



The Role of Electronic Assessment in Rising of the Level of Academic Achievement among Female Students from the Point of View of Secondary School Teachers in Hail

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Abstract

The study aimed to identify the role of electronic assessment in raising the level of academic achievement among female students, from the point of view of secondary school teachers in the city of Hail. The study followed the descriptive approach, using the questionnaire as a tool for collecting data. The questionnaire consisted of (45) statements, divided into four axes. They are: the role of assessment through the electronic achievement file in raising the level of academic achievement for secondary school female students, the role of assessment through electronic testing in raising the level of academic achievement for secondary school female students, the role of assessment through the electronic assignments in raising the level of academic achievement for secondary school female students, and finally The most prominent challenges facing electronic assessment to raise the level of academic achievement for female secondary school students. The study sample consisted of the secondary school teachers in the city of Hail, where their number reached (296) teachers. The study found a set of challenges facing electronic assessment, as the study recommended the necessity of working to address the problems of slow Internet speed to run programs related to electronic assessment, and paying attention to providing infrastructure such as computer laboratories and others in secondary schools, working to provide Internet lines and specialized programs, providing the immediate technical support, and interest in providing manuals for using electronic calendar methods.

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Introduction

Evaluation represents one of the important elements that make up the curriculum system and is essential to the educational process. Its definitions have varied; it's defined as the process of collecting, classifying, analyzing, and interpreting data, or quantitative and qualitative information about a phenomenon, situation,

or behavior with the intention of using it in issuing a judgment or decision. There are also many types, including: preliminary or pre-evaluation, which aimed to determine the student's prior level of knowledge to determine the starting point for studying a course, and formative or formative evaluation, which aims to indicate the extent to which the student's interim goals have been achieved during his study of a course, and aims to determine the student's strengths and weaknesses, and the final or post-evaluation aims to measure the extent to which the student has achieved the learning outcomes of a course specified above. To know the extent to which the goals have been achieved, it can be done in several ways, including: remote electronic assessment (E-assessment), which is carried out according to scientific methods and mechanisms, and has many names, including: digital assessment, online assessment, and computer-based assessment. Regardless of the different names, they are used to describe the use of computers and the Internet in the evaluation process and to determine the extent to which goals have been achieved (Al-Ghamlas, 2022).

The Evaluation in the field of educational technology has received great attention with the emergence of many technologies in education; such as the Internet, multimedia, virtual reality, and e-learning, which is defined as a method of presenting courses or study units to learners through Internet technology, and the electronic libraries and search mechanisms it contains, local networks, the computer and its multimedia of sound, images, and graphics, whether remotely or in the classroom school; where interaction is possible between the teacher and the learners on the one hand and between the learners and each other on the other hand. Educational programs in the field of educational technology have been built in light of these innovations, especially e-learning programs, to demonstrate the extent to which the objectives of these programs have been achieved. Therefore, there was a need to highlight the vital role played by these electronic programs, where the Evaluation methods have witnessed rapid developments and fundamental transformations in measurement and evaluation methodologies, which in turn were reflected in the components of the educational system by bringing about educational changes in evaluation techniques and field practice, the most prominent of which is overcoming the prevailing for the concept of evaluation that is synonymous with regular exams.

There are objective scientific reasons that deepen the search for new ways and methods of evaluation, including: fundamental changes in educational thought regarding the necessity of moving evaluation away from its usual concept, and how authority in it is transferred from the teacher to the student, instead of the negative role of the student in evaluating his work and issuing judgments about its performance, and to obtain it from others, it has become necessary to help the teacher and student develop their ability to think, increase their confidence in their ability to learn, and evaluate their learning, and from the new perspective of educational evaluation, which emphasizes that evaluation methods must influence students' learning, to encourage them to exert effort and time to achieve Evaluation tasks that lead to integrated realistic results or tools, which in turn lead to achieving important educational results to which the evaluation process contributes.(Mohamed, 2021).

With the emergence and development of many electronic systems and programs used in electronic educational courses; it was necessary to think and search for electronic assessment tools that are appropriate for the teaching methods used to be an alternative to the traditional tools. The electronic assessment depends on the use of digital technology to make the assessment more efficient due to its attention to all participating learners and its use of information and communications technology to display data, provide information, record responses, and monitor grades, and submitting reports on learners' performance, as it is a continuous and organized process aimed at evaluating learners' performance remotely using the electronic network in light of the new Covid-19 pandemic. Finally, the Electronic evaluation is one of the branches of educational evaluation that reflects the interaction and consistency between evaluation and technology (Al-Hams, 2021).

Study Problem:

The Electronic Assessment is a development of the regular assessment; which was based on various tests, and was applied once or twice a school year for the purpose of obtaining information about the student's achievement to present it to parents and others. Such evaluation has a positive impact on education, because it measures skills and concepts that are expressed in numbers that provide valuable information about the student's learning, and through which the products that the student has mastered can be determined. Although in the regular assessment the learners are the focus of the assessment, they do not participate in evaluating themselves. In light of the skills requirements of the modern century, students face challenges that require them to believe in the sustainability of education, to face life with awareness and wisdom. Therefore,

moving towards the electronic calendar in line with the characteristics and requirements of the era was necessary (Electronic Assessment Guide, 2018). As many educational institutions have adopted distance education as a new type of virtual education, it has become necessary not only in light of technological progress, but specifically after the Covid-19 pandemic. Where, the virtual education will be imposed on educational institutions, and reliance on electronic assessment as a new form of assessment to ensure the continuity of the learning and assessment process. In light of the above, there was an urgent need to address the role of electronic assessment in raising the level of academic achievement among female students from the point of view of secondary school teachers in the city of Hail.

Theoretical content:

Electronic assessment

Electronic assessment, also known as digital assessment, e-assessment, online assessment or computer-based assessment, is the use of information technology in assessment such as educational assessment, health assessment, psychiatric assessment, and psychological assessment. This covers a wide range of activities ranging from the use of a word processor for assignments to on-screen testing. Specific types of e-assessment include multiple choice, online/electronic submission, computerized adaptive testing such as the Frankfurt Adaptive Concentration Test, and computerized classification testing. Different types of online assessments contain elements of one or more of the following components, depending on the assessment's purpose: formative, summative and diagnostic (Rovai, A. et al. 2008). Instant and detailed feedback may (or may not) be enabled. In formative assessment, often defined as 'assessment for learning', digital tools are increasingly being adopted by schools, higher education institutions and professional associations to measure where students are in their skills or knowledge. This can make it easier to provide tailored feedback, interventions or action plans to improve learning and attainment. The Gamification is one type of digital assessment tool that can engage students in a different way whilst gathering data that teachers can use to gain insight. In summative assessment, which could be described as 'assessment of learning', exam boards and awarding organizations delivering high-stakes exams often find the journey from paper-based exam assessment to fully digital assessment a long one. Practical considerations such as having the necessary IT hardware to enable large numbers of student to sit an electronic examination at the same time, as well as the need to ensure a stringent level of security (for example, see: Academic dishonesty) are among the concerns that need to be resolved to accomplish this transition. (Laumer, et al. 2009). E-marking is one way that many exam assessment and awarding bodies, such as Cambridge International Examinations, are utilizing innovations in technology to expedite the marking of examinations. In some cases, e-marking can be combined with electronic examinations, whilst in other cases students will still hand-write their exam responses on paper scripts which are then scanned and uploaded to an e-marking system for examiners to mark on-screen. (Wikipedia, 2023)

Literature Review:

Over the past years ago, many studies utilized the Electronic Assessment in Rising of the Level of Academic Achievement in Schools; this section is overviews the recent empirical analyses on the Electronic Assessment in Rising of the Level of Academic Achievement to students. The study of (Stiggins, 2001) aimed to find out the predominant nature of teachers' practices in classroom evaluation. The study relied on the descriptive approach using a questionnaire applied to (2293) teachers. The results showed that the predominant character of teachers' practices in classroom evaluation is the student's academic achievement factor. Other factors that help and are involved in estimating a student's grades and academic achievement, such as: the student's effort, class participation, and the student's improvement in the course during the semester; They are still important factors for teachers, and the researcher also indicates that two-thirds of the sample of teachers who responded to the study believe that the student's effort, mental ability, and improvement in the course during the semester should be used to evaluate the student's achievement in the course and estimate his grades.

(Ayan and Seferoğlu 2011) aimed at investigating the role of electronic portfolios in fostering pre-service teachers' reflective thinking. The study conducted with pre-service English language teachers enrolled in a practicum course in an undergraduate teacher education programmed in Turkey. The data were collected through e-portfolios and interviews. The findings of study revealed that e-portfolios gave participants a sense of ownership, fostered reflecting thinking, supported collaboration and allowed them to make connections between theory and practice. The study showed that with the on-going nature of the e-portfolio, participants had the chance of developing and reviewing their portfolio artifacts whenever and wherever they wanted.

Therefore, electronic portfolios allowed teacher candidates to reflect more on their own work and thus engage in on-going professional development.

(Zaghloul, 2014) aimed to identify the reality of using electronic evaluation tools in e-learning systems in Arab universities in terms of use and difficulties. It used the descriptive analytical approach and designed an electronic questionnaire on the pages of Arab universities, namely: (Egypt, the Kingdom of Saudi Arabia, Kuwait, Oman, Jordan, and the Emirates), and a sample of (750) faculty members responded. The study covered all scientific specializations in colleges that use e-learning systems in their educational systems, fully or integrated. The results of the study found that theoretical specializations are the highest in the use of evaluation tools. The percentage of electronic assessment was (73%), while the scientific specializations percentage was (27%). The results also indicated that the highest electronic assessment tools were: electronic tests, research, reports, achievement file, and projects.

(Tomljanovic and Polic, 2015) aimed to identify the feeling of satisfaction with the electronic assessment methods used in the learning process, their conviction in the contribution of the electronic assessment to their learning, to identify the validity of the electronic assessment as a safe alternative to the traditional paper assessment, to identify the differences between female and male students towards the electronic assessment. The study tool was applied to a sample of (133) male and female students from various disciplines from the Polytechnic University of Rijeka in Croatia, and the results indicated that the degree of student satisfaction with the use of electronic assessment methods in education was positive and that it helped improve learning outcomes. Some of them have shown that using it in education leads to obtaining quick feedback, in addition to its fairness and reliability.

(Marc, 2015) investigated the role of electronic assessment in making the educational process more clear. By revealing the impact of feedback, the study used the case study approach. This was done using the method of contrasting scenarios, electronic forums to communicate with students asynchronously through discussion and dialogue pages. It also allowed teachers to go and look at the participation of each student at any time, and the students were linked by e-mail to provide them with feedback. The study achieved a high degree of Honesty and consistency through the electronic assessment process, and that the electronic assessment process contributes to increasing the interaction of learners with each other and accepting points of view, and the results indicated that the feedback provided via email in an immediate manner increases the improvement of the quality of learning among students.

(Al-Sakhawi, 2016) aimed to measure the effectiveness of evaluation using the teacher's electronic achievement file in developing academic achievement among first-year secondary school students. The study used the descriptive approach to monitor and analyze studies and literature related to the theoretical framework of the research. It also used the quasi-experimental approach in experimenting with the research with a quasi-experimental design. To measure the effectiveness of the evaluation using the teacher's electronic achievement file in developing academic achievement and the skill performance of the computer course among industrial secondary school students. The results of the study found that there is a very significant effective effect of the evaluation using the teacher's achievement file in developing the academic achievement and skill performance of the computer course for secondary school students of industrial.

(Mohammed, 2016) aimed to investigate the effect of using electronic formative assessment on achievement and critical thinking in Islamic education for ninth-grade students in Jordan. The study used the quasi-experimental method. Two tests on achievement and critical thinking were designed according to the method of Mary McFarland, and were verified of their validity and reliability, in addition to building an electronic program in formative assessment. The study was applied in the Hikma Al-Farouq Private School for boys affiliated with the first Zarqa Education Directorate, which was chosen intentionally. The results of the study showed that there were statistically significant differences at the significance level ($\alpha < 0.05$) between averages for the study individuals, due to the teaching strategy variable, and the suitability of the group that studied using the teaching strategy, in using electronic formative assessment in the achievement and critical thinking tests. The study recommended using this strategy in teaching, training teachers to use it, and conducting similar studies using new designs in assessment electronic formative in the stages and other academic subjects.

(Atallah, 2016) aimed to identify the attitudes of Mansoura University students towards the electronic calendar, and to identify its most important obstacles. The study sample consisted of (350) male and female students from a theoretical and scientific college, and the faculty sample consisted of (150) members of

Mansoura University. From theoretical and scientific colleges, they used the measure of the trend towards the electronic assessment, and the measure of the obstacles to the electronic assessment as a tool for the study, and their results resulted in a positive trend towards the electronic assessment, and the absence of differences to gender towards the electronic assessment, and the presence of several obstacles such as skills in dealing with the computer, and the lack of appropriate devices for the assessment Email.

(Al-Habardi, 2017) aimed to reveal the reality of using electronic assessment tools or the difficulties that prevent their use, and develop a proposed vision for their development. The study used the descriptive survey method, and the appropriate tool was the questionnaire, and the study population consisted of all teachers of social and national studies at the secondary stage. In the city of Riyadh, in public and private schools, their number reached (207) teachers. The study revealed that the reality of using electronic assessment tools as a whole indicates a moderate degree of use, and that the reality of the difficulties of using electronic assessment tools as a whole indicates a high degree of difficulty. The study also came up with a proposed vision for activating the use of electronic assessment tools among social and national studies teachers at the secondary stage in the city of Riyadh. (Aisadoon, 2017) aimed to identify the perceptions and opinions of students at the Saudi Electronic University regarding the use of electronic assessment, the suitability of this type of assessment in the teaching and learning processes, and I used descriptive assessment and questionnaire as a tool to collect data on a sample of (88) students of Bachelor's degree. The results showed satisfaction with the application of electronic assessment in the teaching and learning process. The results also indicated that the application of electronic assessment on a wide scale in all courses may help in eliminating bias in some students' tests.

(Al-Azizi, 2018) aimed to identify the effectiveness of using formative assessment in improving the level of academic achievement for the thinking skills and scientific research course among students of the College of Business Administration at Shaqra University. The study relied on the quasi-experimental approach by applying the study experience to determine the effect of using formative assessment on academic achievement, for third-level students at the College of Business Administration at Shaqra University. The study relied on applying the achievement test as a tool, and the results of the study concluded that the students of the study sample excelled after using the formative assessment in academic achievement. (Alruwais, et al. 2018) showed that the Information and Communication Technology (ICT) has been involved in different sectors, ICT has an impact to improve learning environment and process. The study showed an increasing number of students and the limitation of placement, a new innovation in learning is required, E-learning and E-assessment have been introduced, to offer online courses and electronic assessment. The study showed that the E-assessment enables the students live in remote areas to have the test in their homes, and helps the teacher to correct the exam and release the marks in short time. The study explained the meaning of E-assessment from different opinions and illustrates the cycle of E-assessment process. Moreover, this study discussed the advantages and obstacles of using E-assessment in learning for different domains: student, teacher, institution, and in education aims.

(Alyahya and Almutairi, 2019) aimed to measure the effect of electronic tests on the academic achievements of middle school students in Arabic course. The sample has been divided into two groups; the experimental group and the non-experimental group after using the mixed experimental method. The Statistical measurements of this study had been used before, and after, the experiment for both groups; whereas, study tools were consisted of achievements test and focus group. The results have assured the existence of statistical differences between the experimental group and non-experimental group in the (language classification) category marks. The results have shown no statistical differences on the audio comprehension, reading comprehension, writing, handwriting skills, language style, grammatical function and writing expression categories marks, which give preferences to use the electronic test rather than the traditional (pen and paper) test. The study has concluded that teachers must be encouraged to perform continuous evaluation throughout the academic semester by applying electronic tests. The study showed that they must emphasize on the importance of grounding rules and regulations to apply electronic tests in the educational institutions.

(Rolim and Isaias 2019) The study showed that the combination of teaching and information technologies is at the origin of a more embracing, flexible and accessible approach to learning. The Assessment is considered an integral part of the learning process, but it has always been considered challenging for teachers. Through the adoption of information technologies, it is possible to create new opportunities to improve assessment. The study showed that despite its numerous advantages, e-assessment remains a topic of much discussion for many, due to doubts that arise about its efficiency and effectiveness. In order to understand this issue, the study aimed to explore e-assessment in higher education, from the viewpoint of

teachers and students. Four online surveys were distributed among teachers and students in Portugal and other countries. While the results showed that Portugal is slightly behind in terms of adoption, there is a strong awareness of the importance of e-assessment. Internationally, e-assessment has higher adoption rates, and both teachers and students believe that this method of assessment is advantageous.

(Astalini, et al. 2019) showed that there were 4.0 industrial revolution gives opportunity for education through learning Technology; Mobile learning is the use of technology in the learning process using tablets, PCs or smartphones. The study showed that Technological development in education is the use of Android which is a medium for mobile learning that is more flexible. The study showed that an online based mobile learning provides opportunities for students to study anytime and anywhere. The study aimed to determine the effectiveness of the use of electronic guide books and electronic-based assessment in a basic physics practicum with reflectance material on a flat mirror. The study involved 65 physics education students with 35 students in the experimental class and 30 students in the control class. The study is true experimental with the post-test end-experimental control group design, based on the evaluation, in very good category at the communication's indicator and classification's indicator for experimental class, and in very good category at the compiles the data table's indicator, for control class. (Al-Zaid, 2019) aimed to monitor the relationship between the application of electronic assessment programs (Kahoot as a model) and increasing the motivation of female students at Princess Nourah bint Abdul Rahman University towards learning. The study used the descriptive analytical approach, where the sample was chosen randomly from among female students in the College of Education. The sample consisted of 66 female students, and the study relied on a questionnaire to obtain data. The results of the study concluded that there is a statistically significant effect of applying the Kahoot electronic assessment program on increasing the motivation of female students at Princess Nourah University towards learning.

(Astalini and Perdana 2020) studied the developed of affective assessment of students in physics the form of interests students have using MySQL. The study showed that there were 3 stages of the method used in this study, namely (1) Development, (2) Implementation, and (3) Evaluation. The subjects involved in this study were 265 students from Batanghari High School with 265 students using purposive sampling techniques. The results of this study are that the validator gives good results regarding the assessment of e-interest in the category given which is very feasible and obtained valid statements of 25 statements with a reliability value of 0.870, then students' interest in physics dominated both categories was 54.4%. The study showed that student responses when using the e-interest assessment received a good response seen from the attitude of students, who were happy, excited and had a high curiosity towards this E-Assessment. The study concluded that the e-interest assessment needs to be developed on a large scale.

(Howe, E.L. 2020) The study showed that the Electronic Assessment known as e-assessment is one part of the core elements in higher education system that has gradually increased in usage in Higher Education Institutions. The Assessment is defined as a process of measuring a people or student's knowledge, understanding, capability or skills. The study showed that the one of the benefits of e-assessment is the ability for feedback to be delivered promptly to the student. The aimed of this study is to investigate the student perceptions of the use of e-assessment at the Institute of Development Management (IDM) based in Eswatini. The Empirical data was gathered from 1st year up to degree level students as well as lecturers through questionnaires, observations and interviews. The Findings showed that students have positive perceptions of e-assessment towards their learning activities such as the ability to write online tests and quizzes ubiquitously while lecturers expressed positive outcomes which included reduced workload in terms of marking and moderation.

(Yoestara, et al. 2020) aimed to identify pre-service English language teachers' perceptions of the online electronic testing system for a number of Indonesian universities. It used the descriptive approach through a questionnaire distributed to a sample of (82) bachelor's students. The results showed that there was general satisfaction with the application of electronic assessment in the teaching and learning process, and this is due to the presence of feedback along with the ease of using electronic tests, the lack of need for high financial resources or the use of a lot of paper, and the reduction of the test duration compared to the traditional assessment. (Lazonder et al. 2020) showed that this study reports on a three-year longitudinal study that portrayed the development of children's digital literacy skills. The study sample of 151 fifth- and sixth-graders was tested three times at yearly intervals to monitor how their skills to collect, create, transform, and safely use digital information progressed. The study showed that the results at the group level showed a

steady linear increase in all four skills, but individual children tended to alternate substantial growth in one year with minimal progress during the next or vice versa. The Children made most progress in their ability to collect information whereas their ability to create information improved the least. The study showed that the development of most skills was moderately related and independent of gender, grade level, migration background, and improvements in reading comprehension and math. The children's socioeconomic status was weakly associated with the ability to collect and safely use information, but not with the other two digital literacy skills.

(Mahmood et al. 2020) studied an impact of e-Assessment at Middle School Students' Learning – an empirical study at USA Middle School Students. The study showed that the students appear in exams to get assessed about their academic learning's and understanding of concepts. Traditionally, such assessments were made through hard paper – pen tests conducted under exam conditions, carrying out such assessments electronically is a not very old trend and such tests are termed as e-assessment, electronic assessments, and computer-based tests/ exams, etc. This paper studied impact of such tests on the academic learning of middle school US students using scale used by (John Dermo, 2009). The study showed that the main scale measured 6 dimensions using 30 indicators while this study shrank to only two dimensions of “Comfort in use” and “Learning through e-tests” measured through 14 indicators. The results of this study showed a normal distribution of responses with little skewness both towards “Ease in usage” and “Learning”, no significant difference was found in the responses based on “Genders”. Still, the study suffered the limitation of sample size and sample frame, these must be increased and the study conducted at different areas students to make it more generalizable.

(IbnBakhima and Azizi, 2021) aimed to identify the relationship of educational evaluation to academic achievement in the middle stage for a sample of middle school students in the state of Jijel. The descriptive approach was used, and the study sample consisted of (633) male and female students using the sample method. The results of the study found that The evaluation method is more effective in increasing students' academic achievement, as the learning activities that take place within the department contribute significantly to raising the students' educational level, and the external evaluation method positively affects academic achievement, through students' perseverance and interest in preparing lessons in advance to make them easier to understand.

(Al-Harabi, 2021) aimed to investigate the reasons for the low level of academic achievement of geography students. The researcher followed the descriptive approach, and the study reached a set of results represented by the low academic achievement of students in the Geography Department at the College of Arts and Sciences, Qasr Al-Akhyar, which was clearly demonstrated by the high percentage of failures. With complete reliance on the subject teacher in preparing the curriculum and considering him the main and only source of information, there is also a weakness in some faculty members' knowledge of modern teaching methods. The results of the questionnaire also indicated that the Corona pandemic caused a decline in motivation to continue studying, due to the state of confusion and frustration that accompanied the emergence of this pandemic.

(Al-Siyafi, 2022) aimed to determine the reality of the use of electronic assessment in the secondary stage, affiliated with the Mubarraz Education Office in Al-Ahsa Governorate, in light of the Corona pandemic from the point of view of teachers and students, and the study used the descriptive approach. The results showed that the reality of teachers' use of electronic assessment was to a degree (Agree), with a mean of (3.77 out of 5), and a percentage of (73.9%), and that satisfaction of secondary school students with the use of electronic assessment was at a degree of (Agree), and an average of (3.99), and a percentage of (80%). The obstacles to using the electronic assessment came from the teachers' point of view with a degree of (Agree) and an average of (3.42), with a percentage of (68.4%), while the obstacles to using the electronic assessment came from the students' point of view with a degree of (Agree) and an average of (3.4), with a percentage of (68%). . Based on these results, the study recommended the necessity of providing an appropriate structure for implementing electronic assessment in secondary schools, training teachers on electronic assessment tools and procedures, while adopting creative initiatives in the field of electronic assessment.

(Al-Anazi and Al-Shamrani,2022) aimed to identify the level of obstacles to electronic assessment in light of distance learning and the Corona pandemic from the point of view of male and female teachers in the Hail region, and to reveal the significance of the statistical differences between the responses of male and female teachers in the Hail region regarding the level of their assessment obstacles, which are attributed to Gender,

teaching stage, years of service, professional development hours. The study used the descriptive survey method, and the results concluded that it is necessary to hold training courses for male and female teachers on the use of electronic assessment tools, with the importance of supporting male and female students with educational materials on electronic assessment tools and applications in order to facilitate the process of interaction and carrying out the tasks required of them.

(Godaert et al. 2022) showed that although there is a growing body of literature that recognizes the importance of being digitally competent today, there have been few empirical investigations into the assessment of primary school students' digital competences. This study presented a systematic review of the empirical research on the assessment of primary school students' digital competences, in total, 14 studies were selected and reviewed. The purposed of this review is twofold; the areas of digital competence that were measured by the assessment instruments were labeled according to the European Digital Competence Framework. The results of the study showed that most studies evaluated digital competences as 'information and data literacy', 'communication and collaboration' and 'creation of digital content'. Less attention paid to the assessment of the competence areas 'safely and responsible use' and 'problem solving', the emphasis of most instruments is rather on the measurement of skills. The study showed that, attention towards knowledge and attitudes, as important aspects of competences, remain underexposed. An analysis of the provided evidence of the quality of assessment instruments for measuring primary school students' digital competences is given, based on the Research Centre for Examination and Certification Framework. The Results indicated the different approaches to increase the quality of the assessment instruments, but there is generally poor reporting of the psychometric properties of the tests. The study made suggestions for further research and practice are discussed.

(Abdel Fattah, 2022) aimed to determine the relationship between students' attitude towards electronic tests and academic achievement. The study used the descriptive analytical method, and the random research sample consisted of a reconnaissance sample (30) and a basic sample of (85) students from the second year of the Department of Music Education, The study tools included a set of four cognitive tests, an opinion poll form, and a questionnaire about the programming language used in preparing tests electronically and on computers. The results of the study showed that students' attitudes towards electronic tests were achieved at a high degree in both the cognitive and emotional dimensions, and in the total score of the scale, the greater the academic achievement, the greater the positive attitude of students towards electronic tests.

(Namari, 2022) aimed to identify the degree of availability of electronic assessment applications, the degree to which science teachers use them, the obstacles to their use in evaluating the cognitive learning outcomes of middle school students, and to reveal the influence of the variables of teaching experience and scientific specialization on the responses of science teachers, regarding the reality of their use. For electronic assessment applications in evaluating cognitive learning outcomes, the study used the descriptive survey method. The results of the study showed that the degree of availability of electronic assessment applications in evaluating cognitive science learning outcomes was moderate. The arithmetic mean was (53.29), and the degree of science teachers' use of electronic assessment applications in evaluating cognitive science learning outcomes was moderate; The arithmetic mean was (57.28), and there were no differences attributed to the academic qualification variable and the number of years of experience variable in the responses of science teachers about the reality of their use of electronic assessment applications in evaluating the cognitive learning outcomes of middle school female students in the Sabya Education Department.

(Asrial et al. 2022) showed that the existence of a digital-based assessment system will support the assessment of student character in the learning process, the Character assessment used e-assessment will greatly assist teachers in overcoming paper wastage, streamlining time, overcoming large expenditures and making students more focused in filling out characters. This study aimed to analyze the character of tolerance in elementary school students and to determine the feasibility of the product. The study used 4D development design. The sample of this study was 175 students. The Quantitative data from this study were obtained from the validation of media experts and the results of the student tolerance character assessment, while qualitative data was obtained from interviews. The quantitative data in this study were analyzed used the descriptive statistics and inferential statistics, while the qualitative data used Miles & Huberman analysis. The results of the descriptive analysis of the character assessment of student tolerance were in a good category, and there are differences in the character of student tolerance in the 3 schools. The results of the validation of media experts on the development of web-based assessment are in the good category so that the product can be used to assess the character of student tolerance. The implications of this study lie in time

efficiency in processing and distributing data, saving procurement costs, and ease of use in assessing student character using web-based assessment.

(Loureiro and Gomes 2023) showed that the Assessment practices in the higher education (HE) context have undergone profound changes over recent years, particularly regarding their purpose, strategies, and available resources. This exploratory study seeks to analyze, through the perceptions of HE students, the contribution and adequacy of an assessment for learning strategy, namely, online peer assessment (OPA), inspired by the conceptual framework of the PrACT Model, a framework which aimed to contribute to the dissemination of alternative assessment practices. The study data collected technique used was the survey questionnaire and the study participants ($n = 16$) were students from a higher education institution in Portugal. The results point to the lack of student experience in the practice of OPA and are discussed in conformity with the dimensions of the PrACT framework. The OPA is considered, from the student's perspective, an adequate alternative digital assessment strategy, contributing to student motivation as well as to the development of cognitive, metacognitive, and digital skills.

(Almuhanna, 2023) studied the improving E-Assessment Based on University Students Experiences. The study showed that the application of electronic assessments (e-assessment) has become inevitable with the expansion of distance education, and learners' perceptions should be considered when designers improve the system to meet their needs and facilitate their acceptance of the system. This mixed descriptive study investigated university students' perceptions about e-assessment system. The data collected from 308 students at King Saud University during the second semester of 2021, by using a questionnaire that consisted of 34 Likert scale items and two open-ended questions on students' opinions. The results of this study showed the suitability of e-assessment to the university courses, and the importance of rendering guidance to students before the e-exam by providing a user manual, mock exam, and furnishing clear instructions; ensuring flexibility of use; supplying quick academic and technical support during the e-test; and providing immediate feedback to increase students' motivation and learning retention. The findings highlighted students' concerns regarding the type of exam questions, cheating, and techniques of monitoring and verifying their identities. These findings of study expected to guide administrators, decision makers, researchers, and system developers to design or customize some features of assessment systems for the achieving best practice of evaluation and measurement of higher education students.

(Spatioti, et al. 2023) The study showed that the Educational Design and Evaluation Models are important factors in e-learning as they provide guidance information for proper strategy organization pursuing both specific learning outcomes and ensuring the main elements of e-learning, such as self-regulation and collaborative learning. The examined educational models of ADDIE, Bloom, and Kirkpatrick are widely known and recognized as models for design and measuring the effectiveness of learning in order to achieve the best possible learning outcomes based on the needs of a specific target group in a specific educational context whether traditional or digital. The study obtained that the ADDIE Model is a widely known learning design model used by many educational designers and training programmers to develop education and training programs. The study showed that the Bloom Taxonomy is a method of building learning goals that follows the process of cognition. The Kirkpatrick Model is a method of evaluating the effectiveness of e-learning and educational programs in general, both in terms of training and business performance of learners. The purpose of this study was both the investigation of the academic performance, the self-regulated learning and the collaborative learning in relation to the models of ADDIE, Kirkpatrick and Bloom in distance online environments and their effectiveness to the learning process. Meta-analysis was applied for research methodology. The study found that only 37 articles were appropriate for meta-analysis. Especially, 23 articles were on the ADDIE model, 9 articles were on the Kirkpatrick model and 5 articles were on the Bloom model. The study found that all models apply to online process and meet different learning requirements. The study showed that the regarding the cognitive performance of the trainees, all models supported the effectiveness of distance education, the self-regulated learning and the collaborative learning, as factors inextricably linked to the effectiveness of the distance education, were examined in a small number studies in the above models. The study obtained that all three examined models reinforced students' positive attitudes and perceptions, even while transferring the acquired knowledge to the workplace.

(Asrial et al. 2023) aimed to determine the teacher's response to the use of e-assessment of character in elementary school students; knowing the results of the assessment of the character of love for the homeland, tolerance, and discipline; comparing the results of character assessment in three schools, knowing the

Available online at: <https://jazindia.com>

validity and feasibility of e-character assessment. The study used a quantitative data and qualitative data. The sample consisted of 55 students at SD Negeri 034/I Teratai, 58 students at SD Negeri 045I Sridadi, and 61 students at SD Negeri 064/I Muara Bulian obtained by purposive sampling technique. The data of study collected technique uses a love of the homeland, tolerance, and discipline questionnaire. The analysis of quantitative data used a descriptive statistics and inferential statistics in the form of one way ANOVA test, post-hoc further test in the form of Tukey HSD test and the qualitative data used the Miles and Huberman technique. The results showed that teachers have a very good response to the use of e-assessment; the developed e-assessment product is in the very good category so it is feasible to use.

(Culver, 2023) showed that when students engaged in peer assessment activities, they often put emphasis on the feedback they received from peers but fail to appreciate how their role as a peer assessor can contribute to their learning process and improve their own work. The students and teachers undervalue the peer assessment process. This scholarship of teaching and learning project conducted a small-scale controlled experiment with students undertaking peer assessment in randomly assigned groups that either focus on giving and receiving peer feedback or assessing peers' work only without receiving feedback on their own. In addition, it explores how different peer assessment strategies such as rubric creation, rank order assessment and assessment without qualitative feedback affect both students' ability to improve their work and their perception of the value of peer assessment. The results provided exploratory evidence that students' perceived value of peer assessment is lower when they do not receive feedback, but improvement in their writing is actually higher when they focus on assessing peers' work rather than receiving feedback on their own. The study showed that, while feedback is a potential benefit of the peer assessment process, it may also distract focus from the potentially more valuable learning that derives from students' self-evaluating their own work after critically assessing their peers'.

(Brēmāne, 2023) showed that the Digital assessment has become relevant as part of the digital learning process, as technology provides not only teaching and learning but also assessment, including productive feedback, with the rapid development of educational technology and the expansion of related study, the study showed that there is a lack of research-based clarification of aspects of digital assessment without considering the impact of temporary pandemic solutions. The study showed that the purpose of this thematic review is to summarize key features in studies over a specified period of time (2018–2021); consequently, it does not offer completely new knowledge, but captures essential knowledge of the last few years before the pandemic to avoid losing a significant aspect of digital assessment due to temporary pandemic solutions. The review of study resulted in a description of digital assessment that includes its conditions, opportunities and challenges, as well as other characteristics. The findings confirmed the importance of digital assessment in the modern educational process and will increase the understanding of digital assessment among those involved in education (administrators, educators and researchers), inviting them to consider possible pedagogical principles. Furthermore, the study said that these findings are now comparable to and should be supplemented with post-pandemic insights and knowledge.

Research methodology and procedures:

The descriptive survey method was used. It was defined as the approach “which is carried out by interrogating all members of the study population or a large sample of them, with the aim of describing the phenomenon studied in terms of its nature and degree of existence only, without going beyond that to studying the relationship or deducing the causes. It is one of the most appropriate approaches for study, because it relies on describing the true reality of the phenomenon, and then analyzes the results and builds conclusions in light of the current reality (Al-Assaf, 2016).

1. Study community: The study community consists of all secondary school teachers in the city of Hail, Kingdom of Saudi Arabia, in the second semester of the academic year 2023, numbering (1028) teachers.

2. Study sample: A random sample of (296) female teachers was taken from the study population.

3. Study tool: The questionnaire was used as a tool to collect data. This is due to its suitability to the objectives of the study, its curriculum, its community, and the answer to its questions.

4. Building the study tool: After reviewing the literature and previous studies related to the topic of the current study, such as the study of (Al-Sayyafi, 2022, Nammari, 2022, Al-Zaid, 2019, Al-Habardi, 2017, Al-Harabi, 2021, Atallah, 2016, Zaghoul, 2014, Al-Anzi and Al-Shamrani, 2020, Al-Habardi, 2017, Marc, 2017, Alsadoon, 2015), and in light of the questions and objectives of the study, the tool (questionnaire) was built, and in its initial form, before validity and reliability, it consisted of three parts. The following is a

presentation of how it was built, and the procedures followed to verify its validity and reliability, as the study contains an introductory introduction to the objectives of the study, the type of data and information that is intended to be collected from the study members, along with a guarantee of the confidentiality of the information provided, and a pledge to use it for scientific research purposes only. The study also contains (40) statements, distributed over four main axes, and table (1) shows the number of questionnaire statements and how they are distributed among the axes.

Table (1): Questionnaire topics and phrases

Axis	Number of phrases
The role of evaluation through electronic achievement in raising the level of academic achievement of secondary school students	9
The role of evaluation through electronic testing in raising the level of achievement	9
The role of evaluation through electronic assignments in raising the level of achievement	10
Challenges facing electronic assessment to raise the academic achievement level of secondary school students	12
The questionnaire	40

Source: Collected and calculated from the study sample questionnaire.

A five-point Likert scale used to obtain the responses of the study subjects, according to the following degrees of agreement: (strongly agree - agree - neutral - disagree - strongly disagree), and then this scale was expressed quantitatively, by giving each of the previous statements a score, according to the following: Strongly agree (5) degrees, Agree (4) degrees, Neutral (3) degrees, Disagree (2) degrees, Strongly disagree (1) degree.

To determine the length of the five-point Likert scale categories, the range calculated by subtracting the upper limit from the lower limit ($5-1 = 4$), then dividing it by the largest value in the scale ($4 \div 5 = 0.8$), and then this value added to the lowest value in scale (1); To determine the upper limit for this category, the length of the categories became as shown in Table (2):

Table (2): division of the Likert scale categories

Category	Category levels	
	from	to
Strongly Disagree	1.00	1.80
I do not agree	1.81	2.60
neutral	2.61	3.40
I agree	3.41	4.20
I Strongly agree	4.21	5.00

The length of the range was used to obtain a judgment on the average responses of the study individuals, after processing them statistically.

1. Validity of the study tool: The validity of the study tool means ensuring that it measures what it was prepared for. It also means that the questionnaire includes all the elements that enter into the analysis on the one hand, and the clarity of its expressions on the other hand, so that it is understandable to everyone who uses it. The validity of the study tool was confirmed through:

1. The apparent validity of the study tool (the judges' honesty)

To determine the extent of the apparent validity of the questionnaire and to ensure that it measures what it was designed to measure, it was presented in its initial form to a number of arbitrators specialized in the subject of the study, where the number of arbitrators reached (14) arbitrators, and the arbitrators were asked to evaluate the quality of the questionnaire, in terms of its ability to Measure what they were prepared to measure, and judge their suitability to the objectives of the study, by determining the clarity of the phrases,

their belonging to the topic, their importance, and their linguistic soundness, while expressing what they see as modifications, deletions, or additions to the phrases. After taking opinions and reviewing the notes, the necessary amendments were made that were agreed upon by most of the arbitrators, and then the questionnaire was produced in its final form.

2. Internal consistency validity of the instrument

To verify the internal consistency of the questionnaire, Pearson's Correlation Coefficient was calculated, to know the degree of correlation of each questionnaire phrases with the total score of the axis. It is clear from Table (3) that the correlation coefficient values for each of the phrases with what comes after them are positive and statistically significant at the significance level (0.01); which indicates the validity of the internal consistency between the phrases of the first axis, and its suitability for measuring what it was designed to measure.

Table No. (3): Pearson correlation coefficients for the first axis Phrases with the total score of the axis

Phrase	Correlation Coefficient	Phrase	Correlation Coefficient
1	**0.755	6	**0.748
2	**0.803	7	**0.789
3	**0.771	8	**0.721
4	**0.793	9	**0.642
5	**0.798	-	-

**Significant at the level of 0.01.

Table No. (4): Pearson correlation coefficients for the second axis Phrases with the total score of the axis

Phrase	Correlation Coefficient	Phrase	Correlation Coefficient
1	**0.797	6	**0.590
2	**0.835	7	**0.775
3	**0.819	8	**0.803
4	**0.696	9	**0.612
5	**0.509	-	-

**Significant at the level of 0.01.

It is clear from Table (4) that the correlation coefficient values for each of the phrases with its axis are positive and statistically significant at the significance level of (0.01); which indicates the validity of the internal consistency between the phrases of the second axis, and their suitability for measuring what they were designed to measure.

Table No. (5): Pearson correlation coefficients for the third axis Phrases with the total score of the axis

Phrase	Correlation Coefficient	Phrase	Correlation Coefficient
1	**0.729	6	**0.874
2	**0.797	7	**0.806
3	**0.762	8	**0.709
4	**0.801	9	**0.804
5	**0.843	10	**0.806

**Significant at the level of 0.01.

It is clear from Table (5) that the correlation coefficient values for each of the phrases with its axis are positive and statistically significant at the significance level of (0.01); which indicates the validity of the internal consistency between the phrases of the third axis, and their suitability for measuring what they were designed to measure.

Table No. (6): Pearson correlation coefficients for the fourth axis Phrases with the total score of the axis

Phrase	Correlation Coefficient	Phrase	Correlation Coefficient
1	**0.576	7	**0.715
2	**0.704	8	**0.556
3	**0.639	9	**0.587
4	**0.714	10	**0.614
5	**0.682	11	**0.524
6	**0.695	12	**0.542

**Significant at the level of 0.01.

It is clear from table (6) that the correlation coefficient values for each of the phrases with its axis are positive and statistically significant at the significance level of (0.01); which indicates the validity of the internal consistency between the phrases of the fourth axis, and its suitability for measuring what it was designed to measure. From the above, it is clear that the tool is true in all its aspects, and thus the tool has validity.

1. Stability of the study instrument:

The stability of the study tool was confirmed through the use of reliability coefficient (Cronbach's Alpha (α)), table no.(7) shows the values of the Cronbach's Alpha reliability coefficients for each axis of the questionnaire.

Table No. (7): Cronbach's Alpha coefficient for measure the stability of the study tools

The questionnaire	The number of Phrases	Reliability of the questionnaire
The role of evaluation through electronic achievement in raising the level of academic achievement of secondary school students	9	0.906
The role of evaluation through electronic testing in raising the level of achievement	9	0.885
The role of evaluation through electronic assignments in raising the level of achievement	10	0.933
Challenges facing electronic assessment to raise the academic achievement level of secondary school students	12	0.860
Total Stability	40	0.940

It is clear from Table (8) That the general reliability coefficient reached (0.940), this indicates that the questionnaire has a high degree of reliability that can be relied upon in the field application of the study.

Study application procedures

To answer the study's questions and achieve its objectives, the study followed the following steps:

1. Reviewing many educational literature and previous studies related to the subject of the study to help determine the theoretical framework and prepare the study tool.
2. Preparing the questionnaire for the electronic assessment.
3. Present the questionnaire to the arbitrators to ensure the validity of the tool and put it in its final form.
4. Selecting a sample of secondary school teachers from the study population in the city of Hail.
5. Prepare the questionnaire electronically to distribute it to the study sample.
6. Applying the study tool to the study sample, and the study tool was responded to by (296) female secondary school teachers in the city of Hail.
7. The results of the study were analyzed, discussed and interpreted.
8. Presentation of recommendations and proposals for the study.

Statistical processing methods

The statistical program Statistical Package for Social Sciences (SPSS) was used, and calculated the following statistical metrics:

1. Frequencies and percentages.
2. Weighted Mean.
3. Arithmetic mean.
4. Standard Deviation; to identify the extent to which the responses of sample members deviate from their arithmetic mean.

Research results:

The results related to the first question: What is the role of electronic assessment in raising the level of academic achievement among female students from the point of view of secondary school teachers in Hail?

To determine the role of electronic assessment in raising the level of academic achievement among female students, the arithmetic mean of these dimensions was calculated to determine its role in raising the level of academic achievement among female students - Table (8):

Table No. (8): Responses of study members about the role of the Electronic Assessment in raising the level of academic achievement for female students

no	Axis	Mean	Standard deviation	Rank
1	The role of evaluation through electronic achievement	3.96	0.620	1
2	The role of evaluation through electronic testing	3.80	0.683	3
3	The role of evaluation through electronic assignments	3.91	0.636	2
The role of electronic assessment in raising the level of academic achievement for female students		3.89	0.559	-

It is clear from the results shown above that the study members agreed on the role of electronic assessment in raising the level of academic achievement among female students, with an arithmetic average of about (3.89), where the average of the role of assessment through the electronic achievement file was about (3.96), followed by the role of assessment through electronic assignments, with an average of about (3.91), finally it was the turn of evaluation through the electronic test with an average of about (3.80).

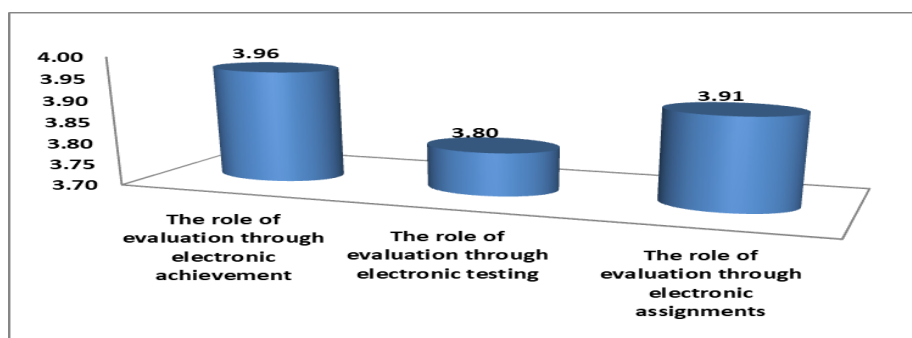


Figure (1): Study members' responses to the role of electronic assessment in raising the level of academic achievement for female students

Answer the first question: What is the role of electronic assessment in raising the level of academic achievement for female students from the point of view of secondary school teachers in Hail?

1-The first question: The role of evaluation through electronic achievement in raising the level of academic achievement for female secondary school students:

Table No. (9): Responses of study members about the role of evaluation through Electronic Achievement in raising the level of academic achievement of female secondary school students

no	Phrases	Frequency	Degree of Agree					Mean	Standard deviation	Category	Rank
		%	Strongly agree	Agree	Neutral	Disagree	Strongly disagree				
	Designing electronic achievement in an interesting and motivating way for female students.	Freq.	90	172	28	4	2	4.16	0.699	Agree	1
		%	30.4	58.0	9.5	1.4	0.7				
	Employing electronic platforms as a tool for developing electronic achievement.	Freq.	96	150	44	4	2	4.13	0.757	Agree	2
		%	32.4	50.6	14.9	1.4	0.7				
	Availability of an electronic communication link between the teacher and the guardian.	Freq.	76	162	48	8	2	4.02	0.768	Agree	3
		%	25.7	54.7	16.2	2.7	0.7				
	Availability of many diverse meditative activities.	Freq.	66	172	52	2	4	3.99	0.741	Agree	4
		%	22.3	58.0	17.6	0.7	1.4				
	Possibility of using electronic completion files.	Freq.	74	164	40	16	2	3.99	0.815	Agree	5
		%	25.0	55.4	13.5	5.4	0.7				

Using the achievement file as one of the electronic evaluation methods to evaluate learning outcomes.	Freq.	74	158	44	16	4	3.95	0.858	Agree	6
	%	25.0	53.3	14.9	5.4	1.4				
Ease of use of electronic achievement	Freq.	82	126	72	12	4	3.91	0.894	Agree	7
	%	27.7	42.5	24.3	4.1	1.4				
The availability of participatory websites such as “wiki” as an evaluation tool that supports electronic achievement files.	Freq.	60	138	82	12	4	3.80	0.853	Agree	8
	%	20.3	46.5	27.7	4.1	1.4				
Relying on electronic achievement to determine the extent of students’ mastery of what they have learned.	Freq.	52	144	62	30	8	3.68	0.968	Agree	9
	%	17.6	48.7	20.9	10.1	2.7				
Total Average							3.96	0.620	Agree	

To identify the role of assessment through electronic achievement in raising the level of academic achievement among female secondary school students, frequencies, percentages, averages, standard deviations, and ranks were calculated for the responses of the study members to the phrases of the role of assessment through electronic achievement in raising the level of academic achievement among female students of secondary stage, the results were as follows:

It is clear from Table (9) that the study members agree on the role of evaluation through electronic achievement in raising the level of academic achievement for female secondary school students, with an average of about (3.96), which is an average that falls in the fourth category, as it indicates the option I agree with the study tool. It is also clear from the results after arranging the statements in descending order according to the agreement of the study members that:

1- phrase (8) “Designing the electronic achievement file in an interesting and motivating way for female students” came first in terms of approval by the study members, with a mean of about (4.16); This result is explained by the fact that designing the electronic achievement file in an interesting and motivating way for female students enhances their interaction with the achievement file and their motivation, which contributes to raising the level of academic achievement among secondary school students. This result is consistent with the result of a study (IbnKhaymah and Azizi, 2021), which showed the relationship of educational evaluation to academic achievement in the middle stage for a sample of middle school students in the state of Jijel.

2- phrase (2) “Utilizing electronic platforms as a tool for developing the electronic achievement file,” came in second place with a mean of about (4.13); The explanation for this is that using electronic platforms as a tool for developing the electronic achievement file supports the electronic application of achievement and the benefit of female students from a distance, which contributes to raising their level of academic achievement. This result is consistent with the result of a study (Al-Sakhawi, 2016), which demonstrated the effectiveness of evaluation using teacher achievement in academic achievement and skill performance of the computer course among industrial secondary school students.

3- phrase (9) “The availability of an electronic communication link between the teacher and the guardian” came in third place with a mean of about (4.02); The explanation for this is that the availability of an electronic communication link between the teacher and the guardian supports the participation of parents in monitoring the achievement of female students and encourages them to achieve, which contributes to raising their level of academic achievement. This result is consistent with the result of (Al-Siafi, 2022) study, which showed that the reality of teachers’ use of electronic evaluation was (Agree)

4- phrase (5) “The availability of participatory websites such as “Wiki” as an evaluation tool that supports electronic achievement files,” came in eighth place with a mean of (3.80); The explanation for this is that providing participatory websites such as “wiki” as an evaluation tool that supports electronic achievement files supports electronic achievement files and their role, which contributes to raising their level of academic achievement.

5- phrase (6) “Relying on the electronic achievement file to determine the extent of students’ mastery of what they have learned” came in ninth place with a mean of about (3.68); The explanation for this is that

relying on electronic achievement to determine the extent of students’ mastery of what they have learned supports its use and benefit from it, which contributes to raising their level of academic achievement.

Answer the second question: The role of evaluation through electronic testing in raising the level of academic achievement

To identify the role of evaluation through electronic testing in raising the level of achievement, frequencies, percentages, arithmetic means, standard deviations, and ranks were calculated for the responses of study members to the statements of the role of evaluation through electronic testing in raising the level of achievement, and the results were as follows:

Table No. (10): Responses of study members about the role of evaluation through the Electronic Testing in raising the level of achievement

no	Phrases	Frequency	Degree of Agree					Mean	Standard deviation	Category	Rank
		%	Strongly agree	Agree	Neutral	Disagree	Strongly disagree				
	Flexibility, as it can be applied before, after, or during the explanation.	Freq.	84	166	36	10	-	4.09	0.730	Agree	1
		%	28.4	56.0	12.2	3.4	-				
	Ease of preparation, application and review of results.	Freq.	80	162	48	4	2	4.06	0.739	Agree	2
		%	27.0	54.7	16.2	1.4	0.7				
	The ability to prepare an electronic test and a bank of questions and choose from them as needed	Freq.	76	174	34	6	6	4.04	0.797	Agree	3
		%	25.7	58.8	11.5	2.0	2.0				
	Analyze the results of the electronic test and benefit from them to develop future questions or modify current grades.	Freq.	66	164	40	20	6	3.89	0.895	Agree	4
		%	22.3	55.4	13.5	6.8	2.0				
	Exclude students from making spelling mistakes.	Freq.	60	158	52	18	8	3.82	0.915	Agree	5
		%	20.3	53.3	17.6	6.1	2.7				
	Encouraging individual learning by training female students on electronic tests more than once	Freq.	62	138	54	26	16	3.69	1.066	Agree	6
		%	20.9	46.7	18.2	8.8	5.4				
	Relying on the use of electronic tests at the end of each unit or semester	Freq.	60	130	54	42	10	3.64	1.062	Agree	7
		%	20.3	43.9	18.2	14.2	3.4				
	Using electronic tests to determine the level of academic achievement of female students	Freq.	48	128	64	38	18	3.51	1.095	Agree	8
		%	16.2	43.3	21.6	12.8	6.1				
	Electronic tests achieve equality among female students, taking into account individual differences.	Freq.	48	126	56	50	16	3.47	1.114	Agree	9
		%	16.2	42.6	18.9	16.9	5.4				
Total Average								3.80	0.683	Agree	

It is clear from Table (10) that the study members agreed on the role of evaluation through electronic testing in raising the level of achievement with an average of about (3.80), which is an average that falls in the fourth category of the five-point scale (from 3.41 to 4.20), which is the category that indicates option I agree to the study tool. As is clear from the results after arranging the phrases in descending order:

1- phrase (6) “Flexibility, as it can be applied before, after, or during the explanation,” came in first place with a mean of about (4.09); The explanation for this is that the flexibility of electronic tests, which can be applied before, after, or during the explanation; It enhances the effectiveness of measuring female students’ levels, which contributes to raising their level of academic achievement. This result is consistent with the result of (Hung, 2007), which showed the effectiveness of electronic assessment.

2- phrase (5) “Ease of preparation, application, and review of results” came in second place, with mean of about (4.06); The explanation for this is that the ease of preparing electronic tests, applying them, and reviewing the results; It enhances the efficiency of assessing female students’ levels, which contributes to raising their level of academic achievement. This result is consistent with the result of a study (Al-Zaid, 2019), which showed the application of the Kahoot electronic assessment program, and advantages of applying this program.

3- Phrase (9) “The ability to prepare an electronic test and a bank of questions and choose from it according to need,” came in third place with a mean of about (4.04); The explanation for this is that the possibility of preparing an electronic test and a bank of questions and choosing from it according to need; It enhances the flexibility of tests and improves female students’ benefit from them, which contributes to raising their level of achievement.

4- Phrase (2) “Using electronic tests to determine the level of academic achievement of female students” came in eighth place with a mean of about (3.51); The explanation for this is that the use of electronic tests in determining the level of academic achievement of female students; It enhances the efficiency of using electronic tests, which contributes to raising their level of academic achievement.

5- Phrase (7) “Electronic tests achieve equality among female students, taking into account individual differences,” came in ninth place with a mean of about (3.47); the explanation for this is that electronic tests achieve equality among female students, taking into account individual differences. It enhances all female students’ benefit from electronic tests, which contributes to raising their level of academic achievement.

Answer the third question: The role of evaluation through electronic assignments in raising the level of achievement:

To identify the role of assessment through electronic assignments in raising the level of achievement, frequencies, percentages, arithmetic means, standard deviations, and ranks were calculated for the study members’ responses to the phrases of the role of assessment through electronic assignments in raising the level of achievement, and the results were as follows:

Table No. (11): Responses of study members about the role of evaluation through the Electronic Assignments in raising the level of achievement

no	Phrases	Frequency	Degree of Agree					Mean	Standard deviation	Category	Rank
		%	Strongly agree	Agree	Neutral	Disagree	Strongly disagree				
	Providing continuous feedback via electronic homework to raise female students’ academic achievement	Freq.	76	178	32	10	-	4.08	0.704	Agree	1
		%	25.7	60.1	10.8	3.4	-				
	Electronic homework develops the skill of searching through digital libraries.	Freq.	70	182	36	6	2	4.05	0.706	Agree	2
		%	23.6	61.5	12.2	2.0	0.7				
	Students invest their time in developing their skills and developing their minds through training and learning.	Freq.	58	198	30	6	4	4.01	0.708	Agree	3
		%	19.6	66.9	10.1	2.0	1.4				
	It contains instructions and directions that help students solve electronic	Freq.	54	192	40	10	-	3.98	0.674	Agree	4
		%	18.2	64.9	13.5	3.4	-				

	homework assignments.										
	Electronic homework assignments contribute to increasing students' connection with their families and learning about what they are studying and achieving.	Freq.	58	184	40	10	4	3.95	0.767	Agree	5
		%	19.6	62.1	13.5	3.4	1.4				
	The type of electronic homework is suitable for the level of mental abilities and problem-solving training.	Freq.	50	184	36	24	2	3.86	0.812	Agree	6
		%	16.9	62.1	12.2	8.1	0.7				
	Relying on electronic homework in order to determine a score for students to achieve the main learning outcomes.	Freq.	54	160	54	28	-	3.81	0.843	Agree	7
		%	18.2	54.1	18.2	9.5	-				
	Electronic homework develops specific educational experiences in students, such as: creativity and innovation.	Freq.	54	160	54	22	6	3.79	0.896	Agree	8
		%	18.2	54.2	18.2	7.4	2.0				
	Electronic homework improves the performance level of female students.	Freq.	54	158	54	24	6	3.78	0.908	Agree	9
		%	18.2	53.5	18.2	8.1	2.0				
6	Electronic homework encourages students to be self-reliant and inspire a spirit of competition and cooperation.	Freq.	56	152	48	34	6	3.74	0.963	Agree	10
		%	18.9	51.4	16.2	11.5	2.0				
Total Average								3.91	0.636	Agree	

It is clear from Table (11) that the study members agree on the role of evaluation through electronic assignments in increasing the level of achievement with an average of about (3.91), which is an average that falls in the fourth category of the five-point scale (from 3.41 to 4.20), which is the category that indicates option I agree to the study tool. It is also clear after arranging the phrases in descending order that:

1-Phrase (1) “Providing continuous feedback via electronic homework to raise female students’ academic achievement,” came in first place with a mean of about (4.08); the explanation for this is that providing continuous feedback through electronic homework to raise the academic achievement of female students. It enhances the treatment of deficiencies in female students’ standards, which contributes to raising their level of academic achievement. This result is consistent with the result of a study (Namari, 2022), which showed the availability of electronic assessment applications, and the degree to which science teachers use them.

2-Phrase (8) “Electronic homework develops research skills through digital libraries,” came in second place with a mean of about (4.05); the explanation for this is that electronic homework develops the skill of searching through digital libraries. It improves female students’ acquisition of knowledge, which contributes to raising their level of academic achievement.

3-phrase (9) “Female students invest their time in developing their skills and developing their minds through training and learning” came in third place with a mean of about (4.01); the explanation for this is that female students invest their time in developing their skills and developing their minds through training and learning. It enhances the efficiency of female students’ use of assignments, which contributes to raising their level of academic achievement.

4-phrase (3) “Electronic homework improves female students’ performance level” came in ninth place with a mean of about (3.78); the explanation for this is that electronic homework improves the performance level of female students. It supports the effectiveness of the educational process through electronic assignments, which contributes to raising their level of academic achievement.

5-Phrase (6), which is: “Electronic homework encourages female students to be self-reliant and instill a spirit of competition and cooperation,” came in tenth place with a mean of about (3.74); the explanation for this is that electronic homework encourages female students to rely on themselves and instill a spirit of competition and cooperation. It improves their level of self-learning, which contributes to raising their level of academic achievement.

Answer the fourth question: What are the most prominent challenges facing the electronic assessment from the point of view of secondary school teachers in the city of Hail?

To identify the most prominent challenges facing the electronic assessment from the point of view of secondary school teachers in the city of Hail, frequencies, percentages, arithmetic means, standard deviations, and ranks were calculated for the study members’ responses to the statements of the most prominent challenges facing the electronic assessment from the point of view of secondary school teachers in the city of Hail. The results were as follows:

It is clear from Table (12) that the study members agreed on the most prominent challenges facing electronic assessment from the point of view of secondary school teachers in the city of Hail, with an average of about (3.95), which is an average that falls in the fourth category of the five-point scale categories (from 3.41 to 4.20), which is the category that refers to the option i agree with the study tool. It is also clear from the results of the table after arranging the statements in descending order that:

1-Phrase (1) “Slow Internet speed for running programs related to the electronic calendar,” came in first place with a mean of about (4.20); the explanation for this is that the slow speed of the Internet to run programs related to the electronic calendar; It reduces the speed of the electronic educational process, which hinders the electronic evaluation.

Table No. (12): Responses of study members about the most important challenges facing electronic assessment from the point of the view of secondary school teachers in the city of Hail

no	Phrases	Frequency	Degree of Agree					Mean	Standard deviation	Category	Rank
			%	Strongly agree	Agree	Neutral	Disagree				
1	Slow the Internet speed to run programs related to the electronic assessment	Freq.	104	154	32	6	-	4.20	0.708	Agree	1
		%	35.1	52.1	10.8	2.0	-				
3	Lack of infrastructure for computer	Freq.	110	142	26	18	-	4.16	0.824	Agree	2
		%	37.1	48.0	8.8	6.1	-				

	laboratories.										
2	Unavailability of Internet lines, specialized programs, and lack of immediate technical support.	Fre q.	80	174	28	14	-	4.08	0.741	Agree	3
		%	27.0	58.8	9.5	4.7	-				
4	Lack of guidance for using electronic assessment methods.	Fre q.	88	154	36	18	-	4.05	0.813	Agree	4
		%	29.7	52.0	12.2	6.1	-				
11	Female students neglect electronic homework and electronic tests.	Fre q.	76	166	34	18	2	4.00	0.823	Agree	5
		%	25.7	56.0	11.5	6.1	0.7				
10	The lack of female students' persistence in the activities of building and developing the electronic achievement file.	Fre q.	68	162	50	14	2	3.95	0.805	Agree	6
		%	23.0	54.7	16.9	4.7	0.7				
5	The large number of steps required to perform one of the electronic calendar methods.	Fre q.	66	166	44	20	-	3.94	0.800	Agree	7
		%	22.3	56.0	14.9	6.8	-				
9	Female students use the electronic achievement file all the time spent following up and developing each student individually.	Fre q.	52	172	60	10	2	3.89	0.750	Agree	8
		%	17.6	58.1	20.3	3.4	0.7				
6	Some teachers' poor knowledge of the steps for implementing electronic evaluation methods.	Fre q.	68	154	50	18	6	3.88	0.901	Agree	9
		%	23.0	52.0	16.9	6.1	2.0				
7	Lack of awareness among some teachers of the	Fre q.	48	168	56	20	4	3.80	0.839	Agree	10
		%	16.2	56.7	18.9	6.8	1.4				

	importance of electronic assessment and a positive outlook on it.										
12	Female students spend most of their time studying in order to complete the scheduled electronic tests.	Fre q.	36	174	66	12	8	3.74	0.826	Agree	11
		%	12.2	58.7	22.3	4.1	2.7				
8	Using electronic assessment tools before the class reduces the chances of achieving the lesson objectives because the teaching time is insufficient.	Fre q.	46	148	74	22	6	3.70	0.892	Agree	12
		%	15.6	50.0	25.0	7.4	2.0				
Total Average								3.95	0.510	Agree	

2- Phrase (3) “Lack of infrastructure for computer laboratories” came in second place with a mean of about (4.16); the explanation for this is that the lack of infrastructure in computer laboratories does not allow the availability of the technical requirements necessary for electronic evaluation, which hinders the application of electronic evaluation. This result is consistent with the result of a study (Al-Anazi and Al-Shamrani, 2022), which showed the presence of obstacles that hinder electronic evaluation in light of distance education and the Corona pandemic.

3- Phrase (2) “Lack of Internet lines and specialized programs, and lack of immediate technical support,” came in third place with a mean of about (4.08); The explanation for this is that the lack of Internet lines, specialized programs, and the lack of immediate technical support increases technical malfunctions, which hinders the application of the electronic calendar.

4- Phrase (12): “Female students spend most of their time studying in order to complete the prescribed electronic tests” came in eleventh place, with a mean of about (3.74); the explanation for this is that female students spend most of their time studying in order to complete the scheduled electronic tests. It reduces their interaction with calendar efforts, which hinders the implementation of electronic calendar.

5- Phrase (8) “Using electronic assessment tools beforehand in class reduces the chances of achieving the lesson objectives because the teaching time is insufficient” came in twelfth place with a mean of about (3.70); the explanation for this is that the use of electronic assessment tools is prior to the class; It reduces the chances of achieving lesson objectives because the teaching time is insufficient, which reduces the time available for evaluation, which hinders the application of electronic evaluation.

Research results

To achieve the research objectives, the researcher sought to answer the following questions:

1. What is the role of electronic assessment in raising the level of academic achievement for female students from the point of view of secondary school teachers in Hail?
2. What are the most prominent challenges facing electronic assessment from the point of view of secondary school teachers in Hail?

The summary of the most important findings of the study:

To answer the main question: What is the role of electronic assessment in raising the level of academic achievement for female students from the point of view of secondary school teachers in Hail?, The results of the study showed that the study members agreed on the role of the electronic assessment in raising the level of academic achievement for female students, with an mean of about (3.89). It became clear that the most important results of the role of the electronic assessment in raising the level of academic achievement for female students were represented in: that the role of the assessment through the electronic achievement file was with an average of about (3.96), followed by the evaluation period through electronic assignments, which had an average of about (3.91), finally the evaluation period through electronic testing came, with an average of about (3.80).

First question: The role of evaluation through the electronic achievement file in raising the level of academic achievement among female secondary school students: The results of the study showed that the study members agreed on the role of evaluation through the electronic achievement file in raising the level of academic achievement for female secondary school students, and that the most important roles of evaluation through the electronic achievement file are in raising the level of academic achievement for secondary school female students.

Second question: The role of evaluation through electronic testing in raising the level of achievement: The results of the study showed that the study participants agreed on the role of assessment through electronic testing in raising the level of achievement, and that the most important role of assessment is through electronic testing in raising the level of achievement.

Third question: The role of assessment through electronic assignments in raising the level of achievement: The results of the study showed that the study participants agreed on the role of assessment through electronic assignments in raising the level of achievement, and that the most important role of assessment is through electronic assignments in raising the level of achievement.

Fourth question: What are the most important challenges facing electronic assessment from the point of view of secondary school teachers in the city of Hail? The results of the study showed that the study participants agreed on the most important challenges facing electronic assessment from the point of view of secondary school teachers in the city of Hail.

Recommendations

1. Working to address the problems of the slow Internet speed to run programs related to the electronic calendar.
2. Paying attention for providing infrastructure, such as computer laboratories and others, in secondary schools.
3. Working to provide Internet lines and specialized programs, while providing immediate technical support.
4. Paying attention for providing guidelines for using electronic evaluation methods.
5. Urging female secondary school students to pay attention to solving electronic homework assignments and electronic tests.
6. Working to address the deficiencies in female students' persistence in the activities of building and developing the electronic achievement file.
7. Attention to paid for simplifying and reducing the steps required to perform one of the electronic calendar methods.
8. Working to enhance teachers' knowledge of the steps for implementing electronic assessment methods.
10. Paying attention for educating teachers about the importance of electronic assessment and the positive outlook on it.

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