathematics from the perspective of second-cycle primary education teachers.
- Identify differences from the perspective of second-cycle primary education teachers regarding the ability to control the use of e-learning during the teaching of mathematics, according to research variables.
- Explore the difficulties that may prevent the use of e-learning in teaching mathematics from the perspective of second-cycle primary education teachers.
- Identify data that could enhance the role of using e-learning in teaching mathematics.

5. Operational Definitions of Study Terms:

5.1 E-Learning:

Defined operationally in this study as interactions stemming from the use of information and communication technologies, and the investment in modern multimedia technologies; it aims to achieve the highest quality of educational methods and attract information and knowledge while managing various interactions and informational resources, thereby facilitating the delivery of mathematical experiences, presented in various forms using technological tools such as computers, their applications, and the electronic network.

5.2 Teaching Mathematics:

Defined operationally in this study as the effort made by teachers to provide mathematical experiences to second-cycle students in primary education, working to instill mathematical skills and mathematical thinking skills through the use of various strategies and tools, employed to achieve planned objectives.

5.3 Second Cycle of Primary Education:

Defined operationally in this study as the second stage of compulsory education in Algerian schools, referring to the third- and fourth-year classes of primary education.

6. Research limits:

This research was conducted within the following limits:

- **Temporal limits:** The research tool was applied in the first term of the academic year 2023-2024.
- **Spatial limits:** The research was limited to teachers of the second stage of primary education in the seventh district of El Oued Province, Algeria.
- **Human limits:** The current research was limited to a sample of teachers of the second stage of primary education, working in the seventh district of El Oued Province, Algeria.

II– Methods and Materials:

Defining the researched problem in its dimensions can only be achieved through a valid scientific method. (Al-Assaf, 1995) defines the scientific method as the path leading to the discovery of truth in sciences through a set of rules that govern the course of reasoning and its operations until a known result is achieved. Given that the subject of our study is the role of using e-learning in teaching mathematics from the perspective of second stage primary education teachers, we chose the descriptive method which is suitable for the nature of the topic. According to Mohamed El-Gohary (1975), the descriptive method is defined as the scientific methods used by the researcher to solve the problems of his research and is closely linked to the research tools that differ in the research methodology in that they are the means by which the researcher accesses information. This method is known as: "The method that relies on studying the phenomenon, is concerned with reality, describes the phenomenon accurately and clearly, and expresses it qualitatively or quantitatively" (Obeidat, Adas, & Abdulhaq, 2004, p. 203).

The research tool was distributed to a sample of second stage teachers in the Magrane district, randomly selected. In our study, we relied on the sample using a comprehensive survey method, covering all primary education teachers in Sidi Aoun municipality, every male and female teacher from the second stage.

Table (01): Illustrates the distribution of the study sample members

Teachers	Total
Males	26
Females	32

Total	58
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Source: Prepared by the research based on Magrane Administrative District Inspectorate 07

The current research aimed to study the role of using e-learning in teaching mathematics. To achieve this, a questionnaire was constructed as the main tool for data collection and directed at second stage primary education teachers. To achieve the research objectives, we prepared the questionnaire, through which the questionnaire paragraphs were formulated along with the research hypotheses based on the theoretical heritage that dealt with this topic in one of its variables and some related previous studies. After consulting experts in the field, the questionnaire was crafted containing three alternatives, where the respondent scores (3) points for "Yes," (2) points for "Sometimes," and (1) point for "No," as shown in the following table:

Table (02): Shows the distribution of scores for each alternative

Yes	Sometimes	No
3	2	1

Source: Prepared by researchers

1. Validity of the Research Tool:

1.1 Judges' Validity:

To ensure the face validity of the research tool, it was presented in its initial form to a group of judges from specialized professors. This was done to solicit opinions and take notes on the questionnaire. We presented the questionnaire to a group of judges consisting of university professors from the University of El Oued and experienced primary education teachers from the administrative district of Magrane. They were asked to provide their opinions on the clarity and appropriateness of the paragraphs for measuring the questionnaire. The aspects required for estimating face validity included:

- The appropriateness of the alternatives.
- The suitability of the linguistic formulation.
- The validity of the statements and their relevance to e-learning. Ten forms were retrieved, and the results of the arbitration were as follows: Some linguistic modifications were made to the questionnaire paragraphs, and after sorting the opinions and notes of the judges, two areas were identified and designated: the acceptance area and the modification area. The acceptance area was more significant, at 80%, and the modification area was at 20%.

1.2 Internal Consistency:

The internal consistency validity was calculated by finding the correlation coefficients between each dimension and the total test using Pearson's coefficient, as shown in the following table:

Table (03): Shows the values of the internal consistency validity coefficients

Dimensions	Correlation with Overall Grade
Lesson Planning Competencies	0.929
Lesson Implementation Competencies	0.39
Evaluation Competencies	0.577

Source: Prepared by the research based on Statistical package results

As shown in Table (03), the correlation coefficients between the total score and the scale dimensions were statistically significant at the 0.01 and 0.05 levels, and they are acceptable and significant, ranging from 0.390 to 0.928. It's worth noting that 0.39 and 0.57 represent a medium correlation but are significant and can be accepted within the limits of the current study.

2. Reliability

(Maqdam, 2007) defines test reliability as the degree of accuracy or stability of its results when applied to a sample of individuals on two different occasions. Reliability of the scale was verified using the split-half method, where we calculated the Pearson correlation coefficient between the individual paragraphs and the even-numbered paragraphs of the scale, yielding a value of 0.225. It was then corrected using the Spearman-Brown equation, resulting in a value of 0.407.

2.1 Appropriate Statistical Method:

We utilized the SPSS program for statistical analysis to verify the reliability of the Pearson scale through the split-half method. We calculated the correlation coefficient between the individual paragraphs and the even-numbered paragraphs of the scale, yielding a value of 0.255.

2.2 Decision Making:

Since we have only one qualitative variable and the data is in the form of repetitions of a nominal level variable, we choose the Chi-square goodness-of-fit test for adequacy. If the calculated X^2 is greater than the tabulated X^2 , we reject H_0 and accept H_1 , and vice versa. Using the SPSS program, if the level of significance is less than 0.05, then the Chi-square test is significant. Therefore, we reject the null hypothesis and accept the alternative hypothesis, and vice versa.

III- Results and discussion :

1. Presentation of the Results of the First partial hypothesis:

The first partial hypothesis states:

Electronic education leads to improving lesson planning competencies in mathematics among second-stage primary education teachers.

Data collection and calculation of frequencies specific to the dimension of lesson planning competencies yielded the following results:

Table (04): Illustrates the responses of the study sample regarding the paragraphs related to lesson planning competencies

N	Questionnaire paragraphs	Yes	No	Sometimes	Total occurrences
1	When I encounter difficulty preparing a lesson plan for mathematics, I communicate electronically with colleagues in the subject.	55	1	2	58
2	I utilize e-learning while preparing a mathematics lesson to enhance the teaching-learning process.	52	0	6	58
3	During the preparation of a mathematics lesson, I rely on electronic websites.	55	0	3	58
4	I use blogs and electronic pages during the planning of a mathematics lesson.	48	2	8	58

5	I use electronic books and bibliographic documents during the preparation for a mathematics lesson.	51	0	7	58
6	I strive to have digital literacy while preparing for a mathematics lesson.	58	0	0	58
7	When I face difficulties during the preparation for a mathematics lesson, I discuss the issue on social media platforms.	45	1	2	58
8	I rely on YouTube to download videos to determine the most effective scenarios for presenting mathematics material.	20	3	35	58
9	I use an electronic guide during the planning process for a mathematics lesson.	50	6	2	58

Source: Prepared by the research based on Respondents' answers

From Table (04), which shows the responses to the first dimension regarding lesson planning competencies, we find that paragraph (06) received the highest frequency, indicating that the study sample members actively seek to have a multimedia culture while preparing lessons.

Meanwhile, paragraph (08) received the lowest frequency, indicating that most of the study sample members do not rely on YouTube to download videos to determine the most effective situations for presenting mathematics material.

Table (05): Illustrates the responses of the study sample regarding the paragraphs related to lesson planning competencies

	Yes	No	Sometimes	χ^2	Degree of Freedom	Level of Significance
Occurrences	434	15	73	592.42	2	0.05

Source: Prepared by the research based on Statistical package SPSS results

In Table (05), we find that the level of significance equals 0.00, which is less than the significance level of 0.05. Therefore, the Chi-square test is significant, and the difference is in favor of respondents answering "Yes" with a percentage of 83.13. Thus, we reject the null hypothesis and accept the alternative hypothesis, which states that: Electronic education leads to improving lesson planning competencies in mathematics among second-stage primary education teachers.

2. Presentation of the Results of the Second partial hypothesis:

The second partial hypothesis states:

Electronic education leads to improving lesson implementation competencies in mathematics among second-stage primary education teachers.

Data collection and calculation of frequencies specific to the dimension of lesson implementation competencies yielded the following results:

Table (06): Illustrates the responses of the study sample regarding the paragraphs related to lesson implementation competencies

N	Questionnaire paragraphs	Yes	No	Sometimes	Total occurrences
1	I use electronic books to present some explanations in mathematics.	53	2	3	58
2	I use some interactive websites as a means to deliver mathematics lessons.	2	36	20	58
3	I utilize CDs to present some lessons in mathematics.	45	8	5	58
4	I use summaries of lessons in PowerPoint presentations.	30	13	15	58

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5	I use the internet during lessons in various scenarios to enhance understanding.	45	3	10	58
6	I access scientific material related to teaching mathematics.	40	8	10	58
7	I use forums and electronic pages to explain some mathematics lessons.	51	5	1	58
8	I use a projector to deliver mathematics lessons.	30	8	20	58
9	I use a computer or digital boards to deliver mathematics lessons.	50	0	8	58

Source: Prepared by the research based on Respondents' answers

From Table (06), which shows the responses to the first dimension regarding lesson implementation competencies, we find that paragraph (10) received the highest frequency, indicating that the study sample members use electronic books to provide some explanations in mathematics.

Meanwhile, paragraph (11) received the lowest frequency, indicating that most of the study sample members do not rely on interactive websites as a means to deliver mathematics lessons.

Table (07): Illustrates the responses of the study sample regarding the paragraphs related to lesson implementation competencies

	Yes	No	Sometimes	χ^2	Degree of Freedom	Level of Significance
Occurrences	346	83	93	255.32	2	0.05

Source: Prepared by the research based on Statistical package SPSS results

From the data in Table (07), we find that the level of significance equals 0.00, which is less than the significance level of 0.05. Therefore, the Chi-square test is significant, and the difference is in favor of respondents answering "Yes" with a percentage of 69.11. Thus, we reject the null hypothesis and accept the alternative hypothesis, which states that: Electronic education leads to improving lesson implementation competencies in mathematics among second-stage primary education teachers.

3. Presentation of the Results of the Third partial hypothesis:

The third partial hypothesis states:

Electronic education leads to improving lesson assessment competencies in mathematics among second-stage primary education teachers.

Data collection and calculation of frequencies specific to the dimension of lesson assessment competencies yielded the following results:

Table (08): Illustrates the responses of the study sample regarding the paragraphs related to lesson assessment competencies

N	Questionnaire paragraphs	Yes	No	Sometimes	Total occurrences
1	I provide parents with electronic websites that help them with homework assignments.	36	2	20	58
2	I publish exam models for assessment and exam preparation through the institution's page.	35	8	15	58
3	I use some applications on the smartphone in the process of evaluating students.	35	13	10	58
4	I publish the model answers for exams on the institution's official page.	35	13	10	58
5	I prepare models for evaluating students online.	35	13	10	58

6	I use the internet to explore modern methods of assessing students' academic achievements.	40	8	10	58
7	I publish exam results on the institution's website (Facebook page).	20	18	20	58
8	I ask students to record their homework assignments via video technology with the help of their parents for evaluation.	19	9	30	58
9	I utilize free messaging service via Messenger application to communicate with parents for evaluating their children.	46	3	10	58

Source: Prepared by the research based on Respondents' answers

From Table (08), which shows the responses to the third dimension regarding lesson assessment competencies, we find that paragraph (27) received the highest frequency, indicating that the study sample members benefit from the free messaging service via Messenger application to communicate with parents for the purpose of assessing their children.

Meanwhile, paragraph (26) received the lowest frequency, indicating that most of the study sample members do not rely on asking students to record their homework via video technology with the help of their parents for the purpose of assessing mathematics.

Table (09): Illustrates the responses of the study sample regarding the paragraphs related to lesson assessment competencies

	Yes	No	Sometimes	χ^2	Degree of Freedom	Level of Significance
Occurrences	296	81	145	140.08	2	0.05

Source: Prepared by the research based on Statistical package SPSS results

From the data in Table (09), we find that the level of significance equals 0.00, which is less than the significance level of 0.05. Therefore, the Chi-square test is significant, and the difference is in favor of respondents answering "Yes" with a percentage of 59.57. Thus, we reject the null hypothesis and accept the alternative hypothesis, which states that: Electronic education leads to improving lesson assessment competencies in mathematics among second-stage primary education teachers.

IV- Discussion and Interpretation of Study Results:

1. Discussion and interpretation of the results of the first partial hypothesis:

The first partial hypothesis states:

Electronic education leads to improving lesson planning competencies in mathematics among second-stage primary education teachers.

The obtained results indicate that the study sample members utilize electronic education during lesson planning in mathematics. This reflects the significance of the interest of second-stage primary education teachers in digital age technology, if one may say, and various technological skills, especially as they rely on e-books and resort to electronic websites during lesson preparation. This is particularly important as the world has emerged from the COVID-19 pandemic, which opened the door for everyone to engage in online education and remote teaching, for example. The Algerian government was not isolated from the world in this regard; it also directed the widespread use of electronic boards in primary schools, starting from model schools as a first stage. Hence, it becomes imperative for teachers to resort to electronic education as an alternative solution. This study aligns with the research of (Taysir, 2016), as the Internet plays a prominent role in the field of education, thus necessitating a shift towards electronic education. This transformation is seen as reaching its peak in the modern era due to the scientific, technological, and informational advancements witnessed globally, compelling a transition to this new model in the educational process. Modern technology provides support for the educational process, and teachers in the second stage of primary education

are increasingly showing interest in this new form of education. This study does not align with the study conducted by (Hussein, 2011), which can be attributed to a lack of training in scientific material presentation techniques.

2. Discussion and Interpretation of the Results of the Second Partial Hypothesis:

The second partial hypothesis states:

Electronic education leads to improving lesson implementation competencies in mathematics among second-stage primary education teachers.

The results of the responses of second-stage primary education teachers indicate that the introduction of electronic books is a successful step in enhancing education. This is because it aligns with the contemporary era and with developed countries, considering our delay in integrating it into our educational systems. However, teachers emphasized that before its widespread adoption, it must be developed according to the needs of both teachers and students to become an interactive rather than rigid electronic book. Currently, they encounter many difficulties with it, such as not being able to even determine correct answers. Thus, they insist on the necessity of development before its widespread adoption, such as giving teachers control over students' boards via a computer and providing immediate feedback options for students' answers. This aligns with the study of (Al-Azab & Al-Qahtani, 2023), which acknowledges that the use of interactive electronic books enhances enjoyment in learning science, whether through organized scientific subjects or through learning activities during lesson implementation. This is reflected in students' motivation to complete the interactive activities and tasks found in the electronic book. This is consistent with the nature of contemporary learning, which is characterized by engaging and appealing interactive testing methods that consider individual differences among students and provide real opportunities to practice thinking and creativity.

However, these results differ from those of (Ben Faraj, 2014), which can be attributed to various obstacles faced in employing electronic education, including a lack of awareness of this technology and a shortage of qualified teachers to use it.

3. Discussion and Interpretation of the Results of the Third Partial Hypothesis:

The third partial hypothesis states:

Electronic education leads to improving lesson evaluation competencies in mathematics among second-stage primary education teachers.

The results indicate that the study sample members rely on electronic education to enhance evaluation competencies because it has become necessary to keep pace with the rapid changes in the world. Changing traditional methods and approaches effectively contributes to developing educational skills by adopting modern methods to enhance the pedagogical process, relying on evaluation results at the end of each lesson, teaching unit, or final competency to identify strengths and weaknesses and achieve better outcomes.

These results align with the studies of (Halima, 2012), (Taysir, 2016), and (Jad Allah, 2018), all of whom emphasize the need to activate the use of the electronic education system in evaluating the educational process. They also point out that electronic education plays a significant role in improving the teaching level of mathematics because modern technology provides material support and transforms learning from abstract to tangible. However, these results conflict with the study of (Bouselam, 2022), which states that electronic evaluation does not reflect the true level of learners and is not suitable for many specialties that require practical application and on-site evaluation. Therefore, evaluation should be immediate and concurrent with the educational process to save time and open the door for teachers to diversify strategies and methods to achieve pedagogical efficiency.

V- Conclusion:

In conclusion, it can be said that Information and Communication Technology (ICT) has become one of the sectors that undergoes significant change and development, establishing strong

connections across various sectors, especially in the field of education. The advent of electronic education in this domain has brought about a qualitative shift in teaching and learning methods and styles.

The results of our study indicate that electronic education plays a significant role in improving the teaching level of mathematics, according to second-stage primary education teachers. They perceive modern technology as providing support to the pedagogical process. Moreover, the study participants are increasingly embracing and endorsing this new educational approach, believing in its profound effects on the educational system.

Recommendations and Suggestions:

Based on the findings of this research, the researchers recommend and suggest the following:

- Training on designing synchronous and asynchronous e-learning environments and fostering mathematical thinking and creativity through interactive platforms.
- Fostering enjoyment in science learning among students through modern technology.
- Integrating blended learning and distance learning to enhance mathematical thinking skills.
- Widely adopting electronic boards in all educational institutions.
- Providing courses and training sessions on using modern technology in learning for both teachers and students.

Additionally, the researchers suggest conducting further studies, including:

- Developing mathematics curricula in primary education in light of mathematical thinking skills.
- Investigating primary school teachers' attitudes towards using interactive electronic books.
- Conducting a study on the barriers to using modern technology programs and tools in teaching science in primary education.
- Designing and implementing a training program to enhance mathematical thinking skills and encourage the use of interactive electronic books in primary education.

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