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Educational Loss at Times of Crisis: The Role of Games in Students' Learning in Palestine and Iraq

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Abstract: This study examines the role of educational games in compensating for educational loss and their impact on students' motivation towards learning during crises in Palestine and Iraq. Additionally, the study considers the challenges facing the employment of this strategy and ways to overcome these challenges. By performing separate open semi-structured interviews with a group of 10 educators from university professors, teachers, and educational supervisors, the study used the qualitative descriptive approach which designs multiple case studies. The results showed the prominent role that educational games play in increasing students' motivation towards learning and compensating for educational loss through what they add to the fun and suspense in the learning process and how they shorten time and effort and help students to engage and cooperate in acquiring knowledge, skills, and values. The results also reveal common challenges that face the employment of educational games. These challenges are social, economic, technological, challenges related to school environment, and psychological challenges. The study shows the possibility of overcoming these challenges by providing funding sources, preparing plans to employ educational games, and developing teachers' capabilities to implement them in their teaching practices.



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1. Introduction

We are currently witnessing tremendous development in all fields. As a result of this development, many crises have emerged and affected the education sector. The educational process today faces many challenges that prevent it from achieving its goals, especially when crises, disasters, and wars cast a shadow on the education sector, including the COVID-19 pandemic, which has negatively affected the education sector and students' achievement and growth [1].

Armed conflicts stop education services where schools and teachers might be attacked and students might be displaced or resettled [2]. Such crises may have caused severe damage to the mental health of children as a result of delaying the provision of education for long periods; thus, many students may even lose their passion for education [3]. Crises such as natural disasters, epidemics, and wars can lead to educational loss, causing a significant loss in learning and the enrollment of students in schools in the medium term [4]. The issue of educational loss is one of the important issues that threatens the efficiency of the educational system [5,6]. In addition, it is considered a phenomenon that has exhausted the forces of education and hindered the achievement of the desired goals for which the various educational systems work [7]. The increase in educational loss, the widening gap between inputs and outputs, and the absence of student participation occur due to the closure of schools and resorting to distance learning [8]. The educational loss during the COVID-19 pandemic is defined as the decline that occurred in students' learning before

the pandemic and their learning during the pandemic [1]. It is the gap among the inputs, processes, and expected outputs of the educational process in the formal system [9].

Educational games constitute an effective educational medium for achieving educational goals related to the development of the learner's personality as they provide a climate in which academic achievement and entertainment mix and generate excitement and suspense, making the learner love learning [10]. Educational games can provide high-quality, inexpensive, flexible, and convenient educational services, which can increase interactions among learning materials, students, and teachers [11].

Educational games help students release physical and emotional tension [12]. This is what students need for learning in times of crisis. Yıldız [13] stresses that the use of educational games in the education process leads to an increase in the achievement of students with different learning styles. Play is also an effective way to form students' perspectives and helps them to think, develop vocabulary and self-expression, establish relationships, and learn cultural values [14]. They add that it also helps improve creativity and imagination and develop problem-solving skills. Fallata and Al-Sharif [15] believe that the attention-grabbing provided by educational games is more important than encouragement in the learning process, and it also helps to focus and fix information in the minds of students due to its attention-grabbing features while using them. The ability of educational games to motivate students is considered the most important factor in their success as games must adapt learning and obtain experiences based on the needs, abilities, and preferences of students [16].

Because play restores students to their activity and motivation to learn, it is an educational necessity that is linked to human development from a social, creative, emotional, historical, and cultural perspective [17]. Health crises and wars have greatly affected the education sector. As a result, Arab countries were unable to provide good quality, fair, and comprehensive education during the pandemic due to the enormity of the crisis and the lack of preparation for it [18]. Palestine and Iraq are in a worse situation than the rest of the Arab countries. The sectarian and civil wars in Iraq have complicated the educational scene. Palestine has suffered because of the Israeli occupation and its aggressive practices and targeting of education. Turbulent conditions in those mentioned countries have created a huge gap in students' skills and knowledge in these countries. Add to these conditions the COVID-19 pandemic, which has exacerbated the educational gap. Palestine and Iraq are suffering from double crises: the crisis of the COVID-19 pandemic and its repercussions on the education sector on the one hand, and wars and armed conflict and the damage it has inflicted on educational infrastructure on the other.

These crises have shown the need for educational systems that are oriented toward the future and can face challenges by paying attention to the rapid development of e-learning technologies and modern educational strategies. Self-motivation is one of the most important elements that motivate students to learn in face-to-face and virtual learning environments. This sheds light on the use of educational games, whether traditional or digital, to increase student motivation because of their characteristics that help students relieve the anxiety and tension resulting from difficult psychological conditions they experience in areas of conflict, wars, and crises of all kinds.

Educational games are one of the most important modern learning strategies that help students learn and compensate for the skills and knowledge they have lost as a result of crises. Educational games have been employed in the educational learning process in many countries of the world as an effective educational strategy, but unfortunately, they have not been employed systematically and thoughtfully to reduce educational loss and increase students' motivation towards learning in crises, especially in the Arab world. Based on the foregoing, in countries suffering from crises such as occupation, wars, conflicts, and epidemics, such as Palestine and Iraq, is it possible to use educational games in their educational systems to help increase students' motivation toward learning and thus compensate for what they have lost in terms of knowledge, skills, and values as a result of occupation and wars? The current study attempts to answer the following questions:

What is the role of educational games in students' learning?

What is the role of educational games in compensating for the educational loss that occurred because of crises such as conflicts, wars, and COVID-19 in Palestine and Iraq?

What is the effect of educational games on the motivation towards learning among students during crises in Palestine and Iraq?

What are the most important recommendations for developing the employment of educational games in the learning process during crises in Palestine and Iraq?

1.1. Literature Review

Teaching is one of the most important and challenging professions, and teachers play a vital role as the backbone of the educational process. It is their responsibility to help students understand and develop their skills and motivate them to learn, using various learning strategies and techniques [19]. Educational games are considered one of the important teaching strategies that motivate students because they provide both fun and a challenge [13]. Therefore, teachers must help students compensate for educational loss resulting from crises through their use of a variety of methods and strategies including educational games [20].

1.1.1. Educational Games

Although games are generally used for recreational purposes, they can also be used in educational activities because these games help students develop their creativity, decision-making ability, imagination, and thinking skills [21]. Childhood is closely related to play and games, so the game can be turned into educational support and a means to motivate students to learn. Indeed, philosophers and theorists such as Plato, Vygotsky, Piaget, and Rousseau expressed the positive role of play in the development and education of the child, so educational games are a modern tool for integrating play efficiently in the 21st century [22].

Many educational scientists believe that the use of educational games in education leads to an increase in students' motivation to learn and an increase in their academic achievement [23,24]. Yu et al. [11] argued that these games increase student participation and involvement in learning while Eltem and Berber [25] confirmed that games are one of the most important methods to attract students' attention and interest since they are suitable for all ages and levels of students and provide students with decision-making skills, assessment, problem-solving skills, negotiation, and innovation in a risk-free environment. Moreover, Clark et al. [26] explained that games are useful to repeat and reinforce what students have learned and enable them to enjoy and relax while using their cognitive skills. Giannakoulas and Xinogalos [27] likewise stated that educational games enable teachers to create an engaging and interactive context that motivates students to achieve learning goals and provides them with feedback.

Educational games are generally defined as targeted competitive educational activities conducted by the learner individually or collectively with specific procedures and laws regulating them that stimulate the learner's motivation and make him or her more positive and interactive in acquiring experiences and skills [28]. Similarly, Yildiz [13] noted that educational games are designed to achieve learning in a real entertainment environment. Educational games vary as they include puppet games, kinetic games, and intelligence games such as puzzles, problem-solving games, crossword puzzles, acting games, singing and dancing games, luck games, and cultural games such as competitions and expression cards [29]. The strategy of educational games is suitable for different educational contexts. Albayrak et al. [30] argued that educational games help individuals to learn to read and write numbers and help students with sustainable learning. Yesengazyevna et al. [31] added that educational games can be used in computer programming education as they facilitate learning, maintain its continuity, and increase motivation toward learning. Khadijah et al. [16] confirmed the ability of educational games to improve children's reading through the use of the (word tree) game. Genç-ersoy and Göl-dede [32] stated that educational

games can be used as an effective technique in developing students' ability to write and improve their views on it by using eight educational games. Sousa et al. [33] emphasized the need to use sustainable education methods not only in times of crisis, but to continue using these educational methods and techniques after crises. Albayrak et al. [30] argued that educational games help individuals to learn to read and write numbers and help students with sustainable learning. Educational games are classified according to the environment in which they are used: educational games are used in the face-to-face learning environment within the regular classroom and digital educational games are used in the virtual learning environment through various e-learning platforms. Educational games used in the face-to-face learning environment are a tool that improves students' self-expression skills and strengthens their connection to life through activities that require the use of their physical and mental skills, enhancing their knowledge and positively affecting their behaviour [34]. Yildiz [13] noted that well-designed educational games have many benefits, such as increasing active participation in the classroom; increasing motivation and attention span; reducing behavioural problems; facilitating learning and memory; developing cognitive, emotional, and motor skills; and increasing self-confidence, problem-solving skills, critical thinking, and creativity.

Digital educational games are those that are presented to students through interactive electronic platforms to integrate play with learning by increasing academic participation and motivation toward learning [35]. Technological progress has led to the development and use of digital educational games due to the lack of safe playing spaces in some areas and the digital interests of the new generation [36]. Jaber [37] defined digital educational games as a form of learning based on a set of planned steps and actions that the learner performs on the computer, smartphone, or tablet (iPad) by adhering to some rules to achieve a specific educational goal in an enjoyable, competitive framework.

Acquah and Katz [38] noted that educational games are effective when they have the following features: ease of use, challenge, rewards, reactions, control, independence, direction, and interaction. Educators and researchers have classified digital educational games into several categories. For instance, Chen et al. [39] classified them according to the goal of the game: adventure games, sports games, role-playing games, fighting games, driving games, and puzzle games. On the other hand, Salem [40] classified these games according to the number of players or participants in the game: single games and cooperative games.

Despite the importance that educational games have in developing students' cognitive, motor, and technical skills, they suffer from weak demand from teachers for several reasons. One reason is that such games often increase the teacher's burden because educational games need time and effort to prepare until the desired goal is achieved [21]. In addition, many teachers may lack the technical expertise that would enable them to use such games in their teaching practices [41]. However, Alkan and Mertol [21] argued that these challenges can be overcome by training teachers on the practices necessary to employ these games in the classroom via seminars and training courses.

1.1.2. Educational Loss

The issue of educational loss is one of the most important issues because of its role in threatening the efficiency of education and the security and stability of society, given the effects it has on the individual and society [5].

Akhdar [42] defined educational loss as not reaching the desired educational outcomes, either because students drop out or are unable to continue the educational process. Donnelly and Patrinos [43] defined it as a decline in students' knowledge and skills. Additionally, Betebenner and Wenning [44] described the phenomenon of educational loss as a lack of academic growth for students, which leads to a decline in their achievement.

Al-Anzi [45] noted that educational loss has two sides: the quantitative side is represented by the educational loss resulting from dropping out during the school year or from an academic stage, in addition to the students who failed to repeat the school year, and the

qualitative side is represented by the low level of students' achievement. Kurniawan and Budiyono [8] argued that the causes of educational loss are extended educational gaps or interruptions in education, while Al-Anzi [45] argued that educational loss occurs for reasons that may be related to the family, the school, wars, crises, or all of these. Al-Anzi [45] also emphasized in his study the vital role that the teacher plays in the educational process and his or her primary role in compensating for educational loss since it is the teacher's responsibility to improve student achievement and help students achieve their learning outcomes. Kashefpakdel et al. [20] argued that the teacher should help students to make up for their educational loss through their use of a range of remedial methods, the need to train them in the use of digital means, effective digital participation, and the use of online assessment tools. Here, the importance of the teacher's use of regular and digital educational games in teaching practices appears as a motivating strategy for students to learn and thus compensates for the educational loss.

1.1.3. Motivation to Learn

Motivation is a belief within the student that directs him or her to learning goals, motivates him or her to good behaviour, and enhances his or her learning and acquisition of knowledge [46]. Motivation is the main driver of the various activities of the individual, which they acquire through new experiences; that is, it is the potential energy that must be present for learning [47]. Fulton [48] defined motivation as the process by which an individual organizes his or her work depending on the degree of satisfaction of his or her needs. It has also been defined as a set of internal motives or reasons that explain the student's behaviour, orientation, and activities in the educational process [49]. For Escobar Fandiño et al. [50], it is a complex psychological process that is not easy and includes many aspects such as perception, behaviour, emotion, decision-making, and the biological aspects of the learner's personality.

There are two types of motivation, intrinsic and extrinsic. Intrinsic motivation is the desire that motivates the individual to enjoy, be satisfied, and engage in any activity he or she performs [51]. Fryer et al. [52] argued that intrinsic motivation encourages the individual to do something that arouses his or her curiosity and attracts him or her to reach a goal. On the other hand, extrinsic motivation was defined by Sun et al. [51] as the stimuli, such as grades and prizes, that are imposed on the individual in an attempt to motivate him or her to complete the activity. For Lin et al. [53], it is the desire to achieve the goal under the influence of external factors.

The student's motivation in the classroom is affected by several factors, some of which are related to the teaching and learning process and the strategies and techniques used therein, including those related to the lesson and the study material. Other factors are related to the method of assessment and to the educational environment and materials used in teaching [54]. Schwan [55] confirmed that students' motivation increases when they are allocated a certain level of independence in their learning and allowed to make choices that support their goals. It is thus useful for them to discover through the experiential learning of a subject.

Several studies have attached importance to the impact of educational games on students' motivation to learn, such as that by Hense and Mandl [56], which emphasized the need to design digital educational games in a way to motivate students to learn by meeting three basic psychological needs: competence, independence, and belonging. Moreover, Cornillie et al. [57] concluded that educational games can increase motivation towards learning and thus improve the learning process. Fryer et al. [52] also concluded that the success or failure of students in learning environments directly depends on motivation because motivation is one of the most important components of the student's learning process in the educational environment that affects what, how, and when the learner decides to learn. Similarly, Özhan, and Kocadere [58] noted that motivation has a positive impact on students' success and academic progress.

2. Materials and Methods

This study aims to identify the role of educational games in compensating for educational losses and its impact on motivating students to learn during the crises in Palestine and Iraq. A qualitative descriptive approach was used that involved the multiple case study method that fit the subject of the study. The data were collected using semi-structured interviews with open-ended questions related to the research questions [59]. The interviews were conducted in Arabic through the Zoom program, each of which lasted approximately 60–90 min. The interviewer asked clarifying questions, interviews were recorded and then transcribed, and interview drafts were handed over to participants for verification. Through this approach, it was possible to obtain an in-depth understanding of the studied problem [60]. The multiple case study method is primarily used in educational and social studies to discover the similarities and differences among cases [61] and to generalize some results that could not be obtained from a single case study [62].

2.1. Participants

This study included 10 educational specialists from universities and the Ministries of Education, educational supervisors, and teachers from Palestine and Iraq who work in universities and schools. They were allocated fictitious names. Participants were selected according to the following criteria: the willingness of the participants to engage in the interview, their agreement to record the interview, the ability of each participant to provide a clear picture of the education system, the educational strategies applied in their country, the availability of educational experience for the sample in the educational field, the experience in employing educational games in the learning process, and their knowledge of ways to compensate for educational loss. The characteristics of the participants are described in Table 1 below.

Table 1. Sample description.

Name	Country	Degree	Specialization
Naya	Palestine	PhD	Mathematics teaching methods
Noor	Palestine	Masters	Science teaching methods
Bisan	Palestine	Bachelors	Science teaching methods
Majed	Palestine	Masters	Contemporary Arabic studies
Raed	Palestine	PhD	Human development
Amer	Iraq	Masters	Teaching methods
Alaa	Iraq	Masters	Science teaching methods
Reham	Iraq	PhD	Science teaching methods
Maysa	Iraq	PhD	Special breeding
Majdi	Iraq	PhD	History

2.2. Data Analysis

The data that were obtained from the participants were subject to the analysis of multiple case studies, which allowed us to detect variances among cases and relationships that could be compared with each other and to generalize some results that could not be obtained from a single case study [62]. We used Ary et al.'s [63] model to analyse the data because that model consists of three stages, starting with organizing the data, then coding and minimizing it, and ending with interpreting the data.

2.3. Validity and Reliability

To ensure the reliability of the data, we used a triangulation process, during which the data were examined with the help of other researchers so that we could discuss and consider their interpretations as well. This cross-checking of interpretations helped us ascertain the different dimensions of the study. These dimensions were thoroughly investigated to ensure the reliability of the results, which eventually led to the formation of a set of interrelated groups [64].

The validity of the study analysis was confirmed by the method of analysis that ensured theoretical saturation. This theoretical saturation was due to the existence of subjects and categories, which ensured that no new category appeared. Class descriptions also ensured that each class was well developed in terms of its characteristics and dimensions [65]. Lincoln and Guba [66] noted that without reliability, there is no validity, so validation also guarantees reliability, which means that theoretical saturation also maintains the reliability of the study.

3. Results

The results represent the topics that emerged from the different readings of the opinions and perspectives of the interviewees as follows: the effect of educational games on student learning, the role of educational games in compensating for educational loss and its impact on motivation, and the challenges of employing educational games and ways to develop their employment.

3.1. The Effect of Educational Games on Students' Learning

Educational games play a prominent role in helping the teacher and student to overcome crises, as the participants from Palestine and Iraq unanimously agreed. Indeed, Naya, an interviewee from Palestine, said in this regard, *"As teachers or educational experts, we can observe that productive and effective learning does not reach the highest levels of consistency except when the student thinks he's playing"*. Majed from Palestine added, *"Play is not a strategy or methodology from my point of view; it is a life that students develop through physical, mental, social, and emotional play"*.

Additionally, Majdi from Iraq emphasized the role of educational games in learning, stating, *"Educational games have a great role in communicating the scientific material to students because they are close and harmonize with students' desires. They push students to study and entertain at the same time and help modify their behaviour in times of crisis"*.

The participants from the two countries also unanimously agreed that the educational games' strategies are suitable for teaching all subjects and at all educational levels. Specifically, Bisan from Palestine stated, *"I can employ the strategy of educational games to teach all school subjects, and it is suitable for all age groups, but it must be applied correctly"*. Alaa from Iraq confirmed, *"We can use the educational game's strategy with all school subjects, but on condition that we use the game that suits the academic subject"*. Furthermore, Reham from Iraq noted, *"Educational games are suitable for teaching all educational levels, even university students. Inside each of us is a small child who loves to play and discover"*.

The participants also viewed the strategy of the educational games as a student-centred, active learning one. Naya from Palestine emphasized this view, stating, *"When the student plays, he experiences the ideas that revolve in his mind, and transfers him from a recipient of knowledge to a discoverer and producer of it, whether by himself or in partnership with his colleagues through cooperative learning"*. Maysa from Iraq reinforced this idea, expressing, *"Educational games are an active learning strategy because they are teamwork in which there is a cooperation and rules of play, and the student is the one who plays and learns by himself, as it makes the student the focus and centre of the learning process"*.

The ability of the two countries to deal with educational crises resulting from political and economic conditions differed, with Palestine being able to maintain a certain level of education for its children despite the occupation and the obstacles imposed on education. In this regard, Raed from Palestine noted, *"Palestine is under occupation, but we have a peculiarity that the percentage of education about us is very high and the percentage of mothers' education at home is also high. Therefore, school cooperation with parents' cooperation, with the presence of educational policy and decisions, was able to move quickly towards distance learning, which reduced the problems that exist, but this does not negate it at all"*. On the other hand, the high dropout rate from schools, poor electricity and internet access, and students' reluctance to learn had a significant impact on the continuity of education during the crises in Iraq. Maysa from Iraq pointed out, *"There was no tendency for students to learn remotely due to the lack of smart*

devices and poor internet, and the educational level in Iraq fell during the period of wars. There [was] no school attendance in the conflict areas for about 3 years. During the conflict, there was no type of learning where there is no Internet; they were isolated from the world”.

3.2. The Role of Educational Games in Compensating for Educational Loss and Its Impact on Motivation

Focusing on the effect of educational games on students’ motivation towards learning, the participants considered them a prerequisite for learning to occur. They believed that they break the routine of classes, stimulate attention and focus among students, increase students’ activity to the maximum extent in acquiring knowledge, and stimulate the exchange of knowledge among students; they also work to release repressed feelings and create students’ love for learning. All these benefits have a great impact on increasing motivation towards learning. In this regard, Bisan from Palestine argued, *“Educational games motivate students towards face-to-face and e-learning because they break the routine, However, every educational situation has its appropriate educational games. Sometimes it is necessary to employ collective games because they are the basis for playing, not only focusing on the knowledge but rather the skills, values, and attitudes that the student acquires through learning through play”*. Raed from Palestine confirmed that motivation is a prerequisite for learning to occur, saying, *“There are two prerequisites for learning to occur: willingness to learn and motivation”*. While Alaa from Iraq noted, *“Educational games have a very significant impact on motivation because they bring the image and concept closer to students and increase their attention to the educational situation”*.

As for the use of digital educational games, Reham from Iraq argued that they benefit students in numerous ways, stating, *“In my view, digital educational games stimulate focus, increase attention, help meditation and thinking, increase academic achievement and the desire to obtain information, . . . keep boredom away from the student, and [help] him to compete with his colleagues, which motivates him to improve his performance”*.

The issue of educational loss is one of the important issues that threatens the efficiency of educational systems [5], which the teacher must work to solve using various educational strategies, digital means, and effective digital participation [20]. Therefore, the participants unanimously agreed that whenever the students’ motivation and enthusiasm for learning increased, they would be ready to search for information and acquire it through playing that simultaneously combines fun and learning. Nour from Palestine defined educational loss as *“a cognitive, skill, social, and behavioural loss that negatively affects the subsequent learning of students”*. Similarly, Maysa from Iraq defined it as *“the sum of the skills and knowledge that a student must possess at a certain stage, but for some reason, he was not able to possess them. It is a knowledge gap between what must be learned and what has been learned”*.

The participants agreed that it is possible to compensate for educational loss by using educational games that accelerate the learning process, shorten time and effort, and achieve more than one educational goal using one educational game, in addition to the skills and values that can be taught along with the information acquired through educational games. To this point, Abbas from Iraq noted, *“Educational games shorten the time, and through them, it is possible to teach and review more than one concept”*. Majdi from Iraq confirmed this observation, stating, *“From my point of view, that is, educational games work to compensate for what students lost by shortening the time and adding an element of fun that increases students’ enthusiasm for learning, and educational games can simplify information and present it in an interesting way, especially digital educational games because they are the closest to students in the age of technology”*.

Naya from Palestine also agreed: *“Educational games enable the student to work and practice learning by himself or in partnership with his peers, which increases his motivation to learn, deepens and enhances his knowledge, and thus contributes to bridging the knowledge gap and reducing educational loss”*. To reinforce this idea, Raed from Palestine stated, *“I believe that educational games reduce the time required for learning, increase students’ involvement, enhance positive values and behaviours, and achieve the*

intended educational goals and outcomes, provided that there is good planning and good use of the educational games”.

3.3. The Challenges of Employing Educational Games and Ways to Develop Their Employment

Employing educational games in developing countries such as Palestine and Iraq, which suffer from many crises that place them in difficult economic, social, and political situations, encounters many challenges that the participants in the study outlined, including economic and financial challenges, technological challenges, challenges related to the school environment, and others related to the extent of readiness and efficiency of teachers. An additional challenge is that of the negative view parents have towards the use of educational games in the teaching process, especially in Iraq. Bisan from Palestine summarized these issues, outlining, *“These challenges are summarized in the technological and material infrastructure, and the lack of them for all teachers in the same quality; schools are not prepared, and teachers need training that qualifies them to deal with e-learning resources in terms of design and application in proportion to educational situations. Also, the weakness of the internet and the poor financial condition of the teacher prevent the optimal use of this strategy”*. Nour from Palestine confirmed this observation: *“The weakness of the internet, the lack of smart devices and knowledge in dealing with digital educational games, the financial problems in the country, and the bad psychological situation of students as a result of the occupation practices against students and teachers”*. Reham from Iraq summarized these problems as follows: *“the lack of infrastructure necessary to use digital educational games, the weakness of the internet, its lack of it for some students and teachers, the lack of smart devices, the increasing number of students in the classroom, and the difficult economic situation of the Iraqi teacher”*.

The participants believed that it is possible to try to overcome these challenges by providing the funding necessary to employ educational games, preparing plans to effectively employ them in the teaching process, strengthening the infrastructure in schools, developing electronic educational platforms, activating digital educational games sites for teachers, and developing curricula in line with the use of educational games, therein raising the capabilities of educational staff, and developing their capabilities in designing and employing educational games. Such a development could occur through a partnership with universities to enable students in teacher preparation programs to understand and apply the strategy of educational games, especially digital ones. In-service teachers should also be trained through seminars and training courses.

The participants also offered additional suggestions for overcoming these issues, with Nour from Palestine stating, *“I suggest developing the technological infrastructure necessary for education, developing the skills of teachers necessary to use educational games, and improving the teacher’s economic situation. I also recommend the Ministry of Education hold training workshops for teachers on the use of educational games, how to design them under the topic of the lesson, and the age group of students, and designing educational games that develop motivation and help gain knowledge and rid students of stress and anxiety, especially in emergencies, and I recommend good planning to systematically employ educational games in the educational process”*. Amer from Iraq added, *“I recommend improving teachers’ salaries, enrolling teachers in courses on modern educational strategies, including educational games, and spreading the culture of educational games among school principals and parents and that they are not a waste of time, and I recommend the Ministry [of Education] to keep pace with modernity and develop teachers’ technological capabilities”*. Finally, Reham from Iraq mentioned, *“I recommend researching the employment of educational games and providing free digital educational games sites for teachers that can be used and adapted for different academic subjects”*.

4. Discussion

Educational games are being suggested as a strategy that enriches students’ learning. This study aimed to examine the role of educational games in compensating educational loss and their impact on students’ motivation towards learning during crises in Palestine and

Iraq. The research results indicated that educational games contributed to compensating for educational loss through motivating students to learn, speeding up the learning process, and achieving educational goals. Below, we discuss the role of educational games in students' learning considering compensating for educational loss, motivating students to learn, and the challenges of employing educational games and ways to develop their employment.

The participants from Palestine and Iraq have reciprocally agreed that the educational games do play a vital role in helping teachers and learners succeed in dealing with the crises. The results show a significant agreement with those of other studies, including [13,26,34]. The participants from the two countries have concertedly agreed that the educational games' strategies suit and benefit teaching all subjects and at all educational levels. This result greatly asserts what Eltem and Berber [25] found in their study. The participants also pointed out that the strategy of the educational games is student-centric, reflecting active learning. This view correlates with the results of former studies [11,25,27].

The political and economic conditions have affected educational systems differently in Palestine and Iraq in regard to their abilities to deal with the crises. Palestine has showed an increased ability to provide a certain level of education for its children, challenging the occupation and its consequences on education. Meanwhile, some factors such as the high dropout percentage from schools, poor electricity, inconsistent internet access, and students' lack of motivation to learn had a remarkable impact on the continuity of education during the crises in Iraq.

Creating attractive and appealing learning environment for students and increasing considerable types of achievement are some of educational games' advantages [13]. They trigger and maximize students' motivation by presenting skills, information, or values in an entertaining and acceptable form in a way that matches with their dispositions and interests. The issue of educational loss remains one of the most critical issues that challenge the effectiveness of educational systems [5]. The teacher needs to face such challenges by implementing numerous and varied educational strategies, digital means, and sufficient digital participation [20]. Hence, the participants have collectively agreed that the increase in students' motivation and enthusiasm for learning would be reflected on their readiness to search for information and acquire knowledge through playing. They believe that playing jointly combines fun and learning. The participants believe that it is possible to recompense for educational loss by adopting educational games that expedite the learning process, save time and effort, and help accomplish more than one educational goal through using single educational game. Besides this, educational games can be implemented to teach skills and insert values simultaneously with teaching information. The participants' opinions have showed great consistency with previous studies' results [13,34].

The implementation of educational games in developing countries such as Palestine and Iraq, which suffer from many crises that put them in critical economic, social, and political situations, faces many challenges that the participants in the study have addressed. Such challenges include economic and financial challenges, technological challenges, challenges related to the school environment, and others related to teachers' levels of readiness and efficiency. These challenges correlate with the findings of Swier and Peterson [41]. The negative attitudes that parents have toward the use of educational games in the teaching process, especially in Iraq, have formed an additional challenge in this regard.

The participants have pointed out some suggested solutions through which the challenges might be subdued. Such solutions include providing the funding needed for the employment of educational games, preparing plans for the efficient employment of educational games in the teaching process, and improving infrastructure in schools. Furthermore, the development of electronic educational platforms, the activation of digital educational games sites for teachers, and the development of curricula in line with the use of educational games therein would absolutely mitigate the challenges resulted from the crises. Providing educational staff with professional development, aiming to develop their capabilities in designing and employing educational games, can lead to a significant improvement in the teaching process. Such a development could be accomplished through a partnership with

universities with the target of enabling students in Teacher Preparation Programs to absorb and apply the strategy of educational games, especially digital ones. Trainings might be conducted via seminars and training courses. This idea is compatible with the results of Alkan and Mertol's [21] previous study.

5. Conclusions and Recommendations

In countries where there is no security and peace, as is the case in the study sample countries, the students of these countries require educational strategies such as the strategy of educational games that help students overcome the psychological crises resulting from their exposure to the ravages of war and occupation and the destruction it left behind in their country.

The results reveal that the participants from the two countries agree on the prominent role played by educational games in compensating educational loss. Educational games are considered a facilitating factor for learning by making the educational process entertaining and enjoyable for students inside the classroom, or during virtual classes in an e-learning environment. Traditional and digital educational games play a prominent role in helping to make up for what students missed in terms of knowledge, skills, values, and attitudes. This can be achieved through the educational games' power of increasing students' motivation toward learning, accelerating the learning process, achieving learning goals with minimal effort, in addition to allowing students to acquire socially acceptable values and behaviors. This is due to the fact that educational games, whether traditional or digital, are cooperative games in which all students participate. These games clarify concepts in a fun and attractive atmosphere for students, as well as increase their focus and attention and reduce their distraction during class. Knowledge is presented to them in a simplified manner because it is graded on its level of difficulty, thus reducing the time and effort required for learning and achieving educational goals.

However, despite this agreement on the importance of educational games in student learning in crises, the participants in the study reported the difficulty of applying this strategy in their schools and with their students due to a lack of appropriate conditions for its use in terms of a physical and psychological environment, the availability of technological requirements, and the ability of teachers to use them optimally, as the games required qualifying and preparing before their use, so that they can use them in an effective way to achieve learning goals in crises.

The results of the study show common challenges facing the employment of educational games in the educational process in Palestine and Iraq due to similar political and economic conditions. The participants pointed out social challenges that embody the deterioration of the teacher's station, especially in Iraq. They also summarized the financial challenges in the poor financial condition of the teacher and the learner, the inability to provide the smart devices, tools, and materials necessary for learning in crises, weak internet networks, and continuous power outages. To them, technological challenges are represented by weak technological infrastructure and a lack of technological expertise among many teachers. They also refer to challenges related to the school environment, including the lack of readiness in schools to use educational games, especially digital ones, and the overcrowding of classrooms with students. They find that other challenges are related to the extent of teachers' and schools' readiness, willingness, and efficiency to employ educational games, such as teachers' poor skills in dealing with educational games, producing them, designing them, and adapting them for different subjects. In addition, some challenges are, according to the participants, related to parents' negative attitudes towards the use of educational games in the teaching process, and the teacher's lack of conviction of the feasibility of using this strategy. The participants have highlighted the psychological challenges which resulted from the practices of the occupation against students and teachers alike in Palestine. They have also emphasized the psychological effects that the war in conflict zones in Iraq have on students and their motivation towards learning as a result of this.

Participants from the two countries unanimously agree that it is possible to overcome these challenges through several means. Such means include providing the necessary financing sources for employing educational games, preparing plans to employ them effectively in the teaching process, strengthening the infrastructure in schools, developing e-learning platforms, activating digital educational games sites for teachers, and developing curricula in line with the use of educational games in them. They also include raising the capabilities of educational staff and developing their capabilities in designing and employing educational games through a partnership with universities. Training teachers to use educational games in the classroom through seminars and training courses and educating parents regarding the importance of educational games in the educational process, especially in times of crisis, would also be of a great help to overcome the previously mentioned challenges.

In conclusion, it is well known that the strategy of educational games helps in the occurrence of effective learning among students, but in countries that suffer from occupation and wars, such as Palestine and Iraq, it is difficult to implement this strategy because of the challenges it faces that stand in the way of its implementation and the achievement of its goals in helping learning in environments that lack the requirements for safe living and the lack of necessary infrastructure for learning and the use of educational games in it.

Decision makers and concerned parties are recommended to:

1. Believe in the need to adopt educational games, whether traditional or digital educational games, in the educational process.
2. Work to spread the culture of educational games, introduce the characteristics of educational games that help achieve effective learning in an atmosphere of fun and motivation, and open a constructive dialogue between the family and the school in this field.
3. Encourage the use of programs that follow international standards that work to raise the professional growth of the teacher during the preparation period and work experience. Teachers should be trained to use the educational games of both types, traditional and digital, to make their years of service rich in experience.

6. Limitations

The limitations of the study are mainly related to the large size of the study population because it includes two Arab countries, which affects the quality of communication with the study sample. In addition, some participants have showed a reluctance to participate in the research due to the security conditions in their countries. The communication with the participants in Iraq has been difficult due to the difficult conditions that they live in, including power outages and poor internet networks. The coordination of the appropriate time to communicate with the participants was difficult, especially because of the limited hours in which electricity is available. This has forced the researchers to conduct some interviews in several stages due to the interruption of the internet. There is also a need for more research to study the effect of educational games on compensating for educational loss and motivation towards learning, as more teachers from different disciplines and degrees may participate in greater numbers and from more societies in order to generalize the results of the study.

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