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Abstract

The study aimed to identify the reality of the employment of educational electronic games from the point of view of elementary school teachers in the Kingdom of Saudi Arabia. The researchers used the descriptive approach; a questionnaire was used to collect the data needed for the research after verifying its validity and reliability. The study population consisted of 649 elementary school teachers in Al-Khobar. The study results concluded that most teachers agreed on employing educational electronic games to a large extent. The results also revealed that female teachers face obstacles to the employment of educational electronic games to a moderate degree. In addition, there were statistically significant differences in the degree of employing educational electronic games in the educational process according to the experience variable for the least experience; however, it did not affect the obstacles to the employment of educational electronic games in the educational process. Besides, there were statistically significant differences in the degree of employing educational electronic games in the educational process according to the qualification variable and came in favor of masters; nevertheless, it did not affect the responses to the obstacles to employing educational electronic games in the educational process. Finally, no statistically significant differences existed in the degree of the employment of educational electronic games in the educational process and their obstacles attributed to the educational stage. In light of the study results, the researchers recommend holding training courses and workshops to educate elementary school teachers about activating educational electronic games in education. Also, female teachers should be encouraged to use educational electronic games, and the administrative work entrusted to them must be reduced. Besides, the school's infrastructure must be improved by providing quick internet services and adequate computers. Finally, students must be redistributed to the classrooms in proportion to the school's capabilities.

Introduction

The best way for any nation's advancement and its individuals is the belief that science is the means for advancing

societies at all levels. Therefore, educational institutions in the Kingdom of Saudi Arabia receive great attention at the level of education in all its stages in order to improve the education level. It is noticeable in recent years the significant development in the use of techniques and technological competencies and their applications and knowledge manufacturing mechanisms. This necessitated educational institutions to shift from traditional methods to modern methods based on technology to meet the challenges posed by this development. This development contributed to many fields, and among these fields is the field of educational electronic games. Eshtiouh and Elyan (2010) indicated that learning through educational electronic games is a type of education that relies on the use of modern educational software. It aims to present the material interestingly and enjoyably. This software is used inside the classroom as an aid, or outside the classroom environment as a tool for self-learning, which creates interactive learning environments that encourage knowledge-building processes. The games are presented in an educational way that leads to self-directed learning that encourages the acquisition of different skills (Ghaziz, 2017). Al-Atwa (2022) indicated that educational electronic games have become today one of the most successful means that make the student active and effective during the learning process. They have diversified with the advancement of technology; audio-visual, fixed and mobile games and individual or group games appeared.

Allery (2014) indicated that educational electronic games could provide a structured learning experience and improve learning outcomes. They do not require previous experience, and therefore, all students have the same opportunity. Games play an important role in providing pupils with opportunities to participate, plan, negotiate, analyze, and make decisions. Also, the fun of playing makes learning unforgettable. Abu Jarbou (2018) concluded that educational electronic games have an effective effect in increasing students' motivation to learn. Games stimulate students to study and thus understand the lesson simply and easily. In addition, they stimulate aspects of fun, competition, social communication, and immediate access to and sharing of information, which is the most important thing that represents the current generation or the digital generation. In light of this, teachers have become aware of the students' need for these electronic games in a new and fun way, because of their positive impact on students, and what they offer to satisfy their needs related to the learning process. Al-Balawi (2018) mentioned that the teacher today is one of the important elements in integrating technology into the educational environment; whenever the teacher is good at employing educational electronic games, this helps to make up for deficiencies in the curriculum. On the other hand, the teacher who does not have the capabilities and distinctive capabilities in employing educational electronic games, will not be able to keep up with the curriculum even if the curriculum is distinctive. Therefore, most countries have paid attention to developing the teacher to reflect positively on him and the learner.

Statement of the Problem

The Ministry of Education has paid attention to digital transformation through the Future Gate project, within the framework of the Kingdom of Saudi Arabia's Vision 2030. This project aims to apply and benefit from modern technologies so that schools become an integrated digital environment as a requirement of twenty-first-century skills. The educational environment makes the student the nucleus of the educational process and an essential axis in creating an attractive and new environment that relies on technology to deliver knowledge and increase

students' academic achievement. The project also aims to support and develop the teachers' scientific and educational capabilities (Future Gate, 2023). Al-Haila (2017) explained that educational electronic games are one of the most important means that help students develop in all mental, physical, social, moral, emotional, skillful, and linguistic aspects. Therefore, employing educational electronic games in education has become a fundamental goal to reform educational problems. Al-Awn (2012) found the effectiveness of using electronic games with a preschool child in developing his ability to imagine, intuition, creativity, depth of thinking, and coordination between perception and understanding, i.e., coordination between what the eyes see and what the body does. Al-Hudhaif (2010) concluded that electronic games are useful in developing many life skills; they provide a virtual world that develops memory, and speed of thinking and stimulates attention.

Students are the source of real wealth. They are the hope for a better future. Therefore, paying attention to their care and upbringing is a vital matter in the light of which the teachers of the future of society are determined. Hence, it became necessary to transform the students' usual learning environment by the teacher into a technology-based learning environment. Al-Alimi (2016) found that students' weakness in mathematics was the result of the knowledge explosion and rapid development in various journals, and the difficulty of explaining (delivering) mathematical concepts and applying them. This led to the reluctance of a large segment of students to study. Many previous studies have found a low level of academic achievement in the elementary stage in the Kingdom of Saudi Arabia (Al-Zahrani, 2014; Al-Zahrani, 2014; Al-Zubaidi, 2014; Othman et al., 2014).

Among the recommendations of the Virtual International Conference on Education in the Arab World (2021) are the use of technology in teaching and learning and the interest in building the student's personality in all respects because it expands his perceptions of problems and ways to solve them, respecting diversity, and accepting other opinions. These goals are what the Kingdom of Saudi Arabia seeks through achieving Vision 2030 in education. They seek to prepare mature, ambitious, and future generations with a spirit of challenge and competition. This can be done by preparing a technological educational environment that stimulates creativity and innovation. From this standpoint, there was a need to employ educational electronic games to transform learning from passive to active knowledge building and from the mere representation of knowledge to the simulation of reality, led by distinguished teachers who possess the skills and expertise necessary to achieve the goals of Vision 2030; therefore, this study studied the reality of employing educational electronic games from the point of view of elementary school teachers in the Kingdom of Saudi Arabia. The statement of the current study was reformulated in the following main and sub-questions:

-What is the reality of employing educational electronic games from the point of view of elementary school teachers in the Kingdom of Saudi Arabia?

1- What is the degree of employing educational electronic games from the point of view of elementary school teachers in the Kingdom of Saudi Arabia?

2- What is the degree of obstacles to employing educational electronic games from the point of view of elementary school teachers in the Kingdom of Saudi Arabia?

3- Are there statistically significant differences between elementary school female teachers in the Kingdom of Saudi Arabia due to the variable of experience, educational stage, and educational qualification?

Objectives of the Study

The main objective of this study is to identify the reality of employing educational electronic games from the point of view of elementary school teachers in the Kingdom of Saudi Arabia. The study aims to achieve the following objectives:

- Identifying the degree of employing educational electronic games in education from the point of view of elementary school teachers in the Kingdom of Saudi Arabia.
- Identifying the degree of obstacles to employing educational electronic games from the point of view of elementary school teachers in the Kingdom of Saudi Arabia.
- Identifying the degree of employing educational electronic games from the point of view of elementary school teachers due to the variable of experience, educational stage, and academic qualification.

Significance of the Study

The significance of this study is in revealing the reality of employing educational electronic games from the point of view of elementary school teachers in the Kingdom of Saudi Arabia. In terms of theoretical significance, the current study provides a list of appropriate criteria for evaluating the reality of employing educational electronic games in the educational process. The study results may also help those responsible for professional development programs for teachers to make decisions based on a scientific study about employing educational electronic games. Besides, the study may contribute to enriching the scientific content in the field of educational electronic games in education. In terms of practical significance, the results of the study may contribute to employing educational electronic games in education. The study results may also help officials in developing forgotten solutions, by identifying the most prominent obstacles to using educational electronic games in education.

Delimitations of the Study

Three delimitations were identified in this study. First, the study is limited to identifying the reality of employing educational electronic games and the most prominent obstacles facing their use. Second, the study was administered to the female teachers of the elementary stage in the city of Al-Khobar. Third, the study was conducted in public schools in Al-Khobar, in the Eastern Province, in the Kingdom of Saudi Arabia. Finally, this study was implemented during the second semester of the academic year 1443/1444 AH.

Key Terms of the Study

Educational electronic games are “Software that aims to mix learning and entertainment at the same time, to generate excitement, suspense, and a serious desire for learning mixed with entertainment. The researchers defined educational electronic games in this study as the games that are available on electronic devices and are used to achieve educational goals by taking steps and bypassing stages until the student reaches the required solution. They are characterized by stimulating pupils' motivation to learn through the elements of suspense and fun. In addition, they deepen the spirit of cooperation and positive interaction among students in educational situations.

Theoretical Framework

Educational Electronic Games

There are many definitions of educational electronic games from the point of view of many researchers. Hashem (2017) defined them as a form of learning that centers on the student and is based on a set of planned actions that the student performs on the computer according to specific rules to achieve a certain and enjoyable educational goal within a competitive framework. It also allows the student the freedom to experiment and explore effectively in the educational environment. Salem (2005) defined educational electronic games as one of the methods of using computers in education by integrating the education process with play in an educational recreational model to stimulate students' motivation to develop their skills and attitudes towards specific topics. Al-Mallah and Al-Maghawry (2016) refer to educational electronic games as an interactive method of education that aims to present scientific material through an electronic device, using attractive software to arouse the attention of students while following the teacher to achieve specific educational goals. Al-Ghamdi (2021) sees that they are educational activities that depend on the extent to which the educational skill to be developed is related to the game. The more skill-related the game, the better results will be achieved under the supervision and guidance of the teacher. Through the previous definitions, the researchers concluded that educational electronic games are the games that are available on electronic devices and are used to achieve teaching objectives by taking steps and bypassing stages until the student reaches the required solution. They are characterized by stimulating pupils' motivation to learn through aspects of suspense and fun. In addition, they deepen the spirit of cooperation and positive interaction among students in educational situations.

Many studies have indicated the importance of using educational electronic games in learning processes. Saqr and Abdel Maksoud (2019) concluded the importance of using electronic games in the educational process for elementary school teachers. Alam (2018) also found a positive effect of teaching methods through electronic games on the achievement of third-grade students. In light of this, Al-Atwa (2022) emphasized that educational electronic games train students to use technologies and provide them with self-learning skills. They also work to transfer education from abstraction to realism, enhance and shape the student's personality, and make learning outcomes less likely to be forgotten. In addition, they motivate students to interact during the lesson and increase logical thinking and provide an attractive environment in the classroom. Hamid (2014) indicated a preference for the use of computers in education among teachers because it provides many options and facilitates the process of developing artistic abilities and creativity, which is difficult to obtain through traditional teaching methods. Al-Hadlaq (2012) concluded that educational electronic games contributed to the development of student’s academic and social skills, as well as writing skills, foreign languages, critical thinking, and problem-solving.

Many researchers believe that there are obstacles to using educational electronic games in education, such as the lack of time allotted for the class and the time specified for completing the course. Also, there is difficulty finding educational games that suit the specific educational goals and the stagnation of some topics in the course content (Azmy, 2015). Hashem (2017) added that the design of the courses does not provide the opportunity to implement any additional activities. Educational electronic games have a high material cost, which makes it difficult for the teacher to use them, whereas there are low-cost games, in exchange for which they lose many of their benefits,

which reduces their practice. Jaber (2020) concluded that the most prominent obstacles to using educational electronic games in education are the lack of Arab electronic games compared to foreign games. In addition, some electronic games consume effort and time for the teacher and the student, in addition to the negative view by teachers of game-based education and the poor design skills of teachers. Saqr and Al-Maqsood (2019) indicated that the most significant obstacles to using educational electronic games are the lack of a strong internet network and the availability of a sufficient number of tablets or computers. Al-Dosari (2023) concluded that one of the most prominent difficulties in using educational electronic games is a large number of students in the classroom. The researchers added that the practice of educational electronic games in education requires that the teacher allocate time from the class to clarify and explain the game's mechanism and its employment.

Main Foundations for Building Electronic Games

The Arab Academy for E-Learning presented the main foundations that must be available in educational games, whether electronic or otherwise, as follows:

1- *The goal:* clear and appropriate to the player's desire for the game.
2- *The rules:* declared and clear to the players.
3- *Competition:* It is between the player and another player, between the player and the computer, or between the player and the mastery of a particular skill.
4- *Challenge:* to stimulate the student and sharpen his motivation to complete the game.
5- *Entertainment:* is the basis of the educational game. This was confirmed by Al-Atwa (2022).

According to Khreisheh and Al-Borini, (2022), educational electronic games refer to electronic simulation games that develop planning, thinking, and organization skills. They mentioned examples, including city-building games, trade simulation games, and pet-raising simulation games. There are electronic role-playing and acting games that include playing different roles, acting, and speaking that develop the player's courage to communicate with others. They mentioned examples, including visual novel games, social networking games, acting and role-playing games, transportation control games, and train and space flight games. Al-Salem (2013) mentioned that the classification of electronic games may be according to their type, their purpose, or according to their handling of topics, or according to the age stages. They were classified according to their purpose into three types. Educational games aim to combine fun and learning and cover many areas such as mathematics, science, history, geography, and biology. Intelligence games rely on logical thinking and decision-making, such as electronic chess. Fun and exciting games aim to provide entertainment and focus on the interaction of players within them, with gradual levels of specific difficulty. In light of this, the researchers present a classification of educational electronic games according to the fields they serve through the illustration in Figure 1.

Khreisheh and Al-Borini (2022) set criteria for their selection as follows:

1- They must be linked to a specific and clear goal that can be observed and measured.
2- They must satisfy their students and be among their interests.
3. They must take into account the students' developmental characteristics and the individual differences among them.

4. They must be innovative and of high quality.
5. They must be linked to the school curriculum.
6. Their content should emphasize learning pre-concepts and skills before learning new ones.
7. They must develop in the child the aspects of thinking, distinction, observation, and decision-making.

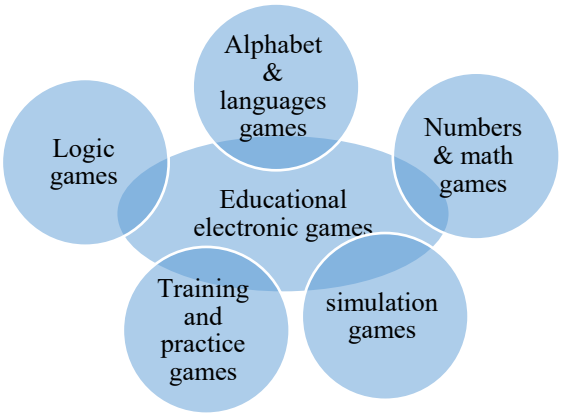

Figure 1. Classification of Educational Electronic Games

Elementary Stage

Mutawa and Al-Hussan (2014) defined the elementary stage as formal education that deals with the pupil from the age of six to the age of twelve. It is also the formal education that takes its place at the beginning of the educational ladder. Children join it from their middle childhood from the age of (6-9) years to the end of late childhood from the age of (9-12) years, to acquire some basic knowledge and skills. Al-Shibli (2001) defined it as the first level of basic education, which makes the student an active member of his community. The Education Policy Document (1416) defined the elementary stage as the base on which the preparation of young people for the next stages of their lives is based. It is a general stage that includes all the sons of the nation and provides them with the basics of correct faith, sound directions, experiences, information, and skills. Al-Zoubi (2001) mentioned that the elementary stage extends from the middle and late childhood stage from the age of six until the age of twelve. It begins with the child entering elementary school and ends with the end of it. At this stage, the focus is on mastering the basic skills needed for reading, writing, and mathematics.

To be able to deal with this stage, we must identify the growth characteristics of its students in light of the literature and studies that dealt with the characteristics of the development of the child in the elementary stage in its various types. In the physical growth stage, the rate of growth is slow compared to the previous stages, but it continues regularly. At this stage, the child tends to move, be active and have the ability to endure, and the manifestations of physical growth are evident through height and weight. In the stage of motor development, the motor activity of the child is characterized by violence and clarity. His movements become more consistent and accurate, he develops the required skills of writing, reading, and drawing, and he can express things and remember them

through understanding. He also learns language, and math, relating things to one another, and has self-care skills. He can eat and clean without the help of others, and he develops social participation skills, such as helping others (Al-Zoubi, 2001). In the language development stage, the child's language improves in writing and expression by entering elementary school. The school helps him learn language skills. At this stage, the child can discuss and focus on one topic and can transfer oral expression to written expression. In this stage of mental and cognitive development, the child becomes able to solve the problems facing him and to think at the beginning of this stage, thinking of the sensory type, and at the end of it reaches abstract thinking. Also, he can distinguish between reality and imagination and turn towards truth, imagination, and creativity (Al-Yahya, 1424). In the stage of emotional development, the child's emotions are characterized by stability, steadfastness, and calmness. At this stage, children learn to satisfy their needs in a constructive way, far from tantrums, and their emotions acquire a social dimension, which helps them communicate and interact with others, and they also can accept the emotions of others. In the stage of social development, which is characterized by multiplicity, diversity, and discrepancy between the family and the school, the child's ability to work together increases, which helps him learn to respect laws and rules and consider them important and necessary. His sense of belonging to a group of friends also increases, and he can form diverse social relationships with his peers and those older or younger than him, and he develops a spirit of competition, social responsibility, and the ability to control behavior because he can distinguish between right and wrong (Younes, 2011). The researchers believe that the employment of educational electronic games in the elementary stage is closely related to the characteristics of growth. Teachers should consider these characteristics when applying them. In addition, the readiness of the elementary school student to play educational electronic games requires mental and physical maturity.

Elementary School Teacher and his Educational Role

The teacher is of great importance in the educational process. He guides students and provides them with the necessary conditions for their cognitive and scientific growth. The teaching profession is considered one of the most difficult professions because the teacher interacts with a group of students, including individual differences, at different cultural, scientific, and social levels. This requires the teacher to diversify the methods of dealing with them, whether to communicate information, solve problems, or modify behavior. This makes the teacher face daily problems of different origins and sizes (Al Suleiman, 1423). Abu Arad and Al-Ghafiri (2017) also indicated that the importance of the elementary stage obliges teachers to be highly qualified and skilled in the education and teaching process. In addition, they must be continuously trained by specialists and experienced in how to deal with this category and take care of it to keep pace with the movement of scientific progress and contribute to it. Besides, Al-Hamid and others (2004) indicated that the importance of the elementary stage lies in being the real beginning of the process of comprehensive development of children's perceptions.

A successful teacher seeks to achieve the comprehensive and balanced growth of the personalities of his students spiritually, socially, mentally, emotionally, and physically. The teacher also has a major role in nurturing creativity and achieving the goals of education. The truly qualified teacher is the leader of the educational process of creativity. He is the maker of change and development in the era of knowledge flow which requires him to transfer his advanced experiences to his students in a positive way that interests them (Al-Sayed, 2010). The most

important roles played by the elementary school teacher to achieve psychological, social, and academic compatibility for students according to the objectives set by the educational system can be summarized as follows:

1. Satisfying the students' mental, cognitive, and emotional needs, and respecting their tendencies and attitudes.
2. Changing students' negative attitudes and modifying them by helping them develop their talents, abilities, and aspects of their physical, mental, and emotional personality.
3. Working to support desirable behavior that is in line with the values and culture of society, and encourage them to adhere to teaching Islam in all their personal and social behaviors.
4. Encouraging students to succeed and achieve and avoid failure whenever possible.
5. Using positive reinforcement and avoid punishment, especially corporal punishment.
6. The ability to early identify cases of maladjustment among students, and to identify early diagnosis and treatment methods.
7. Identifying the individual differences among students, taking into account the characteristics of their stage of development, studying the psychological and social problems they go through to find out their causes, and working to treat them in cooperation with the home, the social and psychological specialist, and the school administration.
8. Educational guidance and counseling on an ongoing basis for the immediate and continuous correction of behavioral errors, which students do, to protect them from deviation or disorder.
9. Providing students with positive attitudes towards school, education, work, and society, and working to provide a school climate dominated by love, emotional participation, and freedom of expression so that the student feels safe and belonging (Murabit, 2006).
10. Provoking the thinking of his students to increase their effectiveness and providing his students with all kinds of thinking skills, such as critical, creative, and reflective, according to qualitative methods of teaching and learning (Ziada et al., 2008).

Methods

The current study aimed to identify the reality of employing educational electronic games from the point of view of elementary school teachers in the Kingdom of Saudi Arabia. To achieve the study objective, the researchers used the descriptive survey method.

Population and Sample of the Study

The study population consisted of all elementary school teachers in the city of Khobar for the year 2022; they numbered 649. The researchers used the convenient sampling method to select the study sample. An electronic link was created and circulated to the target group, and after determining the response period of one month to receive the responses, their number reached 204 female teachers, with a rate of 31.4% of the study population. Table 1 shows the distribution of the study sample according to the variables of educational qualification, experience, and educational stage.

Table 1. Distribution of the Study Sample according to the Variable of Educational Qualification, Experience, and Educational Stage

Variable	Group	No.	%
Experience	1-5 years	70	34.3
	6-10 years	54	26.5
	+ 10 years	80	39.2
Educational qualification	Diploma	53	26.0
	Bachelor	128	62.7
	Master & higher	23	11.3
Educational stage	Lower grades	97	47.5
	Higher grades	107	52.5
Total		204	100

Instrument

The questionnaire was developed to reveal the reality of employing educational electronic games from the point of view of elementary school teachers in the Kingdom of Saudi Arabia, after referring to previous studies and references for the current study. The questionnaire, in its final version, consisted of 30 items, distributed on two domains according to a four-point Likert scale (always - sometimes - rarely - never), and they take the following values in order (4, 3, 2, 1).

Validity and Reliability

The validity of the questionnaire was verified by presenting it to five experienced and specialized faculty members. Their directives and suggestions were taken into account in terms of adding new items, deleting or amending inappropriate items and the items being appropriate to the domain to which they belong, and the clarity of the wording and the soundness of the language. Also, the study tool was applied to a survey sample consisting of 20 female teachers. Then, Pearson's correlation coefficient was calculated between the items with the total score of the domain to which it belongs. Table 2 shows the results.

Table 2. Pearson Correlation Coefficient between the Items of the Reality of Employing Educational Electronic Games from the Point of View of Elementary School Teachers in the Kingdom of Saudi Arabia, with the Total Score of the Domain to which They Belong

No.	Domain-item	Pearson correlation	Sig.
First: The degree of employing educational electronic games in the educational process			
1	I include educational electronic games aimed at education.	.718**	.000
2	I use educational electronic games to simplify students' scientific concepts.	.480*	.032
3	I use educational electronic games to draw students' attention to the lesson.	.576**	.008
4	I use educational electronic games for fun and entertainment.	.644**	.002

No.	Domain-item	Pearson correlation	Sig.
5	I use educational electronic games to stimulate learning motivation among students.	.701**	.001
6	I employ educational electronic games in developing students' multiple intelligences.	.708**	.000
7	I employ educational electronic games in developing students' creative thinking.	.505*	.023
8	I diversify the employment of educational electronic games in accordance with the learning styles of students.	.803**	.000
9	I employ educational electronic games to take into account individual differences among students.	.713**	.000
10	I use educational electronic games to address learning difficulties.	.761**	.000
11	I use educational electronic games to increase honest competition among students.	.789**	.000
12	I apply educational electronic games that help repeat trial and error among students without any negative repercussions.	.642**	.002
13	I participate students in implementing some educational electronic games.	.501*	.025
14	I give students some home enrichment educational electronic games.	.550*	.012
15	I give students home remedial activities based on educational electronic games.	.752**	.000
Second: Obstacles to employing educational electronic games in the educational process			
1	The school administration where I work is not interested in providing training courses on programs and applications that provide educational electronic games.	.604**	.005
2	The school administration in where I work is not interested in providing incentives and rewards to encourage teachers who apply educational electronic games.	.683**	.001
3	The teaching and administrative burden limits the application of educational electronic games.	.577**	.008
4	The large number of students in one class hinders the possibility of implementing educational electronic games.	.798**	.000
5	Poor infrastructure and modern educational tools and devices provided by the school administration.	.748**	.000
6	There is no Wi-Fi network in the school to use for learning purposes.	.605**	.005
7	The huge scientific content of the course reduces my use of electronic educational games.	.720**	.000
8	I do not have the technical skills to help apply educational electronic games.	.759**	.000
9	I find it difficult to know the applications and programs that provide	.630**	.003

No.	Domain-item	Pearson correlation	Sig.
	educational electronic games.		
10	The lack of laptops or tablets for some students reduces my employment of electronic educational games.	.773**	.000
11	The use of educational electronic games does not serve the educational process in some lessons.	.707**	.000
12	I find it very difficult when using educational electronic games.	.798**	.000
13	My lack of knowledge of the importance of using educational electronic games in teaching limits my use of them.	.716**	.000
14	I think using educational electronic games is a waste of time.	.761**	.000
15	I think that the use of educational electronic games adds a burden on the teacher.	.720**	.000

** Statistically significant at (0.01), * statistically significant at (0.05)

Table 2 shows that the Pearson correlation coefficients between the items of the degree of employing educational electronic games in the educational process with the total score of the domain belonging to it were statistically significant at the level of 0.01, or 0.05. Pearson's correlation coefficients between the items with the total score ranged between 0.480* - 0.803**, all of which are significant at 0.01 or 0.05. The correlation coefficient between items of obstacles to employing educational electronic games in the educational process with the total degree of obstacles ranged between 0.577** -- 0.798**. They are significant at the level of 0.01.

In addition, reliability coefficients were calculated on the domains of the reality of employing educational electronic games from the point of view of elementary school teachers in the Kingdom of Saudi Arabia through Cronbach's alpha equation. The study tool was applied to a survey sample consisting of 20 female teachers. Table 3 shows the reliability coefficients.

Table 3. Cronbach's Alpha Reliability Coefficients for the Domains of the Reality of Employing Educational Electronic Games from the Point of View of Elementary School Teachers in the Kingdom of Saudi Arabia

No.	Domain	No. of items	Reliability coefficient
1	First: The degree of employing educational electronic games in the educational process	15	0.90
2	Second: Obstacles to employing educational electronic games in the educational process	15	0.92

Table 3 shows that Cronbach's alpha reliability coefficient for the degree of employing educational electronic games in the educational process was 0.90. The reliability of obstacles to employing educational electronic games in the educational process was 0.92. These values are high-reliability coefficients, suitable for the study. This result indicates that the study tool has reliability.

Statistical Processing & Study Procedures

The statistical software (SPSS) (v 23) was adopted in analyzing the results of the study and answering its questions. The following were used:

- Pearson correlation coefficient was used to check the validity of consistency.
- Cronbach's alpha was used to check the reliability of the study tool.
- Means, standard deviations, and rank for the questions:
  1- What is the degree of employing educational electronic games from the point of view of elementary school teachers in the Kingdom of Saudi Arabia?
  2- What is the degree of obstacles to employing educational electronic games from the point of view of elementary school teachers in the Kingdom of Saudi Arabia?
  3- Are there statistically significant differences between elementary school female teachers in the Kingdom of Saudi Arabia due to the variable of experience, educational stage, and educational qualification?

Also, the following grading was adopted for the degree of achievement of the items and domains of the study tool to determine the degree of approval based on the range equation:

Table 4. Criteria for Interpreting the Values of Means according to the Range Equation

Degree of agreement	Very low	Medium	Large
Mean	1-2	>2-3	> 3-4

Results

This section presents the most results reached in the current study through answering the research questions.

Results of the First Research Question: What is the Degree of Employing Educational Electronic Games from the Point of View of Elementary School Teachers in The Kingdom of Saudi Arabia?

The researchers calculated the means, standard deviations, and ranks of the study sample's responses to the degree of employing educational electronic games from the point of view of elementary school teachers in the Kingdom of Saudi Arabia. Table 5 shows the results.

Table 5. Means and Standard Deviations of the Study Sample's Responses of the Degree Employing Educational Electronic Games from the Point of View of Elementary School Teachers

No.	Rank	Items	Means	Standard deviations	Degree
1	12	I include educational electronic games aimed at education.	3.16	.799	Large
2	5	I use educational electronic games to simplify students' scientific concepts.	3.27	.683	Large

No.	Rank	Items	Means	Standard deviations	Degree
3	2	I use educational electronic games to draw students' attention to the lesson.	3.32	.710	Large
4	10	I use educational electronic games for fun and entertainment.	3.21	.775	Large
5	1	I use educational electronic games to stimulate learning motivation among students.	3.33	.747	Large
6	4	I employ educational electronic games in developing students' multiple intelligences.	3.29	.776	Large
7	8	I employ educational electronic games in developing students' creative thinking.	3.25	.762	Large
8	9	I diversify the employment of educational electronic games in accordance with the learning styles of students.	3.23	.799	Large
9	3	I employ educational electronic games to take into account individual differences among students.	3.30	.773	Large
10	13	I use educational electronic games to address learning difficulties.	3.14	.856	Large
11	7	I use educational electronic games to increase honest competition among students.	3.26	.793	Large
12	6	I apply educational electronic games that help repeat trial and error among students without any negative repercussions.	3.27	.769	Large
13	11	I participate students in implementing some educational electronic games.	3.20	.916	Large
14	14	I give students some home enrichment educational electronic games.	2.90	.939	Medium
15	15	I give students home remedial activities based on educational electronic games.	2.86	.917	Medium
		The degree of employing educational electronic games from the point of view of elementary school teachers in the Kingdom of Saudi Arabia	3.20	.595	Large

Table 5 shows that the total score for employing educational electronic games from the point of view of elementary school teachers in the Kingdom of Saudi Arabia came to a large degree, with a mean of 3.20 and a standard deviation of 0.595. The means for all items ranged between 2.86 - 3.33. Item (5), "Use educational electronic games to raise students' learning motivation." ranked first with a mean of 3.33 and a standard deviation of 0.747 with a large degree. In the second place, item (3), “Use educational electronic games to attract student's attention

to the lesson, came with a mean of 3.32 and a standard deviation of 0.710 to a large extent. In addition, they must be continuously trained by specialists and experts in how to take care of this category to keep pace with the movement of scientific progress and contribute to it. Item (15), “I give students home remedial activities based on educational electronic games." ranked last with a mean of 2.86 and a standard deviation of 0.917 with a moderate degree. This result is because the teacher applies educational electronic games under his supervision during the class to achieve specific goals.

Results of the Second Research Question: What is the Degree of Obstacles to Employing Educational Electronic Games from the Point of View of Elementary School Teachers in the Kingdom of Saudi Arabia?

The researchers calculated the means, standard deviations, and ranks of the study sample's responses to the degree of obstacles to employing educational electronic games from the point of view of elementary school teachers in the Kingdom of Saudi Arabia. Table 6 presents the results.

Table 6. Means and Standard Deviations of the Study Sample's Responses to the Degree of Obstacles to Employing Educational Electronic Games from the Point of View of Elementary School Teachers in the Kingdom of Saudi Arabia

No.	Rank	Items	Means	Standard deviations	Degree
1	10	The school administration where I work is not interested in providing training courses on programs and applications that provide educational electronic games.	2.50	.995	Medium
2	9	The school administration in where I work is not interested in providing incentives and rewards to encourage teachers who apply educational electronic games.	2.54	1.028	Medium
3	5	The teaching and administrative burden limits the application of educational electronic games.	3.20	.758	Large
4	7	The large number of students in one class hinders the possibility of implementing educational electronic games.	3.04	.936	Large
5	1	Poor infrastructure and modern educational tools and devices provided by the school administration.	3.35	.782	Large
6	2	There is no Wi-Fi network in the school to use for learning purposes.	3.34	.926	Large
7	3	The huge scientific content of the course reduces my use of electronic educational games.	3.26	.816	Large
8	13	I do not have the technical skills to help apply educational electronic games.	2.28	1.054	Medium

No.	Rank	Items	Means	Standard deviations	Degree
9	11	I find it difficult to know the applications and programs that provide educational electronic games.	2.49	1.015	Medium
10	4	The lack of laptops or tablets for some students reduces my employment of electronic educational games.	3.21	.924	Large
11	8	The use of educational electronic games does not serve the educational process in some lessons.	2.56	.958	Medium
12	14	I find it very difficult when using educational electronic games.	2.18	1.087	Medium
13	15	My lack of knowledge of the importance of using educational electronic games in teaching limits my use of them.	2.13	1.102	Medium
14	12	I think using educational electronic games is a waste of time.	2.38	1.032	Medium
15	6	I think that the use of educational electronic games adds a burden on the teacher.	3.16	.874	Large
		The school administration where I work is not interested in providing training courses on programs and applications that provide educational electronic games.	2.76	.544	Medium

Table 6 shows that the total degree of obstacles to employing educational electronic games from the point of view of elementary school teachers in the Kingdom of Saudi Arabia came in a moderate degree with a mean of 2.76 and a standard deviation of 0.544. All means for the obstacles ranged between 2.13 - 3.35. The most obstacles were item (5) "Poor infrastructure and modern educational tools and devices provided by the school administration." with a mean of 3.35 and a standard deviation of 0.782 to a large extent. Then, item (6), "There is no Wi-Fi network in the school that is used for learning purposes" followed by a mean of 3.34 and a standard deviation of 0.926 with a large degree. While the least of the obstacles was item (13), "My lack of knowledge of the importance of using educational electronic games in teaching limited my use of them", with a mean of 2.13 and a standard deviation of 1.102 with a moderate degree.

Results of the Third Research Question: Are There Statistically Significant Differences Between Elementary School Female Teachers in the Kingdom of Saudi Arabia due to The Variable of Experience, Educational Stage, and Educational Qualification?

Means and standard deviations of employing educational electronic games were extracted from the point of view of elementary school teachers due to the variable of experience, educational stage, and educational qualification. Table 7 shows the results.

Table 7. Means and Standard Deviations of the Reality of Employing Educational Electronic Games from the Point of View of Elementary School Teachers due to the Variable of Experience, Educational Stage, and Educational Qualification

Variable	Group	Means\ standard deviations	The degree of employing educational electronic games in the educational process	Obstacles to employing educational electronic games in the educational process
Experience	5 years or less	Mean	3.35	2.69
		Standard deviation	.616	.614
	6- 10 years	Mean	3.13	2.79
		Standard deviation	.448	.508
	+ 10 years	Mean	3.10	2.80
		Standard deviation	.641	.496
Qualification	Diploma	Mean	3.19	2.69
		Standard deviation	.489	.530
	Bachelor	Mean	3.15	2.79
		Standard deviation	.638	.567
	Higher studies	Mean	3.49	2.72
		Standard deviation	.497	.441
Educational stage	Lower grades	Mean	3.28	2.69
		Standard deviation	.553	.525
	Higher grades	Mean	3.13	2.82
		Standard deviation	.624	.557

In order to show the significance of the differences between the means of the reality of employing educational electronic games from the point of view of elementary school teachers due to the variable of experience, the educational stage, and the educational qualification, the analysis of variance was used. Table 8 depicts the results.

Table 8. Analysis of Variance for the Significance of the Differences between the Means of the Reality of Employing Educational Electronic Games from the Point of View of Elementary School Teachers due to the Variable of Experience and the Educational Stage

Variable	Domain	Type I Sum of Squares	df	Mean Square	F	Sig.
Experience	The degree of employing educational electronic games in the educational process	2.638	2	1.319	3.962	.021
	Obstacles to employing educational electronic games in the educational process	.551	2	.276	.935	.394
Stage	The degree of employing educational electronic games in the educational process	.906	1	.906	2.722	.101

	Obstacles to employing educational electronic games in the educational process	.727	1	.727	2.468	.118
Qualification	The degree of employing educational electronic games in the educational process	2.407	2	1.204	3.616	.029
	Obstacles to employing educational electronic games in the educational process	.522	2	.261	.886	.414
Error	The degree of employing educational electronic games in the educational process	65.911	198	.333		
	Obstacles to employing educational electronic games in the educational process	58.357	198	.295		
Total	The degree of employing educational electronic games in the educational process	2160.396	204			
	Obstacles to employing educational electronic games in the educational process	1613.139	204			

Table 8 shows that there were statistically significant differences at the level of 0.05 for the degree of employing educational electronic games in the educational process according to the experience variable; however, there were no statistically significant differences for the obstacles to employing educational electronic games in the educational process according to the variable of experience. In order to show the statistically significant differences in the degree of employing educational electronic games in the educational process according to the variable of experience, Scheffe's multiple comparisons were used. Table 9 shows the results.

Table 9. Multiple Comparisons of the Degree of Employing Educational Electronic Games in the Educational Process according to the Variable of Experience

Experience (J)		Mean Difference (I-J)	Sig.
5 years or less	10 or more	.25*	.033

Table 9 shows statistically significant differences at the level of 0.05 for the degree of employing educational electronic games in the educational process, according to the experience variable, between the experience level of less than 5 years and experience of more than 10 years. The difference came for the respondents with less experience.

Table 9 also shows that there were statistically significant differences at the level of 0.05 for the degree of employing educational electronic games in the educational process according to the qualification variable. However, there were no statistically significant differences in the obstacles to employing educational electronic games in the educational process according to the qualification variable. In order to show the statistically significant differences in the degree of employing educational electronic games in the educational process according to the qualification variable, Scheffe's multiple comparisons were used. Table 10 displays the results.

Table 10 shows that there were statistically significant differences at the level of 0.05 for the degree of employing

educational electronic games in the educational process, according to the qualification variable, between masters and bachelors, in favor of masters.

Table 10. Multiple Comparisons of the Degree of Employing Educational Electronic Games in the Educational Process according to Qualification

Qualification (J)		Mean Difference (I-J)	Sig.
Maser or higher	Bachelor	.33*	.044

Finally, Table 10 shows no statistically significant differences at the level of 0.05 for the degree of employing educational electronic games in the educational process according to the teaching stage variable. Also, there were no statistically significant differences in the obstacles to employing educational electronic games in the educational process according to the educational stage.

Discussion and Conclusion

The results showed that the total score for employing educational electronic games from the point of view of elementary school teachers in the Kingdom of Saudi Arabia came to a large degree. This result is due to the fact that educational electronic games are among the most interesting and exciting educational means, through which more than one sense can be stimulated by the learner through the use of audio and visual effects. They also satisfy the learner's tendency to play. The results agree with those of Al-Atwa's (2022) study, which indicated that educational electronic games stimulate students to interact during the lesson and increase logical thinking. The author emphasized that they enhance and shapes the student's personality and make the learning outcomes less likely to be forgotten.

However, the current results are inconsistent with those of Abu Jarbou's (2018) study, which confirmed that educational electronic games affected increasing students' motivation to learn. The games work to excite the students to the lesson and to understand the lesson simply and easily. They also stimulate the aspects of fun, competition, and social communication. This is what Abu Arad and Al-Ghafiri (2017) pointed out about the importance of the elementary stage for its teachers to be highly qualified and skilled in the education process. In addition, they must be continuously trained by specialists and experts in how to take care of this category to keep pace with the movement of scientific progress and contribute to it. Further, the results also showed students are medially given home remedial activities. This result is due to the fact that the teacher applies educational electronic games under his supervision during the class to achieve specific goals. This is what Khreisheh and Al-Borini (2022) indicated that educational electronic games should be linked to a specific and clear goal that can be observed by the teacher and measured. There are also individual differences among the learners, and the teacher must take into account the weakness of some elementary school students in their use of educational electronic games individually without guidance, or educational electronic games may require a spirit of competition among students.

In addition, the results showed that the total degree of obstacles to employing educational electronic games from

the point of view of elementary school teachers in the Kingdom of Saudi Arabia came to a moderate degree. The most obstacles were poor infrastructure and modern educational tools and devices provided by the school administration and no Wi-Fi network in the school used for learning purposes. This result is similar to that of Lissoy (2020), who pointed out that there were obstacles that impede the application of educational electronic games in education. He also recommended providing a solid infrastructure that promotes the use of educational electronic games in education. Saqr and Al-Maqsood (2019) also confirmed that the most significant obstacles to using electronic educational games are the lack of a strong Internet network and lack of a sufficient number of tablets or computers. While the least of the obstacles was the teacher's lack of knowledge of the importance of using educational electronic games in teaching limited my use of them, the researchers believe that female teachers know the importance of using electronic games in education. However, some obstacles impede their employment in education, such as the lack of time allotted for the lesson, the specific period required to finish the course, and the lack of space, necessary equipment, and the Internet to implement it during teaching. In addition, Al-Dosari's (2023) study added that one of the main obstacles to using educational electronic games is a large number of students in the classroom.

Furthermore, there were statistically significant differences in the degree of the employment of educational electronic games in the educational process according to the experience variable for the least experience; however, it did not affect the obstacles to the employment of educational electronic games in the educational process. Besides, there were statistically significant differences in the degree of the employment of educational electronic games in the educational process according to the qualification variable and came in favor of masters; nevertheless, it did not affect the responses to the obstacles to employing educational electronic games in the educational process. Finally, no statistically significant differences existed in the degree of employing educational electronic games in the educational process and their obstacles attributed to the educational stage.

The study attempted to explore the reality of employing educational electronic games from the point of view of elementary school teachers in the Kingdom of Saudi Arabia. The study results concluded that most teachers agreed on employing educational electronic games to a large extent. The results also revealed that female teachers face obstacles to the employment of educational electronic games to a moderate degree. In light of the study results, the researchers recommend holding training courses and workshops to educate elementary school teachers about activating educational electronic games in education.

Also, female teachers should be encouraged to use educational electronic games, and the administrative work entrusted to them must be reduced. Besides, the school's infrastructure must be improved by having quick internet services and adequate computers for students. Furthermore, students must be redistributed to the classrooms in proportion to the school's capabilities. The researchers suggest conducting studies on the impact of using educational electronic games in raising the development of multiple intelligences among students. It is also necessary to research the attitudes of students in the elementary stage toward the use of educational electronic games. Finally, the study suggests conducting experimental studies to unveil the effectiveness of using educational electronic games in elementary schools.

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