International Journal of Environmental Sciences
ISSN: 2229-7359
Vol. 11 No. 24s, 2025
https://www.theaspd.com/ijes.php

Jordanian Teachers' Role In Developing Electronic Assessment Tools For Modern Education

Ghada Fadel Salameh Shatnawi
Educational Sciences, Yarmouk University
Email: gfadel4@yahoo.com

Abstract
The current study aimed to investigate the Jordanian teacher role in designing electronic assessment tools in conformity with modern education needs and to identify challenges and possible solutions to improve these tools. The researcher followed a mixed-methods design (quantitative and qualitative). A 30-item questionnaire was designed and distributed among 420 male and female teachers from the public schools in Jordan through convenience sampling to investigate three domains: the current use of electronic assessment tools, the teachers' knowledge of the requirements of modern education in assessment, and the impact of professional training and development. Qualitative questions were addressed through interviews with 26 teachers, which were analyzed using thematic analysis based on the Miles and Huberman model.l. The results revealed that teachers' use of electronic assessment tools, their knowledge of modern educational requirements, and the impact of professional training were all rated at a high level. The interview results highlighted that the main challenges included overcrowded classrooms, weak infrastructure, and limited training opportunities, whereas the most prominent means of development were intensifying teacher training programs, updating educational policies, and designing digital assessment tools aligned with 21st-century skills. Based on these findings, the researcher proposed a set of recommendations to advance electronic assessment in Jordanian education.
Keywords: *electronic assessment, Jordanian teachers, modern education, challenges, development.*

INTRODUCTION

Education is one of the fundamental pillars of building societies, as it contributes to preparing and qualifying individuals to cope with the demands of the modern era. With the rapid developments in the educational field, modern electronic assessment tools have become an essential component in improving the quality of education, as they help measure students' achievement levels with precision and provide continuous feedback that enhances the effectiveness of the learning process (1). The most important component of this process is the teacher, who is responsible for using and adapting the assessment tools to fit the demands of modern education. Past research has shown that while many Arab teachers use such tools, there are differences in the frequency of their use, and many Arab teachers still depend on traditional methods because they have not been trained or supported enough to use electronic assessment tools (2). Therefore, it was necessary to examine the extent to which Jordanian teachers are aware of and use modern electronic assessment tools, as well as to determine the challenges they face in their application in light of contemporary educational trends, especially in light of the rapid changes in education and the growing demand for more comprehensive and inclusive forms of assessment. The results suggest that there are numerous challenges facing Jordanian teachers related to their ability to adopt assessment tools that reflect the needs of contemporary education within educational and societal conditions that may influence the quality of education (3). From this standpoint, the present study seeks to explore the role of Jordanian teachers in developing electronic assessment tools and to analyze their ability to activate such tools in line with modern educational requirements. It also aims to answer the following main research question:

What is the current reality of Jordanian teachers' use of modern electronic assessment tools, and what are the key challenges they face in implementing and developing these tools in accordance with the requirements of contemporary education?

Problem Statement and Research Questions

Educational assessment is one of the fundamental pillars of the teaching–learning process, as it contributes to measuring the extent to which educational objectives are achieved and identifying students' strengths and weaknesses, thereby improving learning outcomes. With the advancement of modern educational requirements, it has become necessary to adopt contemporary electronic assessment tools that rely on technology, artificial intelligence, and performance-based evaluation. Such tools aim to enhance active

learning and ensure fairness and equity in the assessment process (4). However, teachers in Jordan face multiple challenges in implementing these tools, most notably insufficient training, weak infrastructure, and limited awareness of modern electronic assessment practices. Traditional methods, particularly paper-based examinations, still prevail in many schools, creating a gap between modern educational orientations and actual assessment practices. Based on the researchers' professional experience and direct engagement with teachers, it has been observed that a considerable number of teachers lack adequate training in the use of electronic assessment tools and face technical as well as environmental obstacles that hinder their application (5;18). These observations are consistent with previous educational reports and studies, which highlighted that weak technological infrastructure and lack of professional development are among the most significant challenges limiting the effective adoption of technology-based assessment tools, despite teachers' increasing willingness to embrace them. Accordingly, there is a pressing need for an in-depth study to investigate the reality of electronic assessment use in Jordanian schools, the factors influencing its adoption, and the ways in which these tools can be further developed to meet the demands of modern education (2;6,20).

From this perspective, the problem of the study is crystallized in the following main question: **What is the role of Jordanian teachers in developing and implementing electronic assessment tools in accordance with the requirements of modern education?**

The following sub-questions emerge from this main question:

1. What is the current reality of Jordanian teachers' use of modern electronic assessment tools in the educational process?
2. What is the level of Jordanian teachers' knowledge of modern educational requirements in the field of educational assessment?
3. What is the impact of training and professional development on the efficiency of Jordanian teachers in using modern electronic assessment tools?
4. What are the main challenges faced by Jordanian teachers in implementing electronic assessment tools?
5. What are the possible approaches to developing electronic assessment tools to align with the requirements of modern education in Jordan?
6. Are there statistically significant differences at the level of ($\alpha \leq 0.05$) in the role of Jordanian teachers in developing and implementing electronic assessment tools in accordance with the requirements of modern education that can be attributed to gender, subject matter, or teaching experience?

Research Hypotheses

1. There are no statistically significant differences at the significance level ($\alpha \leq 0.05$) in the role of Jordanian teachers in developing and implementing electronic assessment tools in accordance with the requirements of modern education that can be attributed to gender.
2. There are no statistically significant differences at the significance level ($\alpha \leq 0.05$) in the role of Jordanian teachers in developing and implementing electronic assessment tools in accordance with the requirements of modern education that can be attributed to the nature of the subject matter taught.

Research Objectives

This study aims to achieve the following objectives, which are directly linked to the proposed research questions:

1. To analyze the current reality of Jordanian teachers' use of modern electronic assessment tools by exploring the extent of their application in classroom settings and identifying the most common practices in educational contexts.
2. To determine the level of Jordanian teachers' knowledge of modern educational requirements in the field of educational assessment, including their awareness of international standards and the importance of integrating technology into assessment processes.
3. To identify the challenges faced by Jordanian teachers in implementing modern electronic assessment tools, whether related to weak infrastructure, lack of training, or resistance from some students and parents.
4. To examine the impact of training and professional development on the efficiency of Jordanian teachers in using modern electronic assessment tools by analyzing the relationship between training programs and the development of teachers' assessment skills.

5. To propose practical mechanisms for developing electronic assessment tools in line with the requirements of modern education through strengthening technology integration, designing comprehensive assessment strategies, and providing a supportive environment for implementing alternative assessment.

SIGNIFICANCE OF THE STUDY

1. Theoretical Significance

The theoretical significance of this study stems from the growing need to understand and develop modern electronic assessment tools in light of the requirements of contemporary education. With the changing educational systems, the assessment is not only restricted to academic achievement but also includes critical and creative thinking and problem solving. The results of this study add to the educational literature and contribute to the understanding of how Jordanian teachers design and implement electronic assessment tools and the challenges they face.. Such contributions help build a knowledge base that can support the formulation of more efficient and effective educational policies in the field of assessment.

2. Practical Significance

At the practical level, this study provides actionable recommendations that may assist educational policymakers in Jordan in improving assessment policies and designing targeted training programs to enhance teachers' competencies in using modern electronic assessment tools. Teachers themselves may also benefit from the study's findings by adopting more effective assessment strategies that align with technological advancements and the requirements of modern education. Ultimately, this can positively impact the quality of education and its outcomes in Jordanian schools.

Delimitations of the Study

- Spatial Delimitation: The study is confined to public schools in Amman Governorate.
- Temporal Delimitation: The study was conducted during the second semester of the academic year 2024/2025.
- Human Delimitation: The study sample was limited to male and female teachers in public schools in Amman.
- Subject Delimitation: The study is confined to exploring the role of Jordanian teachers in developing and implementing electronic assessment tools in accordance with the requirements of modern education.

Research Terms

1. **Modern Educational Assessment Tools:** Operationally defined in this study as a collection of assessment methods and approaches that teachers use to assess student performance and learning, considering learner differences and promoting higher-order thinking skills such as critical and creative thinking, such as electronic assessment, performance-based assessment, formative assessment, self-assessment, collaborative assessment, AI-based assessment, and alternative assessments such as projects, presentations, and digital question banks.
2. **Requirements of Modern Education:** Operationally defined in this study as a set of principles and pedagogical orientations that contemporary educational systems need in order to improve the quality of education and its results, namely, active learning, digitalization of teaching, development of critical and creative thinking, curricula adaptation, and the full integration of assessment into the learning process; these requirements encompass innovative teaching methods, the use of advanced technological tools, international assessment standards, and continuous professional development programs for teachers..

THEORETICAL BACKGROUND OF THE STUDY

Recently, the field of educational assessment has evolved from depending solely on traditional examinations that were based on memorization and theoretical knowledge to embracing contemporary assessment tools that include a variety of measurement methods, such as digital tests and electronic portfolio projects (7;8). Authentic assessment strategies emphasize assessing students in real-life-like contexts through direct observation, practical projects, and continuous assessment (9). The most notable of these are formative assessment, which monitors progress on an ongoing basis; self- and peer-assessment, which allow learners to become active participants in their learning; and electronic tests, which provide a more accurate assessment

of performance levels (Sadler, 2009), because they give an overall picture of student performance that can help improve teaching strategies and the quality of learning (3). Constructivist theory suggests that learning is an active process that involves learners constructing their knowledge from interaction and direct experience, requiring performance-based assessment tools such as projects and continuous feedback (10;20). Likewise, Multiple Intelligences Theory demands the use of flexible assessment tools such as adaptive testing, e-portfolios, and performance-based assessment that account for individual differences (11). Teachers are the key to turning on these tools, as their role has shifted from the conveyance of information to facilitation of critical thinking, problem-solving, and self-directed learning, which are 21st-century demands for education (12;11). They plan for and construct effective assessment strategies, integrate digital technologies into assessment, design learning environments that encourage interaction and participation, and develop assessment tools that are relevant to the needs of the student and to the curriculum based on daily experience and interactions with the learner (13).

Teachers have developed digital assessment tools that have been shown to have positive impacts on assessment quality and teaching efficiency (14), and other studies confirm that modern assessment tools have ushered in an educational paradigm shift that has the potential to improve academic achievement by providing continuous feedback (14) and by integrating assessment into the learning process rather than only viewing it as a measurement tool (10). However, challenges remain in implementing electronic assessment tools, including limited technological infrastructure, inadequate training on digital tools, and sometimes lack of support from school administrations or teachers themselves (15). Educational policies can also lack support, limiting the use of these tools, and there is a need for supportive educational policies and enhanced continuous professional development (16;18).

Previous Studies

Several studies have addressed the reality of using modern assessment tools in Arab educational contexts.

Abu Rahmeh (2024) aimed to investigate the extent to which secondary school technology teachers in the southern governorates of Palestine use continuous assessment methods. The researcher employed the descriptive-analytical method and applied a questionnaire to a sample of 60 male and female teachers. The findings revealed a high degree of application, with statistically significant differences in favor of female teachers, while no differences were found with respect to academic qualification or years of experience. The study recommended enhancing the use of continuous assessment methods due to their positive impact on improving students' learning. In another study (17) sought to develop a proposed vision for the serious adoption of alternative assessment in general education schools. Using the descriptive approach through a review of the literature and his professional experience, the researcher proposed several recommendations, most notably organizing training workshops for teachers, drawing on universities' expertise in assessment, and equipping schools with appropriate environments to apply alternative assessment activities in a scientific manner. Al-Dulaimi (18;26) examined the implications of applying authentic assessment among primary school students in Gaza. Using the descriptive method and a questionnaire administered to 110 teachers, the results showed that the implications of authentic assessment were high, particularly in the skills domain, followed by the cognitive and affective domains. No statistically significant differences were found related to teaching experience, whereas differences emerged based on the teacher's specialization and the grade level. Similarly, Alshishani (19;25) investigated the reality of alternative assessment in general education in Makkah, Saudi Arabia. Adopting the descriptive-analytical method, the researcher applied a 52-item electronic questionnaire to a sample of general education teachers. The findings indicated a moderate level of application of alternative assessment strategies, with differences attributable to the number of training courses attended by teachers. The study recommended offering training programs to enhance teachers' assessment skills.

Method and Procedures

A mixed-methods approach (quantitative and qualitative) was used to provide a holistic and multi-dimensional perspective on the research problem and to generate reliable research results by balancing the depth offered by qualitative research with the breadth provided by quantitative research to guide the study with flexibility and rigor in accordance with the objectives and nature of the study. The study population included all male and female teachers employed in public schools in Jordan during the second semester of the 2024/2025 academic year.. A convenience sampling method was used, whereby the researcher distributed 450 electronic

questionnaires to public school teachers in Jordan through various communication channels, including WhatsApp groups and teachers' social media pages. Of these, 417 valid responses were retrieved and used for analysis. Table (1) presents the distribution of the study sample according to its independent variables.

Table (1): Distribution of the Study Sample According to Its Variables

Variable	Category	Frequency	Percentage (%)
Gender	Male	171	41.1
	Female	247	59.1
	Total	419	100
Subject Area	Humanities	263	63.2
	Scientific	154	36.8
	Total	420	100

In addition, 25 male and female teachers were selected to conduct interviews in order to answer the fourth and fifth research questions.

Research Instruments

This study seeks to explore the role of Jordanian teachers in developing and implementing electronic assessment tools in line with the requirements of modern education. To achieve this purpose, the researcher employed two main instruments representing the mixed-methods design (quantitative and qualitative). The first instrument was a questionnaire, which was developed after a thorough review of the theoretical literature and previous studies related to modern educational assessment. It had items that were developed based on the study aims (27;20). The questionnaire included 30 items divided into three main categories: the current status of using electronic assessment tools, the awareness of teachers about the modern educational needs in the field of assessment, and the effects of training and professional development on teachers' ability to use these tools. The second instrument was qualitative interviews with a sample of male and female teachers from public schools in Jordan to delve deeper into challenges to using electronic assessment tools and to understand their perspectives about the best ways to develop these tools according to contemporary educational trends to complement the quantitative findings and add an additional interpretive dimension to strengthen the study's outcomes.

Table (2): The Questionnaire Domains and Number of Items

Domain No.	Domain	Number of Items
1	Reality of Jordanian teachers' use of modern electronic assessment tools	10
2	Jordanian teachers' knowledge of modern educational requirements in assessment	10
3	Impact of training and professional development on teachers' competence in implementing electronic assessment tools	10
Total		**30**

Responses to the questionnaire items were measured using a five-point Likert scale, starting with *"Very High"* assigned a score of (5), *"High"* assigned a score of (4), *"Moderate"* assigned a score of (3), *"Low"* assigned a score of (2), and finally *"Very Low"* assigned a score of (1). In this study, the researcher adopted this scale, as shown in Table (3), to evaluate the role of Jordanian teachers in developing and implementing electronic assessment tools in accordance with the requirements of modern education, based on the arithmetic mean of each item.

Table (3): Scale for Assessing the Role of Jordanian Teachers in Implementing and Developing Modern Educational Assessment Tools in Line with the Requirements of Contemporary Education

Arithmetic Mean Range	Level of Assessment
Less than 1.82	Very Low

Arithmetic Mean Range	Level of Assessment
1.82 – 2.61	Low
2.62 – 3.41	Moderate
3.42 – 4.21	High
4.22 – 5.00	Very High

Validity of the Questionnaire

The validity of the study instrument was verified using two main approaches. First, face validity was established by presenting the instrument to a panel of expert judges specialized in measurement and evaluation, as well as in curricula and teaching methods, all of whom hold doctoral degrees in their respective fields. The experts were asked to provide feedback on the linguistic clarity of the items and their appropriateness to the intended domains. Based on their observations, several items were revised and refined to ensure clarity and accuracy, while only the items that received an agreement rate exceeding 80% among the panelists were retained. Second, construct validity was verified through the calculation of internal consistency by examining the correlation coefficients between each domain of the scale and the overall score. For this purpose, the instrument was administered to a pilot sample of 40 male and female teachers drawn from the study population but outside the main study sample. The results showed that the correlation coefficients were statistically significant and high, which provides evidence of the internal construct validity of the scale. Table (4) presents the correlation coefficients between each domain of the scale measuring the role of Jordanian teachers in developing and implementing electronic assessment tools and the overall score of the scale.

Table (4): Correlation Coefficients Between Each Domain of the Questionnaire and the Overall Score

Domain No.	Domain Title	Correlation Coefficient	Significance Level
1	Reality of Jordanian teachers' use of modern electronic assessment tools	0.682**	0.000
2	Teachers' knowledge of modern educational requirements in assessment	0.698**	0.000
3	Impact of training and professional development on teachers' competence in implementing electronic assessment tools	0.809**	0.000

It is evident from Table (4) that all correlation coefficients across the questionnaire domains are statistically significant and strong at the specified significance level. This indicates that all domains of the questionnaire effectively measure what they were designed to measure.

Reliability of the Questionnaire

To ensure the reliability of the study instrument, the researcher employed Cronbach's Alpha to calculate the reliability coefficients for the three domains of the scale as well as for the overall score, based on the data from the pilot sample. The results indicated that the reliability coefficients were high, demonstrating that the instrument possesses a high degree of internal consistency and stability. This, in turn, supports its validity in measuring the role of Jordanian teachers in developing and implementing electronic assessment tools in accordance with the requirements of modern education.

Table (5): Cronbach's Alpha Reliability Coefficients for the Questionnaire Domains and the Overall Score

Domain No.	Domain Title	Cronbach's Alpha
1	Reality of Jordanian teachers' use of modern electronic assessment tools	0.868
2	Teachers' knowledge of modern educational requirements in assessment	0.828

Domain No.	Domain Title	Cronbach's Alpha
3	Impact of training and professional development on teachers' competence in implementing electronic assessment tools	0.778
Total	Overall Scale	0.874

It is evident from Table (5) that the reliability coefficients ranged between (0.778 – 0.868), while the overall coefficient reached (0.907). All reliability coefficients were found to be high and sufficient for the purposes of the study, indicating that the scales possess a high degree of reliability. Accordingly, the researcher ensured both the validity and reliability of the questionnaire, which enhances confidence in its suitability for analyzing the results, answering the research questions, and testing the study hypotheses. With regard to the qualitative instrument, interviews were employed to identify the challenges faced by Jordanian teachers in implementing electronic assessment tools and to explore possible approaches for developing them in line with the requirements of modern education. The fourth and fifth research questions were posed to a sample of 25 male and female teachers from public schools in Jordan (28;29;11). To verify the credibility and reliability of the analysis, the researcher re-administered the interviews to a pilot sample of eight teachers, drawn from outside the main sample, after an interval of ten days. No differences were observed between the two sets of results, indicating the reliability of the analysis. Furthermore, the validity of the findings was confirmed through member-checking, whereby the results were shared with the interview participants themselves to ensure that they accurately reflected their views and genuinely represented their perspectives on the challenges of using electronic assessment tools and the suggested approaches for their development in alignment with modern educational requirements.

Study Procedures

The procedures of this study comprised a series of organized steps that began with a review of the theoretical literature and previous studies related to the role of Jordanian teachers in developing and implementing electronic assessment tools in accordance with the requirements of modern education, along with the collection of relevant scientific material. Then, the researcher developed an initial draft of the questionnaire, which was given to a panel of experts to review for feedback and suggestions. Based on their recommendations, the necessary modifications were made to the instrument, and then it was administered to a pilot sample of 40 teachers (outside the main study sample) to confirm its validity and reliability. The instrument was then transitioned from a paper-based format to an electronic format and distributed electronically to public school teachers in Jordan via social media platforms like WhatsApp and Messenger. The responses of the participants were analyzed statistically using the Statistical Package for the Social Sciences (SPSS) to answer the research questions and test the study hypotheses. Alongside the quantitative tool, semi-structured interviews were conducted with 25 teachers to collect qualitative data aimed at answering the fourth and fifth research questions, which focused on the challenges faced by Jordanian teachers and the possible approaches for developing electronic assessment tools. The interview data were analyzed using the Miles & Huberman (1984) model, which relies on data reduction, display, and verification. Finally, the researcher derived, analyzed, and discussed the results, comparing them with the relevant educational literature and previous studies, and concluded with formulating recommendations in light of the study's findings.

Study Variables

This study included the following variables:

Independent Variables:

- Gender, with two levels: male and female.
- Subject area taught by the teacher, with two levels: scientific and humanities.

Dependent Variable:

- Responses to the questionnaire items measuring the role of Jordanian teachers in developing and implementing electronic assessment tools in accordance with the requirements of modern education.

Statistical procedure

After collecting the responses of the study participants, the data were coded, entered into the computer, and statistically analyzed using the Statistical Package for the Social Sciences (SPSS). The statistical treatments included frequencies and percentages to describe the distribution of participants according to the independent study variables, as well as means, standard deviations, and percentages to estimate the relative weight of the items within the study domains. In addition, the independent samples *t*-test was used to examine the hypotheses related to gender and the subject area taught by the teacher. With regard to the qualitative data, the responses of participants to the fourth and fifth research questions were analyzed through calculating the frequencies and percentages of the answers recorded on the interview forms. These data were then interpreted in greater depth using the Miles & Huberman (30) model, which involves three main steps: data reduction, data display, and drawing and verifying conclusions. In the first step, the data were simplified by removing redundant or irrelevant statements, focusing instead on aspects most closely related to the research questions and accurately reflecting participants' experiences and perspectives regarding the challenges and possible approaches for developing electronic assessment tools in line with modern educational requirements.

Presentation and Discussion of the Study Results

Results Related to the First Question:

What is the reality of Jordanian teachers' use of modern electronic assessment tools in the educational process?

To answer this question, the researcher calculated the means and standard deviations of the participants' responses to the first domain of the questionnaire. Table (1) presents these results.

Table (6): Arithmetic Means, Standard Deviations, and Levels of the Items in the Domain of Jordanian Teachers' Use of Modern Educational Assessment Tools in the Educational Process

Item No.	Item Statement	Mean	Standard Deviation	Level
1	I use a variety of assessment tools (e-tests, projects, self-assessment) to measure students' performance.	3.32	0.73	Moderate
2	I apply continuous assessment as an essential part of the educational process.	3.87	0.69	High
3	I integrate technology into assessment processes such as electronic tests and digital platforms.	3.09	0.97	Moderate
4	I involve students in the assessment process through self- and peer-assessment.	3.31	0.93	Moderate
5	I use competency-based assessment to measure students' skills.	3.58	0.74	High
6	I provide continuous feedback to students based on assessment results.	4.03	0.59	High
7	I consider individual differences when selecting assessment tools.	4.23	0.59	Very High
8	I apply formative assessments to monitor students continuously.	3.77	0.61	High
9	I use modern techniques such as artificial intelligence in assessment.	2.57	1.09	Low
10	I rely on alternative methods such as presentations and interactive activities in assessment.	3.47	0.91	High
Total	Domain of Jordanian teachers' use of modern electronic assessment tools	3.53	0.55	High

The results presented in Table (6) show that the overall score for the domain of Jordanian teachers' use of modern electronic assessment tools was rated *high*, with a mean of (3.53) and a standard deviation of (0.55). This indicates that Jordanian teachers employ such tools effectively, although the extent of use varies depending on the type of tool applied. Item (7), I consider individual differences when selecting assessment

tools, had the highest mean score (4.23) with the lowest standard deviation (0.59), and was rated very high, indicating that the teachers were aware of the importance of fairness and inclusiveness in assessment and that they considered individual differences when choosing assessment tools, which is in line with the principles of modern differentiated assessment (e.g., ensuring all students perform to their best ability). Interestingly, items (2), (5), (6), (8), and (10) received high means, indicating that teachers perceived continuous and formative assessment as essential, while they valued providing effective feedback that assists students to improve their performance. Item (9), "I employ innovative methods such as artificial intelligence in assessment," had the lowest mean (2.57), standard deviation (1.09), and was rated low, suggesting that AI is not well-integrated into educational assessment due to a lack of digital tools, teacher training, and policy support for using AI in schools. This finding is consistent with (20) who reported a high degree of application of continuous assessment methods, but is inconsistent (21) who reported that the application of authentic assessment strategies was rated at a moderate level.

Results Related to the Second Question

What is the level of Jordanian teachers' knowledge of modern educational requirements in educational assessment?

To answer this question, the researcher calculated the means and standard deviations of the participants' responses to the second domain of the questionnaire. Table (7) presents these results.

Table (7): Arithmetic Means and Standard Deviations for the Domain "Jordanian Teachers' Knowledge of Modern Educational Requirements in Educational Assessment"

Item No.	Item Statement	Mean	Standard Deviation	Level
11	I have sufficient knowledge of modern international standards in educational assessment.	3.47	0.85	High
12	I keep up with recent research and educational developments related to modern assessment methods.	3.43	0.92	High
13	I recognize the importance of using technology and artificial intelligence in assessment.	3.84	0.85	High
14	I apply assessment strategies that are based on critical and creative thinking.	3.74	0.84	High
15	I believe that assessment should be flexible and adaptable to students' diverse needs.	4.14	0.65	High
16	I am aware of the differences between traditional and alternative assessment and the importance of each.	3.84	0.79	High
17	I apply assessment strategies that enhance students' lifelong learning skills.	3.73	0.71	High
18	I recognize the importance of evaluating teachers' performance as part of improving the educational process.	4.02	0.77	High
19	I believe in the importance of project-based assessment as an effective evaluation tool.	3.72	0.88	High
20	I believe in the necessity of having clear standards for evaluating students' performance.	4.18	0.63	High
Total	Domain of teachers' knowledge of modern educational requirements in assessment	**3.81**	**0.48**	**High**

The results in Table (7) show that the overall mean score for the domain of Jordanian teachers' knowledge of modern educational requirements in educational assessment was rated high (3.81), with a standard deviation of (0.48), and the items in this domain were all rated as high, the highest item being Item (20) (I believe in the necessity of having clear standards for evaluating students' performance) with a mean of (4.18), a standard

deviation of (0.62), and a high rating, and the lowest item being Item (19) (I believe in the importance of project-based assessment as an effective evaluation tool) with a mean of (3.72) and a standard deviation of (0.88), which was also rated high. These results indicate that Jordanian teachers have a relatively strong level of knowledge about concepts and requirements for modern educational assessment, including an awareness of the need for clear and flexible standards for assessment, the use of technology in assessment, and the need for assessment of teachers themselves in order to improve the educational process. However, the somewhat lower evaluation of several items, such as project-based assessment, suggests some difficulty in the practical application of such methods, which emphasizes the need for additional training programs and the development of a more supportive educational environment to enable the effective implementation of these strategies.

Results Related to the Third Question

What is the role of training and professional development in enhancing the competence of Jordanian teachers in developing electronic assessment tools for modern education?

The results presented in Table (8) show that Jordanian teachers clearly recognize the significant importance of training and professional development in strengthening their ability to use electronic assessment tools. The domain recorded a high mean score of (3.68) with a standard deviation of (0.48), indicating a strong conviction among the respondents about the necessity of investing in continuous training to improve their competencies in this area. The highest-rated items were related to the impact of ongoing training on improving the use of electronic assessment tools. One item in particular scored the highest mean of (4.15), reflecting teachers' strong belief that regular training directly contributes to improving the quality of their assessment practices. Another highly rated item, with a mean of (3.99), revealed teachers' clear preference for training programs that include practical applications which can be directly implemented in their daily classroom practices. On the other hand, the findings revealed a noticeable gap in another area. The item *"I have received sufficient training on the use of modern assessment tools"* scored a relatively low mean of (2.87), suggesting that a considerable proportion of the respondents felt that the training programs provided to them so far were insufficient. Regarding keeping up with new developments through online courses or consulting research resources, the evaluation was moderate (3.27), which may reflect disparities in teachers' opportunities or their ability to benefit from such resources.

Table (8): Arithmetic Means, Standard Deviations, and Levels of the Items in the Domain of the Impact of Training and Professional Development on the Competence of Jordanian Teachers in Developing Electronic Assessment Tools for Modern Education

Item No.	Item Statement	Mean	Standard Deviation	Level
21	I have received sufficient training on the use of modern assessment tools.	2.87	1.08	Moderate
22	I need more specialized workshops in educational assessment.	3.24	1.06	Moderate
23	I prefer training courses that include practical applications of assessment.	3.99	0.82	High
24	Continuous training helps me improve my use of modern assessment tools.	4.15	0.76	High
25	My school administration supports me in obtaining training in educational assessment.	3.73	1.09	High
26	I keep up with recent developments in assessment through online courses and research resources.	3.27	0.96	Moderate
27	I benefit from exchanging experiences with colleagues in developing assessment methods.	3.93	0.81	High

Item No.	Item Statement	Mean	Standard Deviation	Level
28	I apply the skills acquired from training courses in student assessment.	3.95	0.65	High
29	I believe continuous training enhances my ability to conduct performance-based assessment.	3.98	0.75	High
30	Formative assessment has become more effective after receiving specialized training.	3.91	0.69	High
Total	Domain of the impact of training and professional development on teachers' competence	**3.68**	**0.48**	**High**

To answer this question, the researcher conducted interviews with 25 teachers and asked them about the main challenges faced by Jordanian teachers in applying modern electronic assessment tools. After collecting the responses, the data were analyzed by calculating frequencies and percentages and using thematic analysis to extract the main themes that reflect the nature of these challenges. The analysis began with transcribing the textual data from the interviews and carefully reading them to understand the general context of each response. Then, a coding process was applied to identify recurring and common ideas among the participants, and these codes were grouped into broader categories representing the main themes. It was ensured that these themes accurately and comprehensively reflected the content of the collected data. The results obtained are presented in Table (9), which displays the main categories derived from the teachers' responses. The findings show that Jordanian teachers face a range of challenges in applying modern electronic assessment tools, distributed across five main areas: the school environment, professional development and training, technological infrastructure, factors related to students and parents, and educational policies (22). Despite the seriousness of some of these challenges, such as overcrowded classrooms, limited training opportunities, and scarce technological resources, the results of the first question revealed that teachers' use of these tools was at a high level, which reflects a great deal of persistence, resilience, and professionalism. This paradox between challenges and the high level of use indicates effective adaptability among Jordanian teachers, as the existence of challenges does not necessarily mean low performance, but rather that teachers work under complex conditions and exert great efforts to overcome them in order to improve the quality of education.

Table (9): Frequencies and Percentages of the Main Challenges Faced by Jordanian Teachers in Implementing Modern Electronic Assessment Tools, as Explicitly or Implicitly Agreed Upon Among Them

Domain	Main Challenges	Frequency	Percentage
School Environment	Overcrowded classrooms limit the ability to implement assessments	22	89%
	Limited time allocated for class periods	19	77%
	Multiple administrative tasks assigned to teachers (grading, daily preparation, reports, etc.)	21	85%
	Lack of encouragement from school administration for individual initiatives	15	61%
Professional and Training Challenges	Lack of specialized and continuous training on digital assessment tools	20	81%
	Absence of clear practical models for modern assessment tools	18	73%
	Some modern tools require extensive time to implement	12	49%

Domain	Main Challenges	Frequency	Percentage
Technological and Material Challenges	Weak technological infrastructure hinders the use of digital assessment	19	73%
	Limited availability of official educational programs or applications for assessment	18	69%
	Limited technical expertise of some teachers in expanding the use of tools such as artificial intelligence	24	93%
Challenges Related to Students and Parents	Lack of cooperation from some parents reduces the effectiveness of continuous assessment	18	69%
	Differences in students' academic and skill levels make it difficult to use a single comprehensive tool	19	73%
	Resistance from some students to modern assessment methods	12	43%
Educational Policy Challenges	Focus on official exams and results reduces the use of alternative assessments	21	81%
	Lack of financial and moral incentives for innovative teachers	18	77%
	Absence of a monitoring and feedback system to ensure effective use of assessment	17	65%

Some obstacles, such as limited time and multiple administrative tasks, may not entirely prevent the use of modern electronic assessment tools, but they do restrict their diversity and regularity in the educational process. Technical and training-related challenges, such as weak expertise in activating digital tools or the absence of specialized training, indicate that current usage, despite its quality, still requires systematic professional support to deepen understanding and improve practice. As for issues related to educational policies, such as the focus on standardized examinations or the lack of motivational incentives, they raise questions about the extent to which Jordanian teachers can sustain these practices, without undermining their individual efforts which deserve recognition. The findings validate that Jordanian teachers do not perceive electronic assessment tools as an add-on, but rather as a part of their professional duty to their students, and therefore they should not be viewed as an optional add-on in an environment full of challenges. In this context, support for teachers should extend beyond moral appreciation to include an enabling environment that turns these individual efforts into institutional practices that enhance the quality of education and its outcomes.

Results Related to the Fifth Question

How can modern electronic assessment tools be developed to meet the requirements of modern education in Jordan?

To answer this question, the researcher conducted interviews with 25 teachers and asked them how modern electronic assessment tools could be developed to align with the requirements of modern education in Jordan. After collecting the responses, the data were analyzed by calculating frequencies and percentages and applying thematic analysis to extract the main themes that reflect the nature of these suggestions. The analysis began with transcribing the textual data from the interviews and carefully reading them to understand the overall context of each response. Then, a coding process was applied to identify recurring and shared ideas among the participants, which were subsequently grouped into broader categories representing the main themes. Care was taken to ensure that these themes accurately and comprehensively reflected the content of the collected data. The results obtained are presented in Table (10), which displays the main categories derived from the teachers' responses.

Table (10): Frequencies and Percentages of Suggested Ways to Develop Modern Electronic Assessment Tools to Align with the Requirements of Modern Education in Jordan, as Explicitly or Implicitly Agreed Upon Among Participants

Domain	Suggested Development	Frequency	Percentage
Development of Assessment Tools	Developing practical models of modern assessment tools applicable in the Jordanian context	21	81%
	Building digital question banks based on higher-order thinking standards	17	65%
	Developing tools that assess critical thinking, creativity, self-learning, and collaborative learning	17	73%
	Designing assessment tools based on projects, life stories, and real-world contexts	23	89%
Professional Development of Teachers	Training teachers to use artificial intelligence in analyzing and adapting assessment data	24	93%
	Designing specialized practical training programs in modern assessment tools	19	73%
	Training teachers on formative assessment and performance-based projects	18	69%
	Enabling teachers to design digital assessment tools aligned with 21st-century standards	17	65%
Educational and Organizational Policies	Amending educational policies to include formative and alternative assessment in students' records	21	81%
	Developing a national guide for modern assessment tools that respects the Jordanian context	18	77%
	Adopting professional and moral incentives for innovative teachers in assessment	21	81%
Community Culture and Awareness	Involving parents in interpreting formative assessment results and using them to improve students' performance	17	73%
	Changing the culture of reliance on final grades through awareness campaigns targeting students and parents about the benefits of modern assessment	18	77%
School Administration Support	Reducing non-instructional administrative burdens on teachers and providing sufficient time for assessment	21	89%

Results Related to the Fifth Question:

The results of the interview analysis conducted with a group of teachers revealed that the development of modern electronic assessment tools in the Jordanian context is not merely a technical step but rather a comprehensive process that requires work on four interrelated dimensions: improving the assessment tools themselves, enhancing teachers' competencies, implementing educational and organizational reforms, and changing the societal perception of assessment. Close to 89% of the participants agreed that assessment tools that are based on project-based learning and real-life activities are more effective in developing skills and preparing students to face real-life challenges, which is aligned with the idea of authentic assessment that moves beyond assessment of learning towards assessment for learning by measuring what students can do in real-life contexts (Wiggins, 1998). Participants also stressed the need for digital question banks that address higher-order thinking skills, and 72% of them suggested developing assessment tools for essential skills such as critical thinking, creativity, self-directed learning, and teamwork, which are in line with the 21st Century Skills Framework (2019). For example, when asked about the resources needed to empower teachers and develop their skills, 93% of the participants identified the need for specialized training in the use of artificial intelligence and data analysis to improve assessments, given the increased use of technology in education

(OECD, 2022), as well as practical support in designing digital tools and training in performance-based formative assessment, which shows that professional development programs need to be revised to include the practical and technical aspects of contemporary assessment. Results also showed that 80% of the teachers agreed that formative and alternative assessments should be integrated into student records instead of focusing solely on final examinations (23). Also, 77% of participants emphasized the need to prepare a national unified guide for assessment tools that fits the Jordanian context and serves as a reference for teachers.

Results also showed that 73% of the participants saw the need to involve parents in interpreting assessment results, 77% stated the need to reduce the dependence on final grades as the only form of student evaluation, and 89% agreed that the limited time for formative assessment due to administrative burdens and lack of class time remain a challenge to implementing effective formative assessments, a sentiment echoed in current educational research (24) that has addressed the challenges to integrating contemporary assessment in resource-limited learning environments..

Are there statistically significant differences at the level of significance ($\alpha = 0.05$) in the role of Jordanian teachers in implementing and developing modern electronic assessment tools in accordance with the requirements of modern education, attributed to the variables of gender and the subject area taught? To answer this question, the following research hypotheses were tested:

- **First Hypothesis:** There are no statistically significant differences at the level of significance ($\alpha = 0.05$) in the role of Jordanian teachers in implementing and developing modern electronic assessment tools in accordance with the requirements of modern education, attributed to the gender variable.

To verify this hypothesis, the researcher used the Independent Samples t-test. The results are presented in Table (11).

Table (11): Results of the Independent Samples t-test Examining the Differences According to Gender in the Role of Jordanian Teachers in Implementing and Developing Modern Electronic Assessment Tools in Accordance with the Requirements of Modern Education

Domain	Gender	N	Mean	Standard Deviation	t-value	Sig. (2-tailed)
First Domain	Male	172	3.473	0.459	-1.462	0.146
	Female	248	3.548	0.587		
Second Domain	Male	173	3.863	0.475	2.051	0.042**
	Female	247	3.764	0.505		
Third Domain	Male	173	3.702	0.468	0.323	0.749
	Female	247	3.687	0.498		
Total Score	Male	172	3.778	0.283	1.389	0.167
	Female	248	3.733	0.389		

The results in Table (11) show that there are no statistically significant differences at the significance level ($\alpha = 0.05$) between the mean scores of the study sample regarding the role of Jordanian teachers in implementing and developing modern electronic assessment tools in accordance with the requirements of modern education, attributed to the gender variable, whether in the overall score or in the following domains:

- First domain: The reality of Jordanian teachers' use of modern electronic assessment tools.
- Third domain: The impact of training and professional development on the competence of Jordanian teachers in implementing modern assessment tools.

This is due to the fact that the significance values in these domains were greater than (0.05), which indicates that the opinions of male and female teachers were similar, and that gender did not have a substantial influence on their evaluation of these aspects. The findings suggest that teachers in Jordan, regardless of gender, view modern electronic assessment tools in a comparable manner—whether in terms of their use, the need to develop them, or the importance of training on them. This means that gender (male or female) did not make a difference in perspectives, which is reasonable given that the challenges teachers face in the educational field, their training opportunities, and the requirements of modern education are largely shared

by both groups (31). Simply put, both male and female teachers perceive modern electronic assessment tools as an essential part of their work, recognize the importance of developing them, and acknowledge the need for continuous support and training to use them effectively. However, the results in Table (11) also reveal that there are statistically significant differences at the significance level ($\alpha = 0.05$) in the domain of teachers' knowledge of modern educational requirements in assessment, attributed to the gender variable, with the differences favoring male teachers (32). This may be explained by the fact that some male teachers work in contexts that provide them with greater opportunities to access recent developments or to participate in training courses, and they may also be more engaged in administrative or supervisory roles that require them to keep up with new trends.

Study Hypothesis Two:

There are no statistically significant differences at the significance level ($\alpha = 0.05$) in the role of the Jordanian teacher in implementing and developing modern electronic assessment tools in accordance with the requirements of modern education that can be attributed to the variable of the subject taught by the teacher. To answer this question, the researcher used the Independent Samples t-test, and the results are presented in Table (12).

Table (12): Results of the Independent Samples t-test examining the significance of differences according to the variable of the subject taught by the Jordanian teacher in implementing and developing modern electronic assessment tools in line with the requirements of modern education.

Domain	Subject Type	N	Mean	Std. Deviation	t-value	Sig. (p)
First Domain	Literary	263	3.5184	0.587	0.117	0.909
	Scientific	154	3.5124	0.447		
Second Domain	Literary	263	3.7784	0.545	-1.354	0.144
	Scientific	154	3.8462	0.395		
Third Domain	Literary	263	3.6834	0.495	-0.492	0.625
	Scientific	154	3.7072	0.472		
Overall Score	Literary	263	3.7612	0.348	0.829*	0.409
	Scientific	154	3.7319	0.348		

It is evident from the results presented in Table (12) that there are no statistically significant differences at the significance level (0.05) between the mean scores of the study sample regarding the role of the Jordanian teacher in implementing and developing modern electronic assessment tools in accordance with the requirements of modern education, attributable to the variable of the subject taught by the teacher. This finding applies to the overall score as well as the following domains:

- **Domain One:** The reality of Jordanian teachers' use of modern electronic assessment tools.
- **Domain Two:** Jordanian teachers' knowledge of the requirements of modern education in assessment.
- **Domain Three:** Methods of developing modern electronic assessment tools to align with the requirements of modern education.
- **Domain Five:** The impact of training and professional development on the efficiency of Jordanian teachers in implementing modern assessment tools.

The results show that the significance values in all these domains were greater than (0.05), indicating that teachers of literary and scientific subjects provided similar evaluations of these aspects. Thus, no substantial differences were observed between them in terms of applying modern electronic assessment, their knowledge of it, or the professional development opportunities they receive. This implies that modern assessment practices have become an integral part of the educational process in general, regardless of specialization, reflecting a shift in the educational system towards comprehensive and integrated assessment.

Recommendations

In light of the findings related to the role of Jordanian teachers in implementing and developing modern electronic assessment tools in line with the requirements of modern education, the researcher recommends several measures. First, it is essential to develop practical training programs specialized in modern assessment that equip teachers with the necessary skills to apply electronic assessment tools, including performance-based, formative, and digital assessment, with a stronger emphasis on practice rather than theory. In addition, modern assessment tools should be integrated into official educational policies by aligning policies to incorporate alternative and formative assessments within the student evaluation record, ensuring that these tools become an officially recognized component of the assessment system in Jordanian schools rather than remaining an individual initiative by teachers (33). Another key recommendation is the design of digital assessment tools that address 21st-century skills, including the development of digital question banks and electronic tools that measure critical thinking, creativity, self-directed learning, and collaboration, while taking into account both global trends and the specific context of the Jordanian educational system. It is also recommended to reduce teachers' administrative burdens and provide them with sufficient time for assessment by revisiting task distribution and restructuring school schedules in a way that allows for the effective application of electronic assessment tools without disrupting the teaching process (34). Furthermore, awareness campaigns should be implemented to foster a culture of modern assessment, engaging parents and students in understanding the philosophy and objectives of electronic assessment through awareness programs and workshops, thereby promoting acceptance and encouraging active involvement in supporting its application in the learning environment. Finally, it is recommended to provide specialized training programs on the integration of artificial intelligence in assessment, offering intensive training for teachers on how to effectively employ AI technologies in educational evaluation to ensure their optimal use in enhancing the quality and accuracy of assessment practices.

REFERNCE

1. Jordan, S. (2013). E-assessment: Past, present and future. *New Directions*, *9*(1), 87-106.
2. Alzubi, A. (2023). The role of multimedia tools in Hashemite Kingdom of Jordan education classroom teaching in the digital era. *European Journal of Interactive Multimedia and Education*, *4*(2), e02303.
3. Hamdan, R., Ashour, W., & Daher, W. (2021). the role of the e-learning departments in controlling the quality of electronic assessments in Palestinian universities during the COVID-19 pandemic. *Sustainability*, *13*(21), 12021.
4. Al Shdaifat, S., Alazemi, A. F., Al-Jamal, D. A., & Zafarani, P. (2022). e-Curriculum as Perceived by Teachers: Jordan as an Example. *Education Research International*, *2022*(1), 8508216.
5. Al Dwairi, A. A. A. (2024). The role of digital education in overcoming the challenges facing the teaching of Islamic culture, perspective of Jordanian university faculty members. *Journal of Ecohumanism*, *3*(4), 3201-3211.
6. Canals, L., & Al-Rawashdeh, A. (2019). Teacher training and teachers' attitudes towards educational technology in the deployment of online English language courses in Jordan. *Computer Assisted Language Learning*, *32*(7), 639-664.
7. Abumosa, M., & Mashal, S. (2018). Jordan. *E-Learning in the Middle East and North Africa (MENA) Region*, 163-192.
8. Al-Awdat, J. E., Murad, O. S., Khwileh, Q. M., & Almhairat, L. A. (2022). Cypriot Journal of Educational Sciences. *Sciences*, *17*(9), 3248-3262.
9. Al-Awdat, J. E., Murad, O. S., Khwileh, Q. M., & Almhairat, L. A. (2022). Cypriot Journal of Educational Sciences. *Sciences*, *17*(9), 3248-3262.
10. Derbas, A., Ayyoub, H. Y., Hyarat, T., Hnaif, A., Al-Quraan, R., Al-Serhan, A., ... & Al Zyoud, I. (2025). The role of E-learning in institutions of higher education in achieving the goals of sustainable development in Jordan. *PloS one*, *20*(3), e0319192.
11. Abualrejal, H. M. E., Shtawi, H. O., Hassan, M. G., Alqudah, A. Z., & Alamrani, A. A. (2021, April). Assistive technology and its impact on educational achievement for visually impaired students at SKPK Princess Elizabeth. In *International Conference on Emerging Technologies and Intelligent Systems* (pp. 873-883). Cham: Springer International Publishing.
12. Abuhmaid, A. (2011). ICT training courses for teacher professional development in Jordan. *Turkish Online Journal of Educational Technology-TOJET*, *10*(4), 195-210.
13. Al-zawahreh, I. A. (2023). The impact of electronic management on human resource development: An applied study on teachers of the Ministry of Education.
14. Al-Adwan, A., & Smedley, J. (2012). Implementing e-learning in the Jordanian Higher Education System: Factors affecting impact. *International Journal of Education and Development using ICT*, *8*(1).
15. Mosa, M. A. A. (2021). Opportunities and Challenges of E-Learning in Jordan. *Challenges and Opportunities for the Global Implementation of E-Learning Frameworks*, 246-264.
16. Alkhawaldeh, N., & Menchaca, M. (2014, July). Barriers to utilizing ICT in education in Jordan. In *International Journal on E-learning* (Vol. 13, No. 2, pp. 127-155). Association for the Advancement of Computing in Education (AACE).
17. Wimpenny, K., Adefila, A., & DeWinter, A. (2020). *Jordan Opportunity for Virtual Innovative Teaching and Learning*.

18. Al Bataineh, M., & Anderson, S. (2015). Jordanian social studies teachers' perceptions of competency needed for implementing technology in the classroom. *Contemporary Educational Technology*, *6*(1), 38-61.
19. Ali, A. A. A., Abualrejal, H. M. E., Mohamed Udin, Z. B., Shtawi, H. O., & Alqudah, A. Z. (2021, June). The role of supply chain integration on project management success in Jordanian engineering companies. In *International conference on emerging technologies and intelligent systems* (pp. 646-657). Cham: Springer International Publishing.
20. Alqudah, A. Z., Abualrejal, H. M. E., & Elias, E. M. Supply Chain and Quality Services in Among Jordanian public Hospitals: A Preliminary Review.
21. Al-Dulaimi, A. (2017). Attitudes of Foreign Language Teachers in Jordanian Universities Towards Applying Information and Modern Communication in Teaching Languages. *Available at SSRN 3063075*.
22. Alshishani, A. M. K. Using Technological Creations in the Teaching Process and Their Impact on the Development of Faculty Skills in Jordanian Universities. *International journal of health sciences*, *6*(S4), 11138-11153.
23. Alnemrat, A., Aldamen, H., Al-Deaibes, M., & Alsharefeen, R. (2023). E-learning in a Jordanian higher education institution. *Frontiers in Psychology*, *14*, 1136142.
24. Hamad, A. L., Abouelnaga, H. M., Metwally, A. B. M., ShoShan, H., & Moawad, N. F. (2022). The Importance of E-Learning to the Students and Teachers. *Journal of Language and Linguistic Studies*, *18*(2), 952-968.
25. Al-Shboul, M., Al-Saideh, M., & Al-Labadi, N. (2017). Learners' perspectives of using ICT in higher education institutions in Jordan. *Instructional Technology*, *14*(3), 27-86.
26. Alyahya, D., & Almutairi, N. (2019). The Impact of Electronic Tests on Students' Performance Assessment. *International Education Studies*, *12*(5), 109-119.
27. Alomari, A. M. (2023). Assessing teachers' competencies in teaching and learning using distance education. *Mediterranean Journal of Social & Behavioral Research*, *7*(3), 113-120.
28. Abdallah Altarawneh, A. M., & Awwad Alomoush, R. A. (2022). The reality of E-counseling services in the light of Digital learning from the point of View of Teachers in Jordan. *Education and Information Technologies*, *27*(9), 12773-12792.

29. Oweis, T. I. (2018). Effects of using a blended learning method on students' achievement and motivation to learn English in Jordan: A pilot case study. *Education research international*, *2018*(1), 7425924.
30. Hazaimeh, Z. D. K., & Ajlouni, B. A. (2022). Problems Vocational Education Teachers Face In Employing E-Learning For The Basic Stage In Jordan From Their Point Of View. *Journal of Positive School Psychology http://journalppw. com*, *6*(6), 7083-7097.
31. Al-Zaidiyeen, N. J., Mei, L. L., & Fook, F. S. (2010). Teachers' Attitudes and Levels of Technology Use in Classrooms: The Case of Jordan Schools. *International education studies*, *3*(2), 211-218.
32. Alawamreh, A. R., & Elias, N. F. (2015). EXAMINING THE EFFECTIVENESS OF USING WEB-BASED LEARNING FOR GIFTED STUDENTS: JORDAN AS CASE STUDY. *Journal of Theoretical & Applied Information Technology*, *76*(2).
33. Al-Rsa, M. S., Waswas, D., Altawarah, A., & Al-Rowad, F. (2024). Evaluating the Quality of Teaching Performance among Jordanian Teachers in Light of Certain Demographic Variables. *International Electronic Journal of Elementary Education*, *16*(3), 295-309.
34. Alelaimat, A. M., Al-Dababneh, K. A., & Al-Zboon, E. K. (2022). Contemporary trends in the evaluation of kindergarten children in Jordan according to Jordanian teachers' perceptions. *Education 3-13*, *50*(1), 78-96.
35. Aljaraideh, Y., & Al Bataineh, K. (2019). Jordanian Students' Barriers of Utilizing Online Learning: A Survey Study. *International Education Studies*, *12*(5), 99-108.
36. Khasawneh, N. A. S., Khasawneh, A. J., Khasawneh, M. A. S., & Jadallah abed Khasawneh, Y. (2024). Improving Arabic content delivery on cloud computing platforms for Jordanian e-learning environments. *Migration Letters*, *21*(S1), 575-585.
37. Zibin, A., & Altakhaineh, A. R. M. (2019). The effect of blended learning on the development of clause combining as an aspect of the acquisition of written discourse by Jordanian learners of English as a foreign language. *Journal of Computer Assisted Learning*, *35*(2), 256-267.