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Volume 3, Issue 6, December 2021

p.74-89

THE EFFECT OF DIGITAL EDUCATIONAL GAMES ON MOTIVATION TOWARDS E-LEARNING AND LIFE SKILLS AMONG PRIMARY SCHOOL STUDENTS IN ARAB SOCIETIES

<http://dx.doi.org/10.47832/2757-5403.6-3.6>

Kareema ALI¹ & Amal SAWALHA²

Abstract:

This study investigates the effect of employing digital educational games (DEGs) on motivation towards e-learning, and life skills of primary school students in more than one Arab context: in Palestine, Jordan, Bahrain, and United Arab Emirates. It also investigates the need to employ these games in the educational process, the challenges which faced the employment of these games, and ways to develop their employment in the learning process. This qualitative study used a multiple case study by conducting open, semi-structured interviews on a sample of four teachers and four parents of two from each country to reveal in-depth views to clarify the mechanism of employing these digital educational games. Data were subjected to multiple case study analysis using Ary et al. (2010) model. The results show that DEGs were a contributing factor in increasing students' motivation towards e-learning and enabling them to acquire the life skills necessary to live in this era when adding these games to the elements of fun and excitement to learn in a collaborative environment. They provide students with communication, problem-solving, decision-making and technological skills. The results also show the challenges that face employing them in the e-learning process, represented in material ones, such as the weakness of the technological infrastructure, and educational ones, such as the weakness of teachers in dealing with DEGs and choosing the appropriate game for the age category and subject. The study recommends adopting the employment of DEGs officially in public education institutions, and providing material and technical support to teachers, students and parents.

Received :
22/09/2021

Accepted:
09/11/2021

Published:
01/12/2021

¹ Dr. , An-Najah National University, Palestine, Kareemanasir78@gmail.com, <https://orcid.org/0000-0003-3645-1949>.

² Dr. , An-Najah National University, Palestine, amalarom2013@gmail.com, <https://orcid.org/0000-0001-8413-955X>.

Key words: Digital Educational Games, E-Learning, Motivation Towards Learning, Life Skills, Arab Society.

Introduction

The continuous development of technologies and their various applications, especially in the educational fields, is one of the most prominent features of our ever-changing and evolving era, and the use of these applications in the educational process is now taken for granted, as the integration of DEGs has become one of the directions of the modern educational system in its various stages. The focus in education systems today is on constructive education, which aims to create a generation eager for knowledge, an education that asks questions and seeks work. Technologies play an important role in the transition to constructive education, specifically when it comes to DEGs that help the transition from teacher-centered learning to student centered learning (Sabirli & Coklar, 2020). Therefore, the use of DEGs in the educational process is of interest to educators and researchers because of their value in the learning process, as many studies have proven their usefulness as an effective educational tool (Pivec & Pivec, 2011). DEGs can be defined as programs that aimed to improve students' performance in their lessons and provide them with problem-solving skills (Acquah & Katz, 2020). DEGs can be powerful learning environments because the activities they include can help students develop a number of cognitive skills (Khanana, 2016).

Many scholars and educators consider play to be a vital component of children's lives, as it is a basic need for children's development, education, and brain stimulation (El-Haqbani, 2016). Since play is an indispensable need for growth, employing it in the educational process has become a must (El-Gabri, 2015). DEGs work to motivate students and increase their motivation towards learning, and help them to mentally grow and enhance what is being learned, by providing a free environment for learning, enabling students to choose the motor characteristics that suit them, in addition to urging them to think (Sabirli & Coklar, 2020; Wan Idris et al., 2020). As for Alothman & Ahdhafeeri (2017), DEGs motivate students and increase their motivation by creating an attractive and stimulating learning environment that stimulates interest ,participation in learning, discussion and excitement for students, in addition to providing the opportunity to practice different skills in virtual contexts wider than those provided by traditional games. Many researchers also stress the importance of employing DEGs in providing students with life skills and their development, by introducing digital games incentives into learning programs and environments (Ali, 2014; Al-Qahtani, 2019).

The sudden transformation from face-to-face education to remote e-learning, as a result of the health crisis that roamed the east and west of the earth, led to the creation of an educational crisis for which the world in general, and the Arab countries in particular, was not prepared. E-learning has become an alternative to face-to face learning as a result of this pandemic, and since play is an educational necessity in face-to-face learning, as it is related to human development from a social, creative, emotional, historical and cultural perspective (Riberio, 2019), its existence becomes more urgent than before as a result of isolation and social distancing imposed by the current crisis. From this point, the importance of this

study appears in revealing the extent of the impact of these games on students' motivation towards e-learning and their acquisition of life skills. Recent research on DEGs examines the effect of employing these games on students' learning in terms of changes in their knowledge, skills, and attitudes (Hsiao et al. ., 2014), and due to the novelty of the topic, it has not been addressed seriously and in detail by Arab researchers. Therefore, this research will focus on knowing the effect of DEGs on the motivation towards e-learning and life skills of primary school students in Arab societies.

DEGs have been employed in the educational process in many countries of the world, but unfortunately, they were not effectively and systematically employed before the Covid 19 crisis in the Arab world, so this research will determine how four Arab societies employ DEGs as a way to influence the motivation towards e-learning and life skills of primary school students.

More specifically, the research raises the following questions:

- What is the role of DEGs in e-learning?
- What is the effect of DEGs on the motivation towards e-learning among primary school students in Arab societies?
- What is the effect of DEGs on life skills of primary school students in Arab societies?
- What are the challenges facing the employment of DEGs in e-learning for primary school students in Arab societies?
- What are the most important suggestions for developing the employment of DEGs in e-learning for primary school students in Arab societies?

Literature review

Digital educational games

DEGs are a powerful tool that encourages children to participate, improve their performance, and stimulate it to generate individual and group experiences (Turgut & Yasar, 2019). Although games are generally used for entertainment purposes, they can also be used in educational activities, as these games help students develop their creativity, decision-making ability, their imagination and thinking skills (Alkan & Mertol, 2019). Also, DEGs enable the addition of learning objectives in the game without the learners being aware of it, but feeling that they are participating in activities of daily life (Chalki et al., 2019).

Many researchers and educators define DEGs such as Jaber (2020) who defines them as a form of learning based on a set of steps and planned actions that the learner performs on the computer, smart phone, and tablet (iPad), by adhering to certain rules to achieve a specific educational goal in an enjoyable competitive framework. It is a type of learner-centered learning that allows the learner the freedom to explore and experiment effectively within the educational environment. While Kim et al. (2018) defines it as a set of activities and interrelated processes for solving problems using or applying game features and elements. DEGs are used in many fields such as science, mathematics and language learning, in order to

provide students with problem-solving skills and strategic thinking skills (Persico et al., 2019).

Carolyn Yang & Chang (2013) believe that students' design for DEGs enables them to build knowledge, develop critical thinking, increase their academic achievement, and enhance the elements of challenge, complexity and creativity. Hoda et al. (2014) emphasizes the importance of DEGs in promoting cooperative learning by promoting mutual awareness, access to information, and equitable control. While Acquah & Katz (2020) believe that these games are useful in providing students with contemporary competencies and participatory behavior, and that a set of advantages must be available in these games in order for them to be effective: ease of use, challenge, rewards and feedback, control, independence, direction, and interaction. Sylven & Sundqvist (2012) emphasize the necessity for the use of DEGs to fit all four Rogers' qualities to facilitate and enhance the learning process in the experiential learning process, namely: DEGs require the personal participation of learners, DEGs can be based on direct practical, social, or personal or research related problems to learners, and these games also give students the opportunity to evaluate their progress and success, and these games also achieve lasting impressions on learners because they are unique, fun and full of challenges.

DEGs can be classified in several ways. Salem (2018) classified them in terms of the number of players or participants in the game into individual games and cooperative ones. While Goldstein (2010) classified these games according to the gameplay and type of in-game players into digital games with competitive, exploratory, and electronic role-playing games. While Chen et al. (2020) has classified them according to the goal of the game into strategy games, adventure games, role-playing games, fighting games, sports games, driving games and puzzle games.

Childhood period is closely related to play and games, and thus the game can be transformed into educational support and a means of motivating students to learn. Philosophers and theorists such as Plato, Vygotsky, Piaget and Rousseau have expressed the positive role of play in child development and education, so DEGs are a modern tool for efficiently integrating play in the twenty-first century (Wilkinson, 2016). Piaget (1990) attached great importance to play in child development. He believes that the development of intelligence in children is closely related to play activities, as each type of games is linked to a specific stage of the child's development. Vygotsky emphasizes that play is an essential factor in the child's social and cognitive development, and stresses in his theory that the teacher is responsible for the development of the child, as he must use play in his educational practices, with the aim of providing children with excellent experiences, and creating an atmosphere of affection between the child and learning, which makes learning more enjoyable and meaningful (Riberio, 2019).

Despite the educational importance of DEGs in the learning process, there is a weak demand for its use by many teachers because it increases the teacher's teaching burdens, from preparing the game in advance until it achieves the goal of its use (Alkan & Mertol et al., 2019). It is confirmed by (Swier & Peterson 2018) that the most prominent challenges to employing these games are that they require great effort and time from the teacher to prepare for one game, in addition to the teachers' need for technical support to be able to use it in their teaching practices.

in the correct manner that achieves the goal. Alkan & Mertol (2019) argue that it is possible to overcome these challenges by training teachers on the necessary practices to employ digital games in the educational process through seminars and training courses.

Motivation towards e-learning

Motivation is the main driver of the individuals' various activities, which they acquire through new experiences, in other words it is the potential energy that must be present for learning to occur (Mahmoud, 2015). Motivation is a complex psychological process that is not easy, and includes many aspects such as perception, behavior, emotion, decision-making, and biological aspects of the personality of the learner (Escobar Fandino et al., 2019). DEGs enhance learning through the techniques of these games that enhance students' interaction and increase their motivation towards learning. Increased awareness of the potential of these games and their ability to increase motivation and thus improve learning has been observed. (Cornillie et al., 2012).

Many studies have attached importance to the effect of DEGs on students' motivation towards learning, such as Gamlo's (2019), which concluded that DEGs were a motivating factor for students' motivation towards learning English as a second language, and also emphasized that motivation is essential when learning languages. Hense & Mandl (2012) stress the necessity of well-designed DEGs that stimulate the internal learner's motivation to learn by meeting three basic psychological needs: competence, independence, and belonging to society.

Life Skills

Life skills are among the concepts that are characterized by modernity, which differ in nature and content from one society to another, according to what each society seeks to achieve in terms of educational goals and meeting the needs of individuals regarding the skills that enable them to live efficiently and effectively. Life skills, as defined by the World Health Organization, are the ability to adaptive and positive behavior that enables the individual to deal effectively with the requirements, challenges and pressures that he faces in daily life. The individual acquires these skills during childhood and adolescence through different people and methods (Kurtde-Fidan & Aydogdu, 2018).

Srikala & Kishore (2010) classifies general life skills that should be taught at the school level with critical thinking and creative thinking skills, decision-making and problem-solving skills, communication and interpersonal skills, skills for dealing with emotions and stress, skills for self-awareness and empathy for others.

DEGs play a big role in the student's acquisition of life skills through school learning. Prajapati et al. (2017) stresses the importance of teaching life skills through school curricula, which is the development of social, emotional and thinking skills among students, as these skills are the basic building block for an active citizen who can deal with future challenges and survive well. As for Vranda & Rao (2011), life skills enhance the psychological and social competencies of students, while Czauderna & Budke (2020) emphasize their importance in providing

students with the skill of making decisions. Whereas Anastasiadis et al. (2018) argue that the application of these games helps to induce interaction, cooperation, communication and active participation in learning. Therefore, employing DEGs has become an urgent necessity in educating and training students to acquire the life skills necessary to live in this era.

Conceptual framework

Through play, children learn many things about themselves and the environment in which they live. And play frees children from restrictions, opens their minds, and unleashes their imaginations, because they find in it the opportunity to work, mastery and experiment, and it develops their perceptions and develops their faculties and senses, which generates a sense of achievement for them (Mahmoud, 2015). Although games are generally used for entertainment purposes, the world today tends to employ them in the educational process (Alkan & (Mertol, 2019) because these games have a great impact on learning. Like other countries of the world, the countries of the Arab world should move towards employing digital educational games in the educational process, especially in e-learning that replaces face-to-face learning which results from the Corona pandemic. DEGs are a type of play, even if it occurs within a virtual environment, but it has the advantages of traditional play that helps the proper growth in all aspects of students' personality, including the social, ethical, intellectual and cognitive ones; Since meaningful and real learning is linked to stimulating motivation towards learning, DEGs in the virtual distance learning space are the most appropriate catalyst for students and the motivation for them to learn, as they -during the playing process- acquire many life skills such as critical thinking, decision-making, problem-solving, communication, interpersonal relationships and others (Srikala & Kishore, 2010) Many of the skills that learners participate in, in DEGs, belong to constructive processes. This includes social negotiation, a sense of self-organization, recalling many previously acquired skills, using these games as a field to practice and improve these skills (De Grove et al., 2012). Several studies have shown changes in students' knowledge, skills, and attitudes as they build them throughout the game's development (Hsiao et al., 2014). But the matter of employing these games in the educational process is not an easy matter, as it is fraught with many obstacles and challenges; Therefore, this study attempts to trace the effect of employing digital educational games on the motivation towards e-learning and life skills of primary school students in four Arab societies, and seeks to uncover the challenges that face their employment in the learning process, especially in developing and relatively new societies with the use of technology in the Learning process such as Arab societies, and how can these challenges be faced, and work to overcome them in the future. To catch up with the developed countries.

Methodology

Research method

This study aims to clarify the role that DEGs play in influencing the motivation towards e-learning, and the life skills of primary school students. The qualitative

research study using the multiple case study method was considered suitable for this study, through which it is possible to gain an in-depth understanding of the problem studied (Creswell, 2012). The multiple case study method is usually used in the educational and social fields to study a number of cases, to understand the differences between them and to find a similarity between these cases (Vannoni, 2014). The multiple case study methodology helps to discover the variation between cases, and the many relationships that can be compared with each other, and generalizes some results that cannot be obtained from a single case study (Levings, 2014).

The participants

Eight participants (four teachers, and four parents) took part in this study: a teacher and a parent from Palestine, a teacher and a parent from Jordan, a teacher and a parent from Bahrain, and a teacher and a parent from (UAE), and they were referred to by fake names. The following table shows the characteristics of the participants.

Table No. (1): the characteristics of the study participants.

the number	Participant name,	Country	Participati on classificati on (teacher /parent)	Age	Educational level	Specialization
1	Hind	Al-Bahrin	Teacher	34	BA	Classroom teacher
2	Salma	Al-Bahrin	Parent	38	BA	Primary education
3	Nuha	Jordan	Teacher	30	BA	Classroom teacher
4	Fatema	Jordan	Parent	40	BA	Classroom teacher
5	Rahma	Palestine	Teacher	36	BA	Islamic Education
6	Suhair	Palestine	Parent	35	BA	Biotechnology
7	Ruba	United Arab Emirates	Teacher	34	BA	Mathematics
8	Jamila	United Arab Emirates	Parent	38	BA	Business Administration

Data collection

The participants were selected according to their desire to participate, and their ability to represent teachers and parents in Arab societies. Data were collected

using semi-structured interviews with open-ended questions. Data were collected by asking questions related to the research questions (Maxwell, 2013). The interviews were conducted in Arabic through the Zoom program, and they lasted about (40) minutes. The participants were asked four open questions: “What is the effect of DEGs on motivation towards e-learning from your point of view?”, “What is the effect of DEGs on empowering students with life skills?”, “Tell me about the most important challenges you faced in employing DEGs in e-learning?”, “What are your suggestions for employing DEGs in e-learning?”. The interviewer asked clarifying questions, and the interviews were recorded, and then transcribed, and the transcripts were handed over to the participants for verification.

Data analysis

The data obtained from the eight participants were subjected to multiple case study analysis, which allowed us to discover the variance between cases, the relationships that could be compared with each other, and generalize some of the results that could not be obtained from a single case study (Levings, 2014). Ary et al. (2010) model was used for data analysis as it consists of three stages that start with organizing the data, then coding and minimizing it, and ending with the interpretation of the data. The analysis concluded on three main axes: the role of DEGs in e-learning, the challenges of employing DEGs in e-learning, and ways to develop the employment of DEGs in e-learning.

Validity and reliability

To ensure the reliability of the data, it underwent a triangulation process, as it was examined with the help of other two researchers. The way in which they viewed the results was discussed and given meaning. This cross-checking of interpretations helped to ascertain the different dimensions of the study. They were thoroughly investigated and the results were reliable, and ultimately led to the formation of a set of interconnected groups (Marshall & Rossman, 2012).

The validity of the study analysis was also ensured by the method of analysis that ensured theoretical saturation. This theoretical saturation is due to the existence of themes and categories, which ensures that a new category does not emerge. The description of categories also ensures that each category has been well developed in terms of its characteristics and dimensions (Strauss & Corbin, 1998). Lincoln & Guba (1985) say that there is no validity without Reliability, so ensuring validity also guarantees reliability, meaning that theoretical saturation also maintains study reliability.

Limitations

The limitations of this study were represented in its sample, where it was small, it did not cover many Arab societies, and the specializations participating in the study were limited to classroom teacher, Islamic education, and biotechnology. Moreover, the study did not cover secondary stage and higher education, but was limited to the primary stage, which limits the generalization of results to other educational contexts. More research is needed to study the impact of DEGs on motivation

towards e-learning and life skills, as more teachers and parents from different disciplines and degrees participate in larger numbers and from more Arab societies. Research results and discussion

The results represent the topics that emerged from the various readings of the opinions and perspectives of the interviewees as follows:

The role of DEGs in e-learning

Play is one of the features that characterize the childhood stage, so children in the stage of basic learning have an urgent need to play, in order to learn through it (Riberio, 2019). Since play is a prerequisite for a child's cognitive development, as Piaget (1990) sees it, the results of this study confirm this importance and reinforce its role in learning. Hind, a teacher from Bahrain, affirmed: "Children love games and in general this age group loves games. I mean, whether in learning or in life in general, and they also love electronic games. This is a generation that loves electronic games and this thing served the educational process very much".

Motivation is the main driver of any activity carried out by the individual (Mahmoud, 2015). For learning to occur and to achieve its goal, there must be a catalyst that helps students to learn, and DEGs are among the factors that stimulate the learning process (Cornilli et al., 2012). In this regard, Hind confirms: "DEGs increase students' motivation to learn by allowing them to receive information from more than one direction, meaning that the information reaches them without being aware, so if they do not understand what I explain to them 100 percent, they can understand through the games".

While Fatima, a parent from Jordan, explained: "Educational games work to stimulate students' motivation, and help them in showing individual differences. Each student chooses his own learning style, and in any possible way, digital games help him develop himself and learn." This is fully consistent with what was stated in the study of (Sabirli & Coklar, 2020; Wan Idris et al., 2020) about promoting DEGs for learning by providing a free environment for learning and enabling the student to choose the kinetic characteristics of the game that suits him.

Far from the precise scientific definition of DEGs, teachers and parents agree that it is an educational strategy, or interactive activities aimed at engaging students and increasing their motivation towards learning, and this is what we find in the definition of (Kim et al., 2018) where he sees them as a set of interrelated activities to solve problems using the characteristics of the games, so Hind defines them as: "interactive activities aimed at engaging the student and increasing his ability and motivation to learn."

While Suhair, a parent from Palestine, defines them as: "A group of games that help achieve fun and learning at the same time, thus saving time and effort for parents in conveying information. They also help the teacher to communicate information in a better way, which leads students to love their subjects and studying."

In order for education to graduate an active citizen who can deal with the challenges of the future, students have to be empowered with life skills, which are the basic building block of their personalities (Prajapati et al., 2017). Many studies have unanimously agreed on the importance of DEGs in empowering students and providing them with Life skills (Vranda & Rao, 2011; Czauderna & Budke, 2020;

Anastasiadis et al., 2018). Participants emphasized the importance of DEGs in providing students with life skills ,such as communication skills, cooperation and teamwork, leadership, technological skills, problem solving, Decision-making and critical thinking. Dalal, a parent, from Bahrain, pointed out that: "Students can acquire the skills of cooperation, participation and discussion, and work in a team spirit in some DEGs".

Fatima, a parent from Jordan, said: "DEGs help students solve problems, make decisions, and think critically."

Whereas, the participants, including teachers and parents, expressed their positive attitude towards employing DEGs and using them in the learning of their students and children, as Salma emphasized:"Employing digital games has boosted the information my son receives.In my opinion, if these games did not exist, the success in distance learning would not have been of such a high degree."

Jamila, a parent from the United Arab Emirates, emphasized the importance of DEGs,by saying: "I ,as a parent, consider it a successful method in overcoming the boredom that students face in e-learning."

Participants from the four Arab contexts agreed on the vital role that DEGs play in increasing students' motivation towards e-learning and providing them with different life skills according to the DEGs used in the learning process.

Challenges of employing DEGs in e-learning

The employment of DEGs in the educational process suffers from weak teachers' demand for them, because it increases the teacher's teaching burdens starting from preparing in advance for the game (Alkan & Mertol, 2019), in addition to the need for technical support to use them in teachers' teaching practices properly (Swier & Peterson, 2018). From the participants point of view, the challenges facing the employment of DEGs were material and technological .In addition to that, schools are not ready for e-learning, and therefore for DEGs. The participants added that some challenges are related to the lack of educational experience in how to employ DEGs, and how to choose the games suitable for age and subject. Nuha, a teacher from Jordan, summarized the challenges she faced, saying: "Unfortunately, public schools were not ready. The technical aspect is not there for parents and teachers. Many teachers cannot deal with basic computer programs like Word and Excel, which makes it impossible for them to deal with DEGs".

Despite her school's readiness in a way compared to developed countries in terms of providing programs, courses and electronic devices for teachers, Hind from Bahrain said: "The abundance of programs sometimes makes me feel confused or chaotic. Training on using new programs needs a long time. Sometimes, when I start using a program I have trained on, I discover that it does not suit the age category of my students. Moreover, some educational games are in English and cannot be translated, so there was no opportunity to benefit from them despite their richness".

Salma, a parent from Bahrain, adds some technical and material challenges at the same time, as many educational digital games sites can only be opened through computers, that is, they cannot be opened through smart phones or iPads, she said: "some educational sites, if not the majority, do not open via the iPad or the phone.

Rather, they need a computer, which imposes difficulty when there is only one device for the whole family and there are more than one member of the family who needs to use them".

Suhair, a parent from Palestine, confirms that the experience is worth a try, but everyone should arm themselves with technical knowledge and how to deal with electronic devices, as she said:

"It is a great experience. My daughter enjoyed a lot, but we need to electronically develop ourselves. I started reading, opening websites and watching videos and I acquired simple knowledge, but for me it is a big achievement because I previously used to know nothing about technology".

Schools were not fully prepared in Jordan and Palestine, unlike the State of Bahrain and United Arab Emirates, whose teachers were ready to employ educational games that are technically valuable and have a technological infrastructure, in addition to the availability of many DEGs sites. However, there are common challenges among these countries represented in the shortage educational experience in choosing the appropriate game for the students' age. Although there are many DEGs available in Bahrain, many of them are not usable in the Arab context because they cannot be Arabized. On the other hand, Palestine and Jordan suffer from the inaccessibility of many DEGs sites, which limits their use in these contexts. This indicates the varying capabilities of Arab countries to employ DEGs in the learning process.

Ways to develop employment of DEGs

Many participants believe that the experience is recent in the Arab countries, and that it needs to be developed, by adopting the formal employment of these DEGs in public education institutions. Most participants agreed on the need to provide material and technical support for teachers, students and parents, through Working on strengthening Internet networks, providing computers for teachers and students, and conducting training courses on how to use DEGs sites, and how to employ them in the educational process. This corresponds to the study (Alkan & Mertol, 2019), which confirmed that it is possible to develop the employment of DEGs by training teachers on the necessary practices to employ them through seminars and training courses. Hind expressed her suggestions saying: "The biggest suggestion is that the educational institution be supportive of the use of DEGs." She added that children in different schools do not get the same opportunity to learn through games because the matter of employing them in the educational process is a personal choice of the teacher. She added: "The use of games is not official, it depends on the teacher and his ability to research and give games, and the percentage of using them varies from one teacher to another."

While Nuha from Jordan suggests providing teachers with digital educational game sites paid by the Ministry of Education, and translated in the Arabic language, as she said: "The ministry should provide teachers with sites that provide paid and quality educational games in the Arabic language, and it should also offer us workshops".

As for Fatima from Jordan, she calls for the necessity to qualify teachers to use these games, as she stated: "I propose that as a first and basic stage, teachers have to be qualified by giving them, for example, courses on using and having technological tools to use DEGs".

Participants in the study from the four Arab contexts called for the necessity to qualify teachers, students and parents in employing DEGs in the educational process, by offering teachers courses on how to employ these games educationally and technically. They also emphasized the need to support the employment of these games by the Ministries of Education, in order to provide teachers with sites for these paid games that serve the Arabic language.

The researcher believes that facing the challenges that stand in the way of employing and developing the employment of these games can only be through concerted Arab efforts in the field of education, exchanging of experiences and providing material and technological support to countries that need it.

Recommendation

- The study recommends adopting the employment of DEGs officially in public education institutions, and providing material and technical support to teachers, students and parents.

Allocating courses in universities to employ DEGs in the educational process to prepare teachers who are able to employ them in the future.

- Conducting qualifying workshops for teachers, students and parents on how to use DEGs in the teaching and learning process.
- Reconsidering educational policies regarding the use of DEGs, whether in face-to-face or e-learning.
- Benefiting from the experiences of developed countries in employing DEGs in the teaching and learning process.
- Concerted Arab efforts in the field of education, exchanging experiences, and providing material and technological support to countries that need them.
- Cooperating with telecommunications and internet companies to expand the range of services they provide at the state level to ensure internet access for every student and teacher.

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