An-Najah National University

Faculty of Graduate Studies

THE ROLE OF EDUCATIONAL GAMES IN COMPENSATING EDUCATIONAL LOSS AND ITS IMPACT ON STUDENTS' MOTIVATION TOWARDS FACE-TO-FACE AND E-LEARNING IN CRISES

By

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This Dissertation is submitted in Partial Fulfillment of the Requirements for the Degree of PhD in Learning and Education, Faculty of Graduate Studies, An-Najah National University, Nablus, Palestine.

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Dedication

I dedicate this work to the soul that inhabits mine, to the companion of my path, to the one who has helped and supported me, to my beloved husband.

I dedicate it to whom I carry his name with pride, my dear father. May God prolong his life!

I dedicate it to my angel in life, the meaning of love, tenderness, and devotion whose supplication has been the secret of my success, to my dear mother.

I dedicate it to my support, my strength, and my sanctuary, to my dear brothers Imad and Moath.

I dedicate it to my dear sisters: Amal, Asma, Rawan, Shaima, Sukyna, Ikhlas, Khawla and Mai.

I dedicate it to the pure and kind hearts, to the spring of my life, my children: Nadin, Lamis, Lama, Ahmed, Muhammad and Omar. May God protect them!

I dedicate it to my dear friends: Amal and Dua

I dedicate it to my friends and loved ones wherever they are.

I dedicate it to everyone who has a favor on me.

To all of them, I dedicate the fruit of this humble effort.

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Declaration

I, the undersigned, declare that I submitted the thesis entitled:

THE ROLE OF EDUCATIONAL GAMES IN COMPENSATING EDUCATIONAL LOSS AND ITS IMPACT ON STUDENTS' MOTIVATION TOWARDS FACE-TO-FACE AND E-LEARNING IN CRISES

I declare that the work provided in this Dissertation, unless otherwise referenced, is the researcher's own work, and has not been submitted elsewhere for any other degree or qualification.

Student's Name _____ كريمة عبدالكريم علي

Signature _____ كريمة علي

Date _____ 5/7/2023

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THE ROLE OF EDUCATIONAL GAMES IN COMPENSATING EDUCATIONAL LOSS AND ITS IMPACT ON STUDENTS' MOTIVATION TOWARDS FACE-TO-FACE AND E-LEARNING IN CRISES

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Abstract

The need to conduct this study emerges to shed light on the strategy of educational games as a strategy that helps students to learn in crises, compensate for what they missed in terms of knowledge, skills, and values, and to increase their motivation towards learning. This study aims to investigate the role of educational games in compensating for educational loss and its impact on students' motivation towards face-to-face and e-learning during crises in four Arab countries: Palestine, Syria, Iraq, and Yemen. The study adopts the mixed approach by using the qualitative descriptive approach which designs multiple case studies using open, semi-structured interviews with (40) educational experts. It also adopts the quantitative descriptive approach, using a questionnaire answered by (420) teachers from the four countries. The results of the study show the prominent role played by educational games in compensating for educational loss and increasing students' motivation toward learning in crises despite the difficulty of applying them in countries where there is no security. It concludes that there is a strong positive correlation between the use of educational games, compensating for educational loss, and increasing students' motivation towards learning in crises. The results also show that Palestinian and Iraqi teachers use educational games more than Syrian and Yemeni teachers. It also reveals that there are no differences in the average use of educational games between male and female teachers, or between teachers with scientific or literary specializations. Meanwhile, there are statistically significant differences due to the variables: school type, work in the field of compensating educational loss, educational qualification, professional experience, and the educational stage taught by the teacher. 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 to overcome these challenges by providing funding sources, preparing plans to employ educational games, and developing teachers' capabilities to implement them in their teaching practices. The study concludes that educational games play an important role in compensating for educational loss and increasing students' motivation towards learning in crises. The study recommends adopting educational games in the educational process.

Keywords: educational games, educational loss, motivation, e-learning, education in crises.

Chapter One

Introduction and context of the study

This chapter seeks to provide the main basis for research that examines the role of educational games in compensating for educational loss among students in countries suffering from crises. Therefore, this chapter contains an introduction about education in crises and the educational loss resulting from these crises. It tackles the educational games and their impact on students' motivation to learn and compensate for what students missed in terms of knowledge and skills. It highlights the gap that imposes the need to use educational games in the educational process in countries suffering from wars and conflicts in addition to corona pandemic. Moreover, this chapter reviews relevant previous literature that provides the theoretical framework for the study as well as previous related studies. The chapter also presents the definition of the basic terms in the research, the research questions, hypotheses, objectives, importance, and limits of the study,

1.1 Introduction

Education is one of the most important pillars of development that affects all fields. It is the basis for the growth and progress of any society, and it is considered as the driving force that builds civilizations. Education is one of the most important factors that greatly affect the lives of individuals, as it plays a pivotal role in the development of human resources. Apparently, the investment is made in education to achieve better returns in the future (Al-Hafashi & Al-Kassi, 2022).

The current era is 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 Corona pandemic, which has negatively affected the education sector and the students' achievement and growth (Tirado, 2021). During the past two years, education systems in the world have witnessed an unprecedented disruption due to this pandemic, which highlighted many problems in global educational systems (Al-Hafashi & Al-Kassi, 2022). As a result of the Corona pandemic, children were the most affected by the pandemic, as school closures affected more than (1.6) billion students around the

world; leading to large and uneven losses in education (UNICEF, 2022a). Some Arab countries, such as Palestine, Syria, Iraq, and Yemen, are suffering from the repercussions of the wars and the Corona pandemic that have overshadowed their educational systems, as is the case in many countries of the world. Armed conflicts stop education services where schools and teachers might be attacked and students might be displaced or resettled (Baytiyeh, 2019). Such crises may have severe damage to the mental health of children as a result of delaying the provision of education for long periods, and thus many students may have even lost their passion for education (Sharifiana & Kennedy, 2019).

These crises have led to what is known as the problem of educational loss, where the educational system loses its balance, and therefore, its inputs become much more significant than its outputs (Justino, 2016). Crises such as natural disasters, epidemics, and wars can lead to educational loss, causing a significant loss in learning and enrollment of students in schools in the medium term (Zhdanov et al., 2022). The issue of educational loss is one of the important issues that threaten the efficiency of the educational system (Mashi & Al-Otaibi, 2021; Rashidi, 2022). 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 (Al-Hafashi & Al-Kassi, 2022). It causes a lack of learning outcomes (Mohammad, 2020). 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 (Kurniawan & Budiyono, 2021). The educational loss during the Corona pandemic is defined as the decline that occurred in students' learning before the pandemic and their learning during the pandemic (Tirado, 2021). It is also considered as an educational loss that those in charge of the educational process seek to solve by various means (Saeed, 2021). It is the gap among the inputs, processes, and expected outputs of the educational process in the formal system (Affouneh & Salha, 2022). (Kurniawan & Budiyono, 2021), define it as the deterioration in students' knowledge and skills. This loss occurs when students do not progress academically at the same rate compared to previous years.

As the education sector is one of the sectors most affected by disasters and crises, the quality of education that is provided to students is still a source of research and interest

for workers in the educational field (Al-Daghimi, 2021). According to (Matviichuk et al., 2022), education systems today seek constructive learning that aims to create a generation that is keen on knowledge, asks questions, and seeks action. Being the only means to organize the educational process, they believe that the educational Internet technologies used during the Corona pandemic and times of war have become necessary and indispensable tools. Thus, they find that the transformation of e-learning in crises has become a mandatory necessity. In Özüdoğru study (2022), Modern technologies and strategies play an important role in the transition to constructive education, specifically when it comes to using e-learning that provides equal opportunities in education. The study finds that it creates opportunities for learning everywhere. It assures that through using information and communication technologies, e-learning allows students to control their learning according to their capabilities and skills. Abu Showayb (2020) believes that E-learning is one of the modern means of education, which contributes to the development and strengthening of the educational process in various ways. To him, it uses modern technologies, such as storage methods and Internet sites that contain various information, through computers of all kinds and through electronic programs prepared by specialists in the Ministry of Education. Özüdoğru (2022) defines e-learning as education activities through electronic media where knowledge and skills are transferred using electronic technologies. Hamdan (2021) believes that e-learning is universal due to its provision of free learning environment for the learner. He delineates that it also provides an interactive environment in which the learner depends on his effort. He also finds that it is characterized by complementarity, as the elements of e-learning are integrated to achieve its goals. He assures that the readiness for e-learning is a prerequisite for its success. From the point of view of (Majid & Lakshmi, 2022), this readiness includes technological readiness, psychological readiness, content readiness, and the readiness of the necessary infrastructure for education.

Educational games constitute an effective educational medium for achieving the 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 (Faisal, 2017). Educational games are important tools that can be used in the educational process because they enable students to communicate with each other positively and help them acquire skills and abilities to understand their lessons (Karaman et al., 2022). Educational games are

among the modern strategies that help move from teacher-centered learning to active learner-centered learning (Sabirli & Coklar, 2020). Playing games is one of the vital elements in the learning process, as it is a basic need for growth, learning, and stimulating the brain to think (Al-Haqbani, 2016). Since playing games is an indispensable necessity for growth, its employment in the educational process has become necessary (Al-Gabri, 2015). Educational games can provide high-quality, inexpensive, flexible, and convenient educational services, which can increase interactions among learning materials, students, and teachers (Yu et al., 2021).

Educational games help students release physical and emotional tension (Hariri, 2014). This is what students need for learning in times of crisis. Özhan and Kocadere (2020) state that to keep students motivated, their attention must be attracted and maintained in the learning environment, which must be entertaining and valuable to the student, meeting his needs. They believe that the students must have confidence that they will complete the tasks successfully and feel satisfied as a result of their success in the task. (Özhan & Kocadere, 2020). In this regard, Yıldız (2021) 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. It also helps improve creativity and imagination and develop problem-solving skills (Karaman et al., 2022). Fallata and Al-Sharif (2022) 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 feature while using it. 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. The educational games must attract their curiosity and provide them with knowledge through an enjoyable experience (Khadijah et al., 2022). However, Stewart (2013) believes that learning is more effective when the learning environment is fun and suitable for different students' learning styles where these games are characterized by arousing curiosity, adventure, and imagination among students, role-playing, challenge, problem-solving, discovery, experimentation, and creativity. Many studies have indicated the promising effects and benefits of play-based learning in various subjects (Xie et al., 2021).

Persico et al. (2019) argue that educational games can be used in many subjects such as: teaching languages, mathematics, science, and other subjects, to acquire problem-solving skills, and critical thinking, and to increase students' motivation toward learning. Motivation is an important pillar of the educational process and a prerequisite for learning to occur, as it prompts the learner to pay attention to the elements of the educational situation and to respond with self-activity, purposefulness, and organization (Elgendy, 2022). Radef et al. (2022) stresses that motivation is one of the most important prerequisites for learning. Accordingly, educational games are techniques that attract the attention of students of all ages, from pre-school to the postgraduate level, and facilitate learning by making the teaching process entertaining and enjoyable for students inside classrooms or through virtual classrooms in an e-learning environment (Somen & Metin Goksu, 2020).

Based on the foregoing, is it possible in countries suffering from crises such as occupation, wars, conflicts, and epidemics such as Palestine, Syria, Iraq, and Yemen to use educational games in their educational systems to help increase students' motivation toward learning? Can this, as a result, help to compensate for what students have lost in terms of knowledge, skills, and values as a result of occupation and wars?

1.2 Literature Review

1.2.1 Education in Crises

Today, the world is suffering from complex crises that harm people's lives and threaten property, markets, political professions, and public services. This may include climate change, terrorism, and social and economic challenges such as poverty, inequality, and health problems (Ramia, 2021). Ramia adds (2021) that crises can be classified into three categories: unforeseen crises such as a terrorist attack, which is an unexpected and rapidly evolving event, and chronic crisis that lasts for a long time without a clear solution such as poverty and inequality, and finally a creeping crisis that accumulates over a long period that may extend for decades as climate change.

Various crises affect the education sector, which leads to stopping education, postponing it, or failing to achieve its goals; which apparently causes delays in the overall development of society (Al-Zanfali & Al-Shami, 2020). Baytiyeh (2019) argues that armed conflicts can stop education services where schools and teachers are attacked

and students are displaced or resettled, which leads to severe damage resulting from delays in the provision of education for long periods, and thus students lose months of study, as many of them lose interest in education and drop out of schools. Health disasters such as the Corona pandemic also have an impact on education since, they have imposed a new form of unplanned teaching and learning, which has been represented in distance education via the Internet to ensure the continuity of the educational process and not to disrupt it (Serrano-Díaz et al., 2022).

A crisis, as defined by Al-Yousifi (2015), is an exceptional emergency that includes the element of surprise, unexpected occurrence, and the threat of regime collapse, which requires quick decisions to be taken in a short period. Ramia (2021) defines it as unusual events or episodes that make societies reconsider their prevailing assumptions and ways of working, as the crisis destroys the peace and systems of societies. However, Al- Mogy (2021) defines the educational crisis as a set of interrelated procedures, activities, and educational experiences that a student receives and participates in after suffering a crisis resulting from disputes, conflicts, or natural and health disasters in order to achieve recovery from the crisis. The crisis appears in the educational institution as a result of the accumulation of a group of surrounding external influences, or from the occurrence of a defect in the internal educational systems, and therefore, the educational system becomes unable to absorb the crisis and deal with it (Al-Eisa & Al-Alfi, 2022). These crises are characterized by surprise, threat, lack of time, and lack of information to confront them, all of which require those in charge of the educational process to be careful and cautious before the crisis occurs, and also require high capabilities and skills to successfully confront the crisis and limit its impact (Al-Eisa & Al-Alfi, 2022).

The disruption of education resulting from crises exposes students to the risk of child labor, early marriage, exploitation, or recruitment into the armed forces (Baytiyeh, 2019). As a result of crises such as the Corona crisis, many countries decided to switch to distance e-learning, which involves a set of challenges, including rethinking the infrastructure of schools and universities, the educational resources that are suitable for distance learning, building teachers' capacities, and preparing students for this transformation (Affouneh & Burgos, 2021). Arab countries suffer during the transition to distance education in light of crises, especially the Corona pandemic crisis, as

Belmokaddem and Djelti, (2020) argue that distance education imposed by the crises in Algeria suffers from poor communications' infrastructure, such as weak internet flow for most regions, and frequent electricity outages, in addition to the lack of the ability of all students to own smart devices to communicate through them, in addition to weak skills in using information technology. (Al- Mogy, 2021) asserts that education in crises is of great importance due to its provision of safe and organized spaces for learning and play, fair opportunities for learning, and psychological and social protection through play and through the practice of cultural, sports, and recreational activities. Al-Zanfali and Al-Shami, (2020) add that education alleviates the psychological and social effects of crises by providing a sense of stability and normalcy.

1.2.1.1 Palestinian Education in Crises

The destruction of Palestinian education has been a direct goal of the Israeli occupation, as there was a continuous aggressive planned policy against education, especially in the first periods of the occupation, and the second Intifada (Affouneh, 2007).

Education in Palestine suffers from the presence of the Israeli occupation, which practices various types of systematic violence and pressure on the Palestinian educational system through policies of closure, roadblocks, and blockades. This absolutely impedes the safe access of students and teachers to their schools in many areas (Palestinian Ministry of Education, 2017). In a report issued by UNICEF (2023), it is stated that about half a million Palestinian children need humanitarian aid to access quality education as a result of the occupation's attacks in the West Bank, including East Jerusalem. The report reveals that the blockade imposed on Gaza, and the restrictions on access to schools have caused Palestinian children to suffer distress, fear, and intimidation when they go to their schools, being often forced to pass through checkpoints or walk through settlements.

This is also added to the closing and demolition of schools and education centers, and to the prevention of building schools in areas classified (C). In the city of Jerusalem, the Israeli occupation seeks to distort the Palestinian curricula (Palestinian Ministry of Education, 2017). According to a report issued by Addameer for Support and Human Rights Association (2023) on Israeli arrests of Palestinian school students, the number of children detained in occupation prisons for the year 2022 reached (882) children. It

reports that the occupation forces have used all types of weapons, including live bullets and sniffer dogs, in addition to the intimidation of the detainees.

Therefore, the Corona pandemic crisis is considered a temporary crisis for the Palestinian people, who have been suffering from the crisis of the Israeli occupation for decades (Abu Showayb, 2020). Abu Showayb believes that the impact of the pandemic has affected Palestinian educational institutions, as this crisis caused paralysis in private and public schools, universities, and kindergartens, urging the Palestinian government to prepare comprehensive contingency plans despite the limited capabilities and resources.

The Palestinian Ministry of Education has adopted the e-learning system and worked on developing it continuously to compensate for the interruption of students' learning in light of the pandemic (Qareeb, 2022). Jareed & Atallah)2020) clarify that the Palestinian Ministry of Education has activated the technology of distance education during the pandemic, launching an "online secondary" project that targets high school students in cooperation with TV channels and satellite channels. They indicate that the education directorates in different regions have also activated YouTube channels and electronic platforms working to publish educational activities and lessons.

The transformation of Palestinian e-learning resulting from the Corona pandemic, from Qareeb's point of view (2022), suffers from technical problems such as power outages and internet outages or weaknesses. Qareeb adds that it also suffers from the lack of students or teachers owning computers in addition to the difficulties in application such as the use of Learning Management Systems like Moodle which has been used by universities and Student evaluation mechanisms. He also finds that the transformation to e-learning in Palestine stumbles on difficulties in following up on e-learning activities, poor student interaction, and house chaos that have been so challenging. However, most of these difficulties were overcome with the help of technical support supervisors in Palestinian universities. Olwan (2022) also argues that Palestinian families were keen to educate their children in all circumstances despite the harshness of life and the poor economic level of the family, which made the Palestinian society in general a society free of illiteracy.

1.2.1.2 Palestinian Educational System

The Ministry of Education tended to build a new educational system that meets Palestinian national needs and benefits from international experiences to develop it. The Palestinian Ministry of Education is the official institution responsible for managing and developing the educational process and supervising it either directly or indirectly (Palestinian Ministry of Education, 2017). The Ministry owns a clear vision which necessitates "A Palestinian society that possesses values, science, culture, and technology to produce knowledge and employ it in liberation and development" (Palestinian Ministry of Education, 2022 a).

The number of schools in the Palestinian territories has reached (3142), and these schools are distributed according to the authorities supervising them as follows: (2307) public schools, (374) schools affiliated to the United Nations Relief and Works Agency for Palestinian refugees, and (461) private schools. The number of students in Palestine has reached (1,358,410) students. The number of Palestinian teachers has mounted to (73377). As for kindergartens, there were (2167) kindergartens. The number of children in kindergartens has reached (160,737) children (Palestinian Ministry of education, 2022 b) As for the educational stages in Palestinian education, they are as follows:

1. Pre-school education (kindergarten): This stage aims to prepare the child for the physical, mental, psychological, and social aspects, before joining the basic educational stage, which is a non-compulsory stage. This stage extends from the age of three years and seven months, until the age of entering the first grade. The Palestinian Ministry of Education supervises this sector indirectly by granting licenses to open private kindergartens according to special specifications and standards. However, it has recently directed its policies towards integrating kindergartens within Formal education (Palestinian Ministry of Education, 2017).
2. School education stage: This stage includes basic education and secondary education.
    - Basic Education: This stage starts from the entry of the student into the first grade of basic education, until the end of the ninth grade, and is divided into two parts:
    - The minimum basic stage: This stage extends from the first basic grade until the end of the fourth grade, where learning at this stage is a basic basis for the development and sound education of students from the psychological, physical,

and mental aspects. It focuses on mastering the basic skills in reading and arithmetic, and linking them with the daily reality of students' lives, with an emphasis on the importance of promoting their moral and patriotic values.

- The upper basic stage: This stage extends from the beginning of the fifth grade until the end of the ninth grade.
- The secondary education stage: This stage includes grades (10-12) with its various tracks, whether academic, technical, or vocational. This stage is considered as a bridge between the basic education stage, the secondary education stage, and the labor market. At this stage, a variety of scientific and practical experiences are provided, which prepare students to complete their educational path or join the labor market (Palestinian Ministry of Education, 2017).

3. The stage of higher education: It is considered the highest stage of the educational process, as students receive their education in rehabilitating or technical colleges, or in a private or governmental university institution that grants a university degree. Students at this stage study a specialized field that qualifies them to join the labor market with high scientific and practical experiences.
4. The stage of non-formal education: This type of education includes every purposeful educational activity outside the framework of educational systems and educational institutions based on a formal educational basis. The Palestinian Ministry of Education offers two types of this education:
   - Parallel Education Program: This program targets drop-out students who have completed the fifth and sixth grades.
   - The Literacy and Adult Education Program: This program targets students over the age of 15 who cannot master the skills of reading and writing (Palestinian Ministry of Education, 2017).

1.2.1.3 Syrian Education in Crises

The Syrian educational system is facing educational crises represented by the subordination of educational theory, the lack of material resources, the lack of educational buildings, their inadequacy for the educational process, and the increase in students' failure and dropout rates (Ghanima, 2014). The war has created one of the most significant education crises in modern history, with an entire generation of Syrian children paying the price of the conflict, as educational facilities are drained and many

schools cannot be used because they have been destroyed or damaged (UNICEF, 2022b). As for the impact of the war on Syria, Al-Yousifi (2015) confirms that the war has greatly affected the education sector, as it has led to many students dropping out; Because of the security instability, the increase in cases of violence in schools, the density of students in schools, the shortage of teachers in conflict areas, the increase of teachers number arriving in safe areas, the difficulty of securing textbooks, in addition to the demolition of schools in areas of conflict and war as well as the risks that threaten students' lives. Kahil (2015) adds that the war on Syria has inflicted a lot of harm on Syrian schools, including demolishing and bombing and turning some of them into shelters for the displaced. This has led to a large percentage of students dropping out, and being exposed to fear and panic as a result of shelling and shooting (Kahil, 2015).

As for Syrian education in light of the Corona pandemic and the shift to e-learning, Mhalla et al. (2022) argue that the e-learning in Syria during the Corona pandemic was highly ineffective. She attributes this to the lack of control regulating the educational process, finding that e-learning did not achieve flexibility in accessing scientific material in relation to time and place needed. This is added to the lack of e-learning requirements such as the availability of electricity and computers, and the availability of fast internet.

1.2.1.4 Syrian Educational System

The Syrian educational system guarantees the right of education for every citizen. Syrian education is compulsory and free in the basic education stage, and free and non-compulsory in the secondary stage. Education in Syria takes place under a clear vision: "Education aims to achieve moral, cognitive, physical, social and aesthetic development for learners. It strengthens the national spirit and human values of life that stem from the ancient heritage of Syrian society. It supports healthy and physical development and provides a sound mind for learners. This vision highlights the importance of rising generations and developing their potential to contribute positively to building society. It develops their capabilities to rebuild Syria, and provides them with the skills, knowledge, and values to conduct scientific research or to establish their future profession. Such goals are necessary to achieve sustainable development and lifelong learning" (National Center for Curriculum Development, 2017). The number of Syrian schools has reached (11248) schools, including (344) vocational schools, (1661)

secondary schools, and (9243) basic schools. The primary schools are distributed according to the authorities supervising them as follows: (8796) government schools, (347) private schools, and (100) schools belonging to the International Relief Agency for the employment of Palestinian refugees UNRWA. The number of students in Syria has reached (3418835) students, and the number of Syrian teachers has reached (120138) teachers. As for kindergartens, there have been (1817) kindergartens, and the number of children in kindergartens has reached (121,350) children (Syrian Central Bureau of Statistics, 2021). Education in Syria includes the following educational stages:

1. Kindergarten stage: It is a non-compulsory and non-free stage, and its duration ranges from (2-3) years.
2. The basic education stage: It is a compulsory and free stage in which students learn the basics of knowledge and its keys to provide learners with experiences and attitudes appropriate to life. Public and private basic education is supervised by the Ministry of Education. This stage is divided into two cycles:
   - The first cycle: from the first grade to the sixth grade.
   - The second cycle: from the seventh grade to the ninth grade
3. The secondary education stage: It is a free non-compulsory stage, expanding from the tenth to the twelfth grade. It is divided into:

   - Scientific and literary general secondary education.
   - Vocational secondary education (commerce, industry, women's, agriculture, tourism, hotels, informatics).
   - Sharia secondary education (National Center for Curriculum Development, 2017).

4. Higher Education: It is supervised by the Ministry of Education and Higher Education, and is provided in intermediate institutes, universities, and higher institutes. There are several educational systems used in Syrian universities: full-time, parallel education, or open education (Al Hessan et al., 2016)

1.2.1.5 Iraqi Education in Crises

What happened in Iraq after 2003 harmed the Iraqi educational system as the destabilization, due to the war and the increase in sectarian conflict, led to the exposure of Iraqi schools to looting, vandalism, and closure for long periods (Al-Hamdani, 2021).

Furthermore, the workers in the field of education were targeted and exposed to kidnapping, murder and assassination (Al-Hamdani, 2021).

As for the impact of the Corona pandemic on the Iraqi educational system, it greatly affected educational outcomes and led to a shift to distance e-learning, which was widely used in conjunction with the spread of the Coronavirus. There was insufficient background knowledge on e-learning by teachers and students, who had poor skills in using modern technological tools. Besides, there was a lack of laboratories dedicated to e-learning. As a result, the level of quality in Iraqi education decreased due to a lack of supervision and increased apathy among students, which is attributed to their involvement in the labor market, poor internet networks, and frequent power outages (Al-Tabtabai & Asadi, 2022). Mohammed (2022) finds that the transformation of e-learning in Iraq during the Corona pandemic was a failure, especially in teaching scientific subjects that contain mathematical equations. He believes that e-learning suffers from the absence of planning and using unified platforms for it. To him, teachers are not qualified to deal with e-learning platforms and many students have not owned smart devices. Al – Rubaie (2021) confirms that Iraqi teachers and students were not ready to switch to e-learning remotely. This is greatly associated with the lack of technical support, the lack of Internet coverage to all regions, the lack of a learning theory that supports e-learning, and the negative perceptions towards e-learning by teachers, students, and parents.

1.2.1.6 Iraqi Educational System

Iraqi education is of a high standard, and teaching takes place in both Arabic and English. Public education in Iraq is available free of charge from primary school up to doctoral degrees (Iraqi Ministry of Education, 2011).

The number of schools in Iraq has reached (26,873), supervised by the Iraqi Ministry of Education. The number of students enrolled in Iraqi schools has mounted to (9,947,976) students, and the number of Iraqi teachers has reached (476,450). As for kindergartens, there were (1244) kindergartens; the number of children enrolled in kindergartens has reached (209935), and the number of kindergarten teachers has reached (8465) teachers (Ministry of planning Central statistical organization, 2022). The Iraqi educational system is divided into the following educational stages:

1. Pre-primary education stage: children join it at the age of (4-5) years, and it lasts for two years.
2. Primary education stage: students join this stage from the age of six until twelve, as this stage extends for (6) years, and at the end of this stage students undergo an exam to be able to join the intermediate stage. Primary education is public, unified, and compulsory.
3. Intermediate education stage: students join this stage from the seventh to the ninth grade. Intermediate education aims to discover and develop students' abilities and tendencies and provide them with various basic knowledge and experiences, to enable them to continue their studies and develop their spirit of good citizenship.
4. Secondary education stage: students join this stage from grades ten to twelfth. General education schools offer scientific and literary tracks, and this stage extends for (3) years. Secondary education aims to continue discovering students' abilities and tendencies, expand their culture, help them gradually acquire knowledge, and train them to master its applications in preparation for practical life. This stage has a vital role in helping students to pursue their subsequent studies.
5. Vocational and technical training stage: It is a branch of the secondary education system, and students have the right to choose vocational education immediately after the intermediate stage. Its duration is (3) years. Vocational education aims to provide students with technical and vocational skills to prepare them to engage in various professions after graduation.
6. Higher education stage: students who pass the general secondary exam successfully join this stage. Its duration is (4) years for most academic degrees (Iraqi Ministry of Education, 2011).

1.2.1.7 Yemeni Education in Crises

The civil war in Yemen has greatly affected the education sector as this war has led to the deprivation of large numbers of students from education. Enrollment in education has become a real difficulty due to this war (Al-Selwi, 2022). It also led to a reduction in the demand for education in various ways including recruiting young people and school children in the army or forcing them to join the war in order to provide their families. The war also affected the school infrastructure, which is no longer sufficient to accommodate students. The lack of security threatens the lives of students and teachers,

and thus, many were prevented from reaching their schools. The economic repercussions of the war were reflected in the interruption of teachers' salaries, which negatively affected the quality of educational performance in Yemen (Al-Selwi, 2022).

The Corona pandemic has affected education in Yemen, where a state of anxiety and confusion prevailed among the academic community as a result of the pandemic (Al-Khatib & Al- Awadi, 2021). Yemeni universities were unable to use e-learning as an alternative education system due to weak technical institutional capacity, the absence of electronic content for programs and courses, poor internet service, and the prevalence of technological illiteracy with most teachers and students (Al- Khatib & Al- Awadi, 2021). Al-Ahnoumi and Al-Shami, (2021) argue that Yemen, in general, does not meet the requirements of e-learning environments as a result of the lack of financial and human support, as well as to the low motivation of students towards e-learning. Al-Mansouri (2021) assures that among the obstacles to the application of e-learning in Yemen is the high cost of acquiring computers and the low actual participation of specialists in curricula and teaching methods in the manufacture of electronic courses.

1.1.1.8 Yemeni Educational System

The Ministry of Education manages public education affairs, which aims to achieve a comprehensive and renewed education that contributes to the development of the spiritual, moral, intellectual, and physical aspects to form a normal, integrated citizen. The Ministry of Education supervises public education of both types, governmental and private (Sharaf El-Din, 2021). Education in Yemen involves a clear vision represented in: "Reform and development of the basic education system to be able to provide basic education opportunities equally and with high quality for every Yemeni child at the age (of 6-14). Students should possess a general secondary education that is characterized by justice and equality in educational opportunities and by quality. It should offer diversity of disciplines in a way that enables graduates to continue their higher education efficiently or engage in practical life" (Yemeni Ministry of Education, 2022).

The number of Yemeni schools has reached (16,734), including (15,831) government schools, and (903) private schools. The number of Yemeni students reached (5,970,160), including (5,669,920) students studying in government schools, and (300,240) students studying in private schools. The number of Yemeni teachers reached

(215,983), including (197,468) teachers working in government schools, and (18,515) teachers working in private schools. While the number of kindergartens in Yemen reached (544) kindergartens, the number of children reached (14476) children, and the number of kindergarten teachers reached (1375) teachers (Ministry of planning Central statistical organization, 2022). The educational system in Yemen consists of the following educational stages:

1. Pre-school stage: It lasts for three years, and children from the age of (3-5) years are enrolled in it.
2. The unified basic education stage: its duration is nine years, and children join it from the age of six; and this stage is compulsory.
3. The secondary education stage, the scientific and literary track: its duration is three years.
4. The stage of secondary vocational education: its duration is three years, and it is supervised by the Ministry of Technical Education and Vocational Training.
5. The higher education stage: The higher education sector in Yemen is one of the largest service sectors, and it is supervised by the Ministry of Education and Higher Education. Higher education in Yemen adopts several systems: the semester system, the academic year system, the credit hours system, the distance education system, open education, and the bridging system.
6. Literacy and adult education: The Ministry of Education created a component for literacy and adult education in the ministry's plan within the project to develop public education (Sharaf El-Din, 2021).

1.2.2 Educational Loss

Educational loss poses a great danger to general education students in all educational stages in general; and it must be addressed and resolved as much as possible to reduce or eliminate it (Al-Hafashi & Al-Kassi, 2022). Shoshaa (2022) defines educational loss as the general or specific loss in educational knowledge and skills, whereas, Akhdir (2021) defines it as the inability to reach the desired educational results, either because students drop out, or because they are unable to continue the educational process. On the other hand, Donnelly and Patrinos (2021) see the educational loss as a decrease in students' knowledge and skills. (Samuel, 2017) sees it as the failure of the education system to provide comprehensive education and achieve goals. Betebenner et al. (2021)

describe the phenomenon of educational loss as a lack of academic growth for students, which leads to a decrease in their achievement.

The educational loss has two aspects, a quantitative aspect, which is the educational loss resulting from dropping out during the school year or from an academic stage, and from the failure and repetition of the academic year. However, the qualitative aspect is represented by the low level of achievement of students (Al- Anzi, 2021). Al-Hafashi and Al-Kassi (2022) add the human aspect to the educational loss, which is represented in the inability to benefit from human potential to the fullest degree. To them, this type of loss can be compensated by providing human resources. They also emphasize the material economic aspect of the educational loss, which includes everything related to the material aspects of education.

Kurniawan and Budiyono (2021) believe that the causes of educational loss are extended educational gaps or interruptions in education. Al- Anzi (2021) argues that educational loss occurs for reasons that may be related to the family, which is represented by the indifference of many families to the importance of education and forcing their children to work and leave school. He finds that some reasons are related to school as a result of applying non-pedagogical practices such as intimidating students, and the poor skills of some teachers in motivating students and in using appropriate strategies and methods in teaching them, or because of wars and crises, or for these reasons combined. Alzaghibi (2021) says in this regard that educational loss occurs due to the interruption of learning during the summer vacation, or due to the complete interruption of formal education for special reasons and circumstances. This may include students dropping out and then returning to school again, or students being absent from school for sickness. Some other reasons may be attributed to the poor quality of education and the unbalanced distribution of materials across the study semesters, where some subjects disappear in one semester and reappear in another (Alzaghibi, 2021).

Samuel (2017) mentions that the factors and causes that lead to the occurrence of educational loss may be school factors, domestic factors, or factors related to the student. Akhdir (2021) argues that there is a group of causes associated with educational loss, including social and school reasons, such as the frequent absence of a student, a pessimistic view of the academic and career future, unwillingness to specialize,

psychological disorders and changes, and the lack of time regulation. (Shoshaa, 2022) believes that educational loss occurs due to the official interruption of education, and this happens in times of crises such as wars, natural disasters, or resorting to other countries; and this interruption may last for several months or years. In addition, crises such as the Corona pandemic led to educational losses, as this pandemic, starting in March 2020, forced ministries of education around the world to reduce the number of classes and school days and to dispense with some subjects (Al-Hafashi & Al-Kassi, 2022).

Rashidi (2022) attributes the reasons for the occurrence of educational loss during the Corona pandemic to the lack of interest of the school administration in the activities and the students' psychological conditions, the teachers' negativity towards blended education or e-learning, its ineffectiveness, the absence of the complementary relationship between the teacher and the parents, the lack of an interactive learning environment, in addition to the lack of practical applications in some curricula, and finally to the failure to keep pace with the ongoing developments and events in the world. Al-Hafashi and Al-Kassi (2022) add other reasons for the occurrence of educational loss in light of the pandemic that is the teachers' inability to deal with the conditions of the virtual classroom and their technical skills. They find that the student's absence from the virtual classroom causes educational loss as well; this absence can be either real absenteeism or mental absenteeism represented by the lack of attention and focus to the teacher's explanation and the low motivation of students to learn. That all is added to the inadequacy of the educational system in providing methods and strategies suitable for e-learning and the inadequacy of the testing and evaluation system (Al-Hafashi, M., & Al-Kassi, 2022). As for Abdel-Hay (2022), he argues that educational loss occurs for reasons attributable to the low economic level of society and the high costs of education.

Shoshaa (2022) believes that there are many consequences of educational loss, such as the great waste of material and human resources in countries, the increase in illiteracy rates, and the lack of confidence in the ability of educational systems to provide quality education to students. Al-Hafashi and Al-Kassi (2022) add in this regard other consequences that may include the increase in failure rates in the various educational stages, the students' feeling of not understanding the information, and the inability to

continue the learning process. They find that educational loss stands as an obstacle to the interconnection of information and ideas in the students' minds.

The process of building the basic knowledge and skills that have been lost needs to determine the percentage of education lost based on what the students lost or did not learn due to the incompleteness of the educational course for whatever reason (Rashidi, 2022). Shoshaa (2022) recommends conducting diagnostic tests to identify areas of strengths and weaknesses. She believes that this is needed to build remedial plans to restore lost skills and knowledge. She also believes that much work is needed to motivate learners and teachers with the help of partners in the educational process. Abdel-Hay (2022) argues that there is a set of indicators that indicate the existence of educational loss among learners, such as low achievement, especially in mastering basic skills and knowledge, low motivation to learn and continue with it, stumbling in learning and academic delay, failing in class, dropping out of school, and not returning to it.

Al-Hafashi and Al-Kassi (2022) argue that educational losses can be restored and mitigated by reconstruction, i.e., preparing for future crises by creating the ability to provide mixed models of learning, and providing compensatory education to restore what was lost in learning as a result of school closures and interruptions in education, or dropping out of school. Plans should decide on the priorities of the curriculum and accordingly select the most important subjects. They should individualize education according to the needs of learners, increase the number of school days during the school year, and increase the number of daily teaching hours. Rashidi (2022) suggests activating blended education, supporting supportive teaching, supporting summer education, and implementing educational programs after official school hours to reduce the problem of educational loss.

Al- Anzi (2021) emphasizes in his study the vital role that the teacher plays in the educational process, and his primary role in compensating for educational losses. He finds it as his responsibility to improve student achievement and achieve learning outcomes for students. While Kashefpakdel et al. (2021) argue that the teacher should help students to compensate for the educational loss by using a set of remedial methods and by training them in the use of digital means, effective digital participation, and in the use of online assessment tools. Here, the importance of the teacher's use of

traditional and digital educational games in his teaching practices appears as a motivating strategy for students to learn and thus compensate for educational losses.

1.2.3 E-Learning

The educational Internet technologies used during the Corona pandemic or in times of war have become necessary and indispensable tools, as they have become the only means to organize the educational process. Therefore, the transformation to e-learning in crises has become a mandatory necessity for the continuation of the educational process (Matviichuk et al., 2022). E-learning is the most common open multimedia method for providing education, so it is used to enhance student learning opportunities as it supports interactive communication (Majid & Lakshmi 2022). E-learning takes place using modern communication mechanisms such as computer, its networks, and its multimedia which includes sound, image, graphics, search mechanisms, and electronic libraries, in addition to Internet portals, whether used remotely or in classrooms (Ajrash, 2018).

E-learning is defined as a type of learning based on the Internet or electronic communication through the use of the latest information and communication technology (Majid & Lakshmi, 2022). (Keskin & Yurdugul, 2021) assert that e-learning is a learning activity that takes place in virtual settings and is supported by network technologies such as applications and websites. While Hamdan (2021) believes that e-learning is one of the branches of distance learning, through which the educational content is presented in a student-centered manner; and this is done through computers, electronic devices, the Internet, electronic tools, and applications in synchronous and asynchronous ways.

Keskin and Yurdugul (2021) argue that students interact in online e-learning due to the availability of technology that allows learning activities to be conducted regardless of time or location in e-learning environments. Bismala et al. (2022) find that e-learning allows for collaboration, independent learning, and flexibility in developing individual strategies for learning. E-learning uses a wide range of educational tools and methods to meet the needs of students and teachers through environments that provide an opportunity to share knowledge (Özüdoğru, 2022). Al- Khafaf (2018) argues for the diversity of e-learning strategies such as electronic lectures, electronic educational

games, electronic cooperative learning, electronic group discussion, electronic brainstorming, electronic discovery, problem-solving, simulation, and web quests.

Zhenchenko et al. (2022) argue that in order to implement e-learning optimally, it must be characterized by the quality of its courses, the quality of its professionally prepared materials, the usefulness of the content provided to students, and the visual design of the online learning environment. They find that the e-learning environment must be characterized by attractiveness, reliability, efficiency, motivation, and clarity. Bismala et al. (2022) add that e-learning requires high motivation and self-discipline for students as it provides opportunities for creative expression and provides students with great potential to implement new projects and ideas for self-development and implementation of the principles of ongoing learning.

Bismala et al. (2022) say that the role of the teacher in e-learning turns into an advisor and to a teacher who helps students build individual learning paths and acquire knowledge. They argue that students turn their role from passive consumers of educational products to active participants in creating and collecting new knowledge. E-learning is classified according to the time of its occurrence and the presence of the teacher and the learner in it:

- Synchronous e-learning: It is the education that takes place live and requires the presence of the teacher and the learners simultaneously in front of computer devices and technologies to conduct discussions or receive lectures during virtual classes (Hamdan, 2021). This type of e-learning is distinguished by the learners receiving immediate feedback on their learning. It is of low cost, as the learner does not have to go to school. However, among its downsides is that it needs modern equipment and a good network, and it also requires adherence to the time specified for the lesson (Al- Samaraee, 2022).
- Asynchronous e-learning: It is indirect education that does not require the presence of the teacher and the learner at one time and place (Kazem et al., 2019). This type of education is characterized by the fact that the learner studies according to what suits his time and receives education according to the effort he wishes to present. He can return the study material and refer to it electronically as needed, but it is taken into account that the learner does not obtain immediate feedback, and the

learner is deprived of direct interaction with the teacher, which makes him bound by the information he has (Al- Samaraee, 2022).

- Blended education: It is a type of learning in which traditional education is mixed with e-learning, and synchronous education is mixed with asynchronous education (Kazem et al., 2019). Blended education takes advantage of all the different technological media and capabilities, and it is done by combining more than one method and tool for learning, whether traditional or electronic, to provide good learning for learners that suits their characteristics and needs (Al – Rubaie, 2021).

Through exploring the e-learning systems used in each of Palestine, Syria, Iraq, and Yemen, the researcher has found that the most use was for synchronous and asynchronous e-learning.

Ajrash (2018) classifies e-learning into distance e-learning that is used to overcome the problem of distances, and it is based on the requirement of the simultaneous presence of the teacher and the learner. Mobile learning, the second classification, takes place using small mobile devices such as smartphones. This type of education is centered on the learner, and it takes place on the move and at any time.

Mohammed (2022) believes that e-learning is characterized by the absence of the need for students to go to the educational institution, which makes it relatively low in cost. He finds that the presence of fixed and easily accessible educational content is among the features of this type of learning. Qareeb (2022) adds that it allows direct communication between the teacher and students using electronic means of communication, and it also allows the multiplicity of explanatory and educational means for students, such as the use of applications on the Internet. It frees students from the restrictions of time and place and provides equality among students. Whereas Kazem et al. (2019) believe that e-learning is characterized as attractive education for students through interactive technology because it facilitates cooperative learning among students. To them, it also engages the different senses of students through the use of multimedia in teaching. The educational curricula are available to students throughout the day. This type of education also supports continuity to access knowledge and information and helps the learner to check the extent of his progress or regression through continuous review of data banks and tests. As for Ajrash (2018), he confirms that e-learning helps create an interactive environment through new electronic

technologies, and students acquire the skills and competencies necessary to use communication and information technologies. It also provides various and different methods characterized by accuracy and fairness in evaluating students' performance. E-learning takes into account individual differences and spreads a culture of self-learning.

Bismala et al. (2022) argue that the implementation of e-learning is not easy as its implementation involves possessing a set of characteristics and skills such as fluency in the use of online learning technology, communication skills, understanding and evaluation of interaction, cooperative learning, and belonging. Besides, it is expensive because it requires the purchase of computers or smart tablets. Mohammed (2022), confirms that e-learning suffers from the high cost of Internet service and the lack of technical support for teachers. The occurrence of technical problems that may hinder the progress of the educational process may be problematic as well. He finds that students in e-learning suffer from a loss of motivation and a sense of isolation due to the lack of direct communication. It also suffers from a lack of sufficient experience to deal with this style of learning and teaching. Qareeb (2022), adds in this regard that e-learning suffers from difficulty in the evaluation process and the development of good standards for it.

Educational games, especially digital ones, are considered as an integral part of e-learning because they are considered as a tool and a strategy that supports the transformation to e-learning, especially in times of crisis.

1.2.4 Educational Games

The childhood period is closely related to play and games, and therefore 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 expressed the positive role of play in the development and education of the child. Hence, the educational games are a modern tool to integrate play efficiently in the twenty-first century(Wilkinson, 2016). Piaget (1990) attaches great importance to play in child development and believes that the development of intelligence in children is closely related to play activities, finding that each type of game is associated with a specific stage of the child's development. Vygotsky believes that play is an essential factor in the social and cognitive development of the child. He confirms in his theory that the teacher

is responsible for the child's development, as he must use play in his educational practices to provide children with good experiences and to create an atmosphere of affection between the child and learning, which makes learning more fun and useful (Ribeiro, 2019). Therefore, the current study is based on the cognitive theory that calls for cognitive growth through play, as both Piaget and Vygotsky believe that play reflects cognitive development. They also see that play is a basic requirement for obtaining knowledge because it is related to the stages of mental development in children, and thus it forms the basis for intellectual and cognitive development in humans (Hariplish, 2017).

Although games are generally used for recreational and entertaining purposes, they can also be used in educational activities. They help students develop their creativity, decision-making ability, imagination, and thinking skills (Alkan & Mertol, 2019). The researchers believe that the use of educational games in education leads to an increase in students' motivation towards learning and an increase in their academic achievement (Sabirli & Coklar, 2020; Zou et al., 2021). In this regard, Yu et al. (2021) argue that these games lead to increase students' participation and engagement in learning. While Eltem and Berber (2021) confirm that they are one of the most important methods that attract students' attention and interest, games are considered as one of the most important student-based teaching strategies, and they are suitable for all ages and levels of students. They provide students with decision-making skills, evaluation, problem-solving, negotiation, and innovation in risk-free environment. Clark et al. (2018) find it useful for reiterating and consolidating what students have learned and for enabling them to enjoy and relax while using their cognitive skills.

Khadijah et al. (2022) argue that the critical factor in the success of educational games is their ability to motivate students. Their implementation helps adapting learning and obtaining experiences in play based on the needs, preferences, and capabilities of students, and the ability of games to attract students' curiosity and provide knowledge through an enjoyable experience. Giannakoulas & Xinogalos (2018) say 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, as defined by (Alatwah, 2022), are organized educational activities that attract student interest, and include interaction between learners (cooperating or

competing) as individuals or groups in an attempt to achieve specific educational goals, within the framework of specific established rules. Yıldız (2021) defines them as designing games to achieve learning in a real entertainment environment. Educational games are also defined as targeted, competitive educational activities, carried out by the learner individually or collectively, with specific procedures and laws, which stimulate the learner's motivation towards learning and make it more positive and interactive in acquiring experiences and skills (Abu-Husain, 2021).

Educational games play a prominent role in developing the learner's personality from the physical and emotional aspect. They release pent-up emotions and help build social skills. They also develop mental and innovative knowledge, and develop the moral and value system because the student learns through them how to differentiate between right and wrong, right and duty. Educational games also develop the learner's linguistic abilities. They work to treat language disorders (Faisal, 2017). Educational games are of great importance in learning by doing and observing through practical experimentation, that is, they play a major role in establishing the link between theoretical and practical learning at the same time (Karaman et al., 2022). Hariri (2014) argues that educational games help students relieve stress and relieve family and school pressures. They develop students' muscles and discovery skills and help them to exchange ideas and opinions with others. Play is also a way to show talent and develop creative thinking. Educational games also increase students' knowledge levels. (Al- Kubaisi, 2017) believes that educational games work to bring concepts closer together and help to understand the meanings of things. They also help in creating interaction with the elements of the environment to achieve learning and personality and behavior development.

Alatwah (2022) argues that educational games have the following elements: the goal, the set of rules that clarify the method of play, the competition among learners or between the learner and the computer or a specific touchstone, and the challenge that must be within the limits of the learner’s capabilities. Such elements also include the imagination that stimulates the desire and motivation of the learner to continue learning, and the element of entertainment that keeps the boredom away from learners.

Educational games are divided according to the environment in which they are used: traditional educational games that are used in a face-to-face learning environment in

regular classrooms, and digital educational games that are used in a virtual learning environment through various e-learning platforms (Yıldız, 2021). Traditional educational games that are used in a face-to-face learning environment in the classroom are a tool that improves students' self-expression skills, strengthens their connection to life through activities that require the use of their physical and mental skills, enhances their knowledge, and affects their behavior positively (Mercer et al., 2017).Yıldız (2021) believes that well-designed educational games have many benefits such as increasing active participation in the classroom, increasing motivation and prolonging attention, reducing behavioral problems, facilitating learning and remembering, developing cognitive, emotional and motor skills, increasing self-confidence, problem-solving, critical thinking, and creativity.

Digital educational games are those games that are offered to students through interactive electronic platforms to integrate play with learning by increasing academic participation and increasing motivation toward learning (Callaghan & Reich, 2020). Technological progress has led to the development of the use of digital educational games due to the lack of safe play spaces and the digital interests of the new generation (Kapidere, 2021). Alatwah (2022) defines electronic educational games as those games that are played through an electronic device in which sound and visual effects are integrated, and in which the focus is on scoring points or completing various skills and moving from one stage to another to achieve the desired educational goals. While Fallata and Al-Sharif (2022) define it as a set of activities and procedures developed within an electronic game that is designed to achieve an educational goal. Jaber (2020), defines it as a form of learning based on a set of planned steps and actions that the learner performs on a computer, smartphone, or tablet (iPad) by adhering to some rules to achieve a specific educational goal in an enjoyable competitive framework. Kim et al., (2018) argue that electronic educational games are a set of interrelated activities and processes to solve problems using or applying the features and elements of the game.

Hoda et al. (2014) stress the importance of digital educational games in promoting collaborative learning by promoting mutual awareness, access to information, and fair oversight. Fallata and Al-Sharif (2022) argue that they help motivate students toward learning, contribute to increasing concentration, and help students learn from their mistakes. According to Acquah and Katz (2020), educational games are effective when

they have the following features: ease of use, challenge, rewards, feedback, control, autonomy, direction, and interaction. Fallata and Al-Sharif (2022) add that electronic educational games have an impact because they help students use more than one sense, provide individual play without competing with others, divide information into small steps through which the student gets immediate feedback, and combine skill and knowledge. Aleneze (2022) confirms that electronic educational games activate the learner's memory, motivate him to focus and pay attention, saturate the learner's imagination and make him feel the ability to achieve. (Fallata and Al-Sharif (2022) argue that electronic educational games should be selected according to a set of criteria: they should be appropriate to the age and mental stage of the learner, have simple steps, be consistent with learning objectives, be stimulating for creative thinking and interesting for students, and present scientific content at different levels with gradual levels of difficulty. They also should be designed in a way that approximates and simplifies concepts for students. Educators classify digital educational games into several categories, and Chen et al. (2020) classify them according to the purpose of their use: adventure games, sports games, role-playing games, fighting games, driving games, and puzzle games. (Salem, 2018), classifies them in terms of the number of players or participants in the game into: individual games and cooperative games.

Despite the importance of educational games in developing students' cognitive, motor, and technical skills, many teachers do not show great tendency to apply them for several reasons. Some reasons are related to the increase in the teaching burden on the teacher; having in mind that educational games require time and effort to prepare them to achieve the desired goal (Alkan & Mertol, 2019). One of the most important challenges facing the use of these games is the lack of time to play digital educational games, and the design of academic curricula does not support the use of digital games, in addition to the high financial cost of using them (Aleneze, 2022). Swier and Peterson (2018) add that implementing educational games requires effort and time to prepare them optimally, in addition to the teachers' lack of technical expertise that enables them to use these games in their teaching practices. However, Pan et al. (2021) argue that play-based learning faces the challenges of poor infrastructure, resources, guidance, and teachers' abilities to apply it in the classroom. However, these challenges can be overcome from the point of view of Alkan, and Mertol (2019) by training teachers on the necessary practices to employ these games in the classroom through seminars and

training courses. Also Denden et al. (2018) argue that the gender and personality of the learner influence their perception of specific elements in the game, such as females finding the feedback provided through the game more useful than males. Teachers play a supportive role in learning through play when they provide an environment that encourages learning and provides good play activities. The role of the teacher in educational games is not limited to observation, but rather to participating in in-game activities to teach a skill or clarify a specific method (Abu-Husain, 2021). Fallata and Al-Sharif (2022) stress the role of the teacher in educational games. They find it important in: creating a positive climate for learning, clarifying the purposes of the game, organizing educational resources, and balancing the intellectual and emotional aspects of the educational process. (Abu-Husain, 2021) summarizes the role of the teacher in using educational games in the educational process by studying the available games, arranging groups, defining roles for each student, providing assistance and intervention on time, evaluating the effectiveness of the game, and achieving learning goals. This role also includes choosing educational games that are meaningful and enjoyable with clear and easy rules, suiting students' tendencies and abilities. (Abu-Husain, 2021) adds that for the teacher to be able to employ educational games, he must possess a set of skills such as the skill of presenting the game, distributing roles, and observing and evaluating students' performance through the game.

1.2.5 Motivation to Learn

Motivation is the main drive of the various activities of the individual, which he acquires through new experiences. In other words, it is the potential energy that must be present for learning (Mahmoud, 2015). Motivation is an intrinsic force that drives behavior and directs it toward achieving a specific goal. This force maintains the continuity of behavior. Motivation is stimulated by internal factors from the individual himself and the surrounding physical or psychological environment (Azzawi et al., 2022). Fulton (2019) defines motivation as the process by which an individual organizes his action depending on the degree of satisfaction of his needs. Whereas Özhan and Kocadere (2020) define it as taking action to do or complete something that has a significant impact on success and performance. It is also defined as a set of internal motives or reasons that explain the student's behavior, orientation, and activities in the educational process (Tsyganova et al., 2021). (Barak et al. (2016) identify it as a reason

or goal for an individual to act in a certain way in a particular situation. As for Escobar Fandiño et al. (2019), it is a complex and not easy psychological process that involves many aspects such as cognition, behavior, emotion, decision-making, and biological aspects of the learner's personality.

Motivation is an important pillar of the educational process, and a prerequisite for learning to occur as it prompts the learner to pay attention to the elements of the educational situation and to respond to it with self-activity (Elgendy, 2022). (Budasi et al., 2020) stress that motivation is a belief within the student that directs him to learning goals, motivates him to good behavior, and enhances his learning and knowledge acquisition. Elgendy (2022) argues that motivation is of great importance in student learning as it releases their potential, attracts their attention, increases their interest in learning activities, increases their perseverance toward available learning resources, and provides them with conditions that encourage learning to occur.

Elgendy (2022); Kebos & Al-Yazid (2022); Sun et al. (2017) confirm that motivation is two types: internal motivation, which comes from the learner, and it is the desire that motivates the individual to enjoy, be content, and engage in any activity he undertakes to satisfy himself. Internal motivation is triggered by factors arising from within the learner, such as love of knowledge, curiosity, inclinations, and interests. The other type is the extrinsic motivation which is triggered by external factors. This includes incentives that are imposed on the learner in an attempt to motivate him to complete the activity, such as grades, prizes, or pleasing the teacher or parents. Lin et al. (2017), say that extrinsic motivation is the desire to achieve a goal under the influence of external factors.

Bahri and Zwari (2022) argue that motivation must have a set of elements to motivate students to learn, such as curiosity, self-efficacy in carrying out tasks and achieving goals, students' positive attitudes towards learning, and the need to do or obtain something. (Azzawi et al. (2022) argue that motivation has several functions in the learning process, such as moving and stimulating the learner's behavior toward the goal, directing the behavior toward a specific destination and not another, maintaining the continuity of the learner's behavior, and stimulating the behavior to a moderate degree to obtain the best results. Students’ motivation in the classroom is influenced by several factors: some are related to the teaching and learning process and the strategies and

teaching methods used in it, including those related to the lesson and subject matter. Others are factors related to the teaching method, assessment, and other learning environment and materials used in teaching (Kilic et al., 2021). Schwan (2021) asserts in his study that students' motivation increases when they are given a certain level of autonomy in their learning, given the opportunity to make choices that support their goals. He finds that it is beneficial for them to discover the subject of learning through experience. Radef et al. (2022) in this regard argue that students' tendencies and attitudes, their beliefs about their abilities and the possibility of their success, their expectations about success and failure, the expectations of teachers and parents about their performance, the social context, and individual differences among learners are all factors that affect the level of their motivation towards learning.

The problem of low motivation to learn is one of the problems that most affect the course of the educational process. The manifestations of low motivation of students towards learning include: distraction and poor participation, provoking problems and disturbing others, and forgetting assignments and neglecting to solve them (Elgendy, 2022). Kebos and Al-Yazid (2022) summarize the reasons that lead to a low level of motivation among students with subjective reasons such as boredom, the learner's negative expectations of his abilities, low self-esteem, lack of self-confidence and a sense of psychological pressure. They attribute lack of motivation to some external reasons, including those related to the family and the level of their expectations regarding the education of their children, and their lack of interest education, family conflicts, frequent criticism, and cruel treatment. Some other reasons are related to the school such as the teachers' failure to keep up with modern methods and strategies in education, the difficulty of the curricula, the lack of educational aids in the school, and the failure to link learning to the students' practical life. Therefore, Radef et al. (2022) see that teachers should adopt a balanced and moderate attitude in promoting students who lack interest and motivation to learn, show less strictness in control and organization of educational activities, believe that students want to learn, and focus their attention towards learning goals. They also should link the learning topics with students current and future needs.

Many studies have attached much importance to the impact of educational games on students' motivation to learn, such as the study of Hense and Mandl (2012), which

emphasizes the need to design digital educational games in a good way to motivate students to learn by meeting the three basic psychological needs: competence, independence, and belonging. Cornillie et al. (2012) study has concluded that educational games can increase motivation toward learning and thus improve the learning process. (Fryer and Bovee (2016) concludes that the success or failure of students in learning environments depends directly on the motivation, because it is one of the most important components of the student learning process in the educational environment, affecting what, how, and when the learner decides to learn. Özhan and Kocadere (2020) believe that motivation has a positive effect on students' success and academic progress. Gamlo (2019) argues that digital educational games are a motivating factor for motivating students to learn English. His study emphasizes the importance of motivation when learning languages.

1.3 Terminological and Procedural Definitions

Educational games idiomatically: They are purposeful competitive educational activities, which the learner performs individually or collectively, with specific procedures and laws, which stimulate the learner's motivation towards learning and make it more positive and interactive in acquiring experiences and skills (Abu-Husain, 2021).

Educational games procedurally: They are activities that are practiced in the classroom or the virtual environment in times of crisis in (Palestine, Syria, Iraq, and Yemen) through smart screens, and are governed by a set of rules and laws, seeking to achieve educational goals.

Educational loss idiomatically: It is the gap among the inputs, processes, and expected outputs of the educational process in the formal system (Affouneh & Salha, 2022).

Educational loss procedurally: It is the educational gap that occurs in the knowledge and skills that students should have acquired at a certain stage, but were not able to acquire them fully or partially as a result of wars and crises in (Palestine, Syria, Iraq, and Yemen).

E-learning idiomatically: is the realization of educational activities through electronic media, where knowledge and skills are transferred using electronic technologies (Bismala et al., 2022).

E-learning procedurally: It is a form of modern education used in crises, in which the educational experience is provided via the Internet through various educational platforms or technological media in (Palestine, Syria, Iraq, and Yemen).

Educational crisis idiomatically: It is a state of imbalance and turmoil that leads to a defect in the educational system, and impedes the workers in it from performing their work. The crisis threatens the continued ability of the educational system to achieve its goals. The educational crisis requires immediate action to prevent its aggravation, and work to return things to normal (Sheryan & Kulib, 2022).

Educational crisis procedurally: an emergency due to wars, conflicts, and the Corona pandemic, which negatively affected education in (Palestine, Syria, Iraq, and Yemen). Such emergencies require confronting them by using appropriate methods to develop the educational process, achieve its objectives, and fairly ensure its continuation for all students.

1.4 The Research Problem

The disparity in unequal learning opportunities has increased as a result of crises, especially the Corona pandemic, as the process of total and partial closure of schools all over the world continued for 224 days in average. This number increased in schools in low- and middle-income countries, and teachers in these countries have not received sufficient support for professional development that qualifies them for education in light of the pandemic (UNICEF, 2022a) Health crises and wars greatly have 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 (Al-Zanfali & Al-Shami, 2020). Palestine, Syria, Iraq, and Yemen are in a worse situation than the rest of the Arab countries. Wars and armed conflict in Syria have complicated the educational scene. Palestine has suffered because of the Israeli occupation and its aggressive practices and targeting of education. The sectarian and civil wars in both Iraq and Yemen have caused much educational troubles. Those turbulent conditions in those mentioned countries have created a huge gap in students' skills and knowledge in these countries. Add to these conditions, the Corona pandemic, which exacerbated the educational gap. Palestine, Syria, Iraq, and Yemen are suffering from double crises, the crisis of the Corona pandemic and its repercussions on

the education sector on the one hand, and wars and armed conflict and the damage it left to the 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 get rid of anxiety and tension resulting from difficult psychological conditions they experience in areas of conflict, wars, and crises of all kinds. And since play restores students' activity and motivation to learn, and since it is an educational necessity, being linked to human development from a social, creative, emotional, historical, and cultural perspective (Ribeiro, 2019). the employment of educational games, especially digital games, in the educational process has become more urgent than before. Educational games are one of the most important modern learning strategies that help students learn and compensate for the skills and knowledge they lost as a result of crises. Furthermore, they help students get rid of stress and anxiety (Clark et al., 2018). 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. Therefore, this study seeks to know and investigate the role of educational games in compensating for the educational loss in Palestine, Syria, Iraq, and Yemen, as they are countries suffering from wars and a pandemic together. Accordingly, the current study attempts to answer the following questions:

1. What is the role of educational games in the learning process of students in Palestine, Syria, Iraq, and Yemen?
2. What is the role of educational games in compensating for the educational loss that occurred as a result of the crises in Palestine, Syria, Iraq, and Yemen?
3. What is the effect of educational games on the motivation towards learning among students during crises in Palestine, Syria, Iraq, and Yemen from teachers and educational experts’ points of view?

4. What are the challenges facing the employment of educational games in the learning process in Palestine, Syria, Iraq, and Yemen?
5. What are the most important recommendations for developing the use of educational games in the learning process in Palestine, Syria, Iraq, and Yemen?
6. Is there a statistically significant correlation at the level of significance ($\alpha = 0.05$) between employing educational games and compensating educational losses in Palestine, Syria, Iraq, and Yemen in crises?
7. Is there a statistically significant correlation at the level of significance ($\alpha = 0.05$) between employing educational games and increasing motivation towards face-to-face and e-learning in Palestine, Syria, Iraq, and Yemen in crises?
8. Are there statistically significant differences at the level of significance ($\alpha = 0.05$) between the average teachers' use of educational games due to the variables (country, gender, type of school, work in the field of educational loss, educational qualification, specialization, years of experience in education, and the educational stage taught by the teacher)?

The current research aims at testing these null hypotheses:

1. There is no statistically significant correlation at the level of significance ($\alpha = 0.05$) between employing educational games and compensating educational loss in Palestine, Syria, Iraq, and Yemen in crises
2. There is no statistically significant correlation at the level of significance ($\alpha = 0.05$) between employing educational games and increasing motivation towards face-to-face and e-learning in Palestine, Syria, Iraq, and Yemen in crises
3. There are no statistically significant differences at the level of significance ($\alpha = 0.05$) between the average teachers' use of educational games due to teachers' country.
4. There are no statistically significant differences at the level of significance ($\alpha = 0.05$) between the average teachers' use of educational games due to teachers' gender.
5. There are no statistically significant differences at the level of significance ($\alpha = 0.05$) between the average teachers' use of educational games due to type of school that teachers work in.

6. There are no statistically significant differences at the level of significance (α = 0.05) between the average teachers' use of educational games due to work in the field of educational loss.
7. There are no statistically significant differences at the level of significance (α = 0.05) between the average teachers' use of educational games due to teachers' educational qualification.
8. There are no statistically significant differences at the level of significance (α = 0.05) between the average teachers' use of educational games due to teachers' specialization.
9. There are no statistically significant differences at the level of significance (α = 0.05) between the average teachers' use of educational games due to teachers' years of experience in education.
10. There are no statistically significant differences at the level of significance (α = 0.05) between the average teachers' use of educational games due to educational stage taught by the teacher.

1.5 The Objectives of the Research

The study aims to achieve the following objectives:

- Determining the role of educational games in the learning process of students in crises.
- Shedding light on the role of educational games in compensating for educational losses resulting from crises and wars.
- Identifying the obstacles and challenges of employing educational games in the educational learning process in Palestine, Syria, Iraq, and Yemen in crises.
- Determining ways to develop the use of educational games in the educational learning process in the future.

1.6 The Importance of the Research

The importance of this study appears through its focus on the role of educational games in compensating educational losses in Palestine, Syria, Iraq, and Yemen in light of the crises that these countries suffer from, due to their direct impact on student learning. Educational games function to illustrate concepts and simplify knowledge. They can shorten the time and reduce efforts in the educational process, provide scientific content

in an interesting and attractive template for students, and improve the psychological state of students. The educational games function in such ways through their ability to help students get rid of stress and anxiety resulting from the crises in which they live, and thus increase their achievement, and raise the level of their academic performance. This may contribute effectively to compensating the educational losses resulting from crises. This study benefits the ministries of education in these countries by urging the need to include educational games within their educational policies systematically, and to train teachers to employ them effectively in their classroom practices. The current study may be a starting point for other studies on the use of educational games in the future.

1.7 The limits of the Research

Temporal limits: the first semester of the academic year (2022/2023).

Spatial limits: education directorates, universities, and schools in Palestine, Syria, Iraq, and Yemen.

Human limits: educational specialists, university professors, male and female teachers, and educational supervisors in Palestine, Syria, Iraq, and Yemen.

Thematic limits: This study examined the role of educational games in compensating for the educational loss for all academic subjects and for all academic levels in Palestine, Syria, Iraq, and Yemen during crises.

1.8 Summary

This chapter has introduced the need to use effective instructional strategies that help students learn in times of crisis where a model is presented for four Arab countries (Palestine, Syria, Iraq, and Yemen) that suffer from double crises: the Corona pandemic, wars, armed conflicts, and occupation, as is the case in Palestine. This has negatively affected the outputs of the educational systems in these countries, affecting the quality of education provided to students there. Consequently, a knowledge gap in the basic knowledge and skills that students must possess has appeared, in what is known as the phenomenon of educational loss. This research investigates the role of educational games as an active learning strategy in compensating for educational loss and influencing students' motivation toward face-to-face and e-learning in crises. This chapter also deals in some details with the educational systems in these countries and

the repercussions of the crises they are experiencing on their educational systems and thus on their educational outputs. The research problem is identified through (8) questions that have been asked and (3) hypotheses. The next chapter will include more details about the role of educational games in compensating for educational loss and the tools used to answer the research questions and test its hypotheses.

Chapter Two

Methodology

This chapter deals with a description of the approach used in this research through the method and procedures in which it has been carried out. Reference has been made to the research population, its sample, and the participants in the qualitative interviews of the research. In addition, this chapter clarifies the tools that have been used to collect the necessary data to obtain the results, taking into account the validity and reliability of these tools. This chapter also includes a presentation of the research variables, the method used for analysing interviews and questionnaires, and a presentation of the procedures undertaken by the researcher to complete the research.

2.1 The Research Approach

This study aims to explore the role of educational games in compensating for educational loss and its impact on student's motivation towards learning. They include both face-to-face, and e-learning, during crises in four Arab countries (Palestine, Syria, Iraq, and Yemen). This study is considered one of the mixed studies which uses two approaches: the first is the qualitative descriptive approach that uses the multiple case study approach which suits the subject of the study, through which an in-depth understanding of the studied problem can be gained (Creswell, 2012). The multiple case study method is usually used in educational and social studies to find similarities and differences between these cases (Vannoni, 2015). It is also used to generalize some results that cannot be obtained from a single case study (Levings, 2015). The second approach applied in this study is the quantitative descriptive approach. A questionnaire is used to find out the relationship between the use of educational games and compensation for educational loss on the one hand, and the increase in students' motivation towards face-to-face and e-learning on the other hand. It also measures the effect of some variables on the use of educational games.

2.2 Population

The study population consists of educational experts working in the ministries of education, university professors, educational supervisors, and teachers from Palestine, Syria, Iraq, and Yemen. These countries have been selected based on the following criteria: the exposure of all of them to the global health crisis (Corona pandemic), the

exposure of Syria, Iraq, and Yemen to wars and armed conflicts, and the suffering of Palestine from the Israeli occupation for decades. Thus, the current research investigates the role of educational games in compensating for educational loss in these countries in which educational loss has accumulated as a result of exposure to a long period of wars that have drained their economic forces, negatively affecting the quality of their educational outputs. Since the strategy of educational games theoretically increases motivation towards learning and helps mitigate the effects of psychological crises due to its characteristics, it has been chosen to find out its impact on learning in these four countries.

2.3 Sample

The study sample consists of participants in the qualitative part of the study, including forty education specialists from universities and the Ministries of Education, educational supervisors, and teachers from four Arab countries (Palestine, Syria, Iraq and Yemen). Those four countries suffer from the Corona pandemic as a health crisis in addition to conflicts and civil wars. However, Palestine suffers the Israeli occupation. Participants were numbered from (1-40) to include their opinions and points of view, preserving their privacy. (10) educational experts from Palestine were interviewed, (4) of them hold a Ph.D., (5) a master's degree, and (1) holds a bachelor's degree. Five of them have scientific majors whereas five have literary majors. (10) educational experts from Syria were interviewed. (5) of them hold a Ph.D. and (5) hold a Bachelor's degree. Five of them have scientific majors and five of them have literary majors. As for Iraq, (10) educational experts were also interviewed, (1) of whom has a doctorate, (7) a master's degree, (2) a bachelor's degree. Six of them have scientific majors and four have literary. Whereas in Yemen, (10) educational experts were also interviewed with (9) whose academic qualifications are Ph.D. and (1) a Master degree. Three of them hold scientific majors versus (7) with literary majors. For more details about the characteristics of the research participants see appendix (A)

As for the quantitative data sample, it is an intentional sample consisting of (420) teachers from the Arab countries participating in the study. It includes (109) teachers from Palestine, (100) teachers from Syria, (109) teachers from Iraq, and (102) teachers from Yemen. The intentional sample is used due to the difficulty in obtaining a

representative sample of these countries. Table (2) shows the distribution of the study sample according to its demographic variables.

Table (1)

Distribution of the research sample according to its demographic variables

Variable	Levels of Variable	Number (N)	Percentage (%)
country	Palestine	109	26%
	Syria	100	23.8%
	Iraq	109	26%
	Yemen	102	24.2%
	total	420	100%
gender	Male	148	35.2%
	Female	272	64.8%
	total	420	100%
School type	Public	311	74%
	Private	80	19%
	UNRWA	29	7%
	total	420	100%
Work in the field of educational loss	Yes	295	70.2%
	No	125	29.8%
	total	420	100%
Qualification	Diploma	21	5%
	Bachelor	276	65.7%
	Master	103	24.5%
	PhD	20	4.8%
	total	420	100%
Specialization	Scientific major	172	41%
	Literary major	248	59%
	total	420	100%
Professional Experience	Less than 5 years	70	16.7%
	5-10 years	127	30.2%
	More than 10 years	223	53.1%
	total	420	100%
The grade level of teaching	From 1-4 grade	122	29%
	from 5-9 grade	106	25.2%
	from 10-12 grade	59	14%
	more than one grade level	133	31.8%
	total	420	100%

2.4 Research methods

The methods used in this study are qualitative and quantitative. The qualitative interview is used as a qualitative method. The quantitative questionnaire is used as a quantitative method. These methods are built after reviewing the theoretical literature related to the subject of the study. These methods are used to further ensure the reliability of the results. These methods are as follows:

2.4.1 The Interview

This section sets out the rationale behind the interview, its design, the selection criteria for the interviewees, and the protocol of the interview.

2.4.1.1 Semi-Structured Interviews

The researcher has conducted (40) interviews to understand the under-study phenomenon through the respondents' perspectives and to clarify the meaning of their own experience in using educational games. Personal interviews are a tool for data collection in qualitative research studies. They provide a large amount of in-depth information related to the respondents regarding their views on the role of educational games in compensating for educational loss and their impact on students' motivation toward learning. During the interview process, the interviewer can ask questions and delve into topics that may provide greater scope. There are three standard interview models: structured interviews, semi-structured interviews, and non-structured interviews (Al-Jameh, 2019).

Semi-structured interviews are conducted for their suitability for the purposes of the study to explore the opinions of the respondents. They also provide a flexible structure for dialogue and interview management and help obtaining detailed information about the subject of the study. The questions in the semi-structured interviews are not completely consistent, and thus the researcher can change the way in which he puts the question. This allows the respondents to answer freely feeling not obliged to answer in a consistent manner (Al-Jameh, 2019). The semi-structured interviews have been conducted in this study because of their suitability for the study purpose in an exploratory and open manner, adhering as much as possible to a predetermined script. Minimal information has been provided to give context to the interview. A basic

interview protocol has been designed to delve into the essence of the description of educational games, educational loss, and motivation toward learning.

In this semi-structured interview, questions are identified and formulated using an interview protocol that covers the main topics of the study. The flexibility of this type of interview enables the interviewer to improvise follow-up questions based on the participants' answers, allowing them more spaces for verbal expressions. The idea of a semi-structured interview is to explore the field of research by gathering information from each participant by providing them with clear instructions on what they should talk about (Kallio et al., 2016). The main objective of these interviews is to obtain as much information as possible of high quality, and then store, analyze, and compare it with data from other interviews.

The semi-structured interview consists of two phases:

1. Introduction and Basic Information: At this stage, an overview of the study is provided to the participant and its general objective is defined. The confidentiality of the participant's data is emphasized, and his right to access, modify, correct, and erase his data at any time he wants is guaranteed. Then basic information about the interview (date, time, location) and personal information of the participant are collected.
2. The Interview: At this stage, accurate and quality information is obtained from the participants in the study. Therefore, a detailed questionnaire is determined to be used at the discretion of the interviewer, according to the development of the interview and the willingness and interaction of the participant being interviewed.

Objective of the Interview: To explore the role of educational games in compensating for educational loss and its impact on students' motivation towards face-to-face learning and e-learning in crises in four Arab countries (Palestine, Lebanon, Iraq, Syria). Also, the interview aims to explore the challenges these countries have faced, and the recommendations the interviewees have had for developing and employing them in the future.

Interviewees: The selection of interviewees is key to obtaining reliable, high-quality data. Interviewees should be contacted in advance with the research topic, objective and process to be used. Their consent should be obtained and the interview should be

scheduled. The participants have been deliberately selected according to the following criteria: participants' willingness to participate in the interview, their consent to record the interview, the ability of each participant to give a clear picture of the educational system, the educational strategies applied in their countries, the availability of educational experience in the educational field, having experience in using educational games in the educational process, and the knowledge they possess of ways used for educational losses compensation.

Length of the Interview: The interviews have been conducted using Zoom, lasting about (60-90) minutes for each participant. All interviewees have been informed in advance. This length of time provides enough time to cover the interview and extract the necessary information. This time limit has been exceeded in many cases, due to the difficult conditions in the countries participating in the study represented because of the lack of electricity and the Internet.

Questions and Wording: Each interview guide indicates the structure and questions to be used. However, in a semi-structured interview, everything is subject to constant development. Initially, the goal is to keep the text as close as possible, including the exact wording of the questions and the predetermined sequence. Rarely does an interview keep 100% adherence to form, content, or sequence. In general, some questions (questions related to the challenges of employing educational games) have been merged. At a specific stage, probing questions have been asked to clarify incomprehensible questions to the participants as needed, according to the context of the interviewee. The interviews have been recorded, then transcribed, and drafts of the interview have been handed to the participants for verification.

Gathering and Sorting Information: During the interview, the interviewer takes notes and records details accurately. Being keenly aware of the interviewer's mood, the interviewer tries to generate sympathy and reach the interviewee in order to obtain accurate and quality information. Once the interview is over, the interviewer writes this information into the standard form, trying to record it reliably so it can be analyzed and compared.

2.4.1.2 Design and Description of the Base Script for the Interview

The script of the interview is organized into two main sections: The first section deals with the background of the interviewee (it consists of 7 questions). The second section deals with the interview questions, which consists of five sections or categories. Each section consists of several questions, with at least one considered essential, requiring an answer. In this way, the core of the preliminary questions forms the basic blueprint with which the interview must be conducted; So, the remaining questions are complementary. There are a total of 6 categories and 16 core questions. Questions can be open (free development) or closed (restricted answers).

The final script template is centralized in an online database where the interview data is stored in the Cloud in a private Drive. Thus, it cannot be hacked. This allows preserving the confidentiality of the data, so that the interview can be fed and analyzed immediately. Central dumping has proven to be a very valuable tool for an in-depth comparison and cross-over analysis of interviews. Appendix (C) shows the interview protocol.

2.4.2 Credibility and Reliability of the Interview

To ensure credibility, the interview questions have been presented to a group of (5) informed arbitrators with specialization and educational experience, who have developed the interview questions in the light of their observations. Then, two exploratory interviews have been conducted to verify the appropriateness of the questions and procedures. The data are also subjected to a process of triangulation, to verify credibility by comparing the analyses and interpretations of three researchers to the data obtained from the interviews. Their ways of viewing the results have been discussed and given meaning. This cross-checking of interpretations helps to confirm the different dimensions of the study (Alzahrani, 2020). To achieve communicative honesty, an audit of the original participants is adopted, as the data have been sent to all participants for review in order to verify the extent of their sincerity.

The validity of the study analysis is also confirmed through the analysis method that ensures theoretical saturation. This is done by examining the consistency between the data itself, as the data are collected from the participants, analysed, and compared, and duplicates are monitored until the data have reached saturation, repeating the data with

different words among the participants. Theoretical saturation is due to the existence of themes and categories, which ensures that no new category emerges (Strauss & Corbin, 1998). (Lincoln & Guba, 1985) say that there is no credibility without reliability, so guaranteeing credibility also guarantees reliability, which means that theoretical saturation also maintains the reliability of the study. The reliability also verified by conducting two interviews with three participants from outside the study sample, with a two-week interval between the first and the second time. No significant differences have appeared between their answers in the first and second time.

2.4.3 The Questionnaire

A questionnaire is built related to the role of educational games in compensating for educational losses and their impact on student's motivation towards learning in crises. The questionnaire, which consists of (3) domains and (35) items, is developed based on the opinions of the arbitrators, and the exploratory factor validity test is conducted. Appendix (D) shows the questionnaire in its initial form.

After conducting arbitration and conducting the exploratory factor analysis of the questionnaire items, the questionnaire comes out in its final form, consisting of (3) domains and (32) paragraphs. Appendix (E) shows the questionnaire in its final form. The study questionnaire in its final form consists of two parts: the first part related to the personal information associated with the study sample, and the second part consists of (32) items distributed on (3) domains. Each of the paragraphs of the second section is given weight to estimate the degree of approval or opposition according to the Likert five-point scale, where the degree (5) indicates approval to a very large degree, and the degree (1) indicates opposition to a very large degree. In order to interpret the results of the questionnaire, the following equation is used as mentioned In Qaddumi's study (2018).

Interval length = (largest value - lowest value) ÷ number of measure alternatives

Applying this equation, we find that:

The length of the interval = (5-1) ÷ 5 = 0.80, so the length of the interval is 0.80, and the explanations are as follows:

(1-1.80) (25-36%) Very low level. The item gets this degree when the teacher does not use educational games in his teaching practices.

(1.81-2.60) (36.2-52%) Low level. The item gets this degree when the teacher uses educational games in his teaching practices a little.

(2.61-3.40) (52.2-68%) Intermediate level. The item gets this degree when the teacher uses educational games in his teaching practices to a moderate degree.

(3.41-4.20) (68.2-84%) High level. The item gets this degree when the teacher uses educational games in his teaching practices to a high degree.

(4.21-5) (84.2-100%) Very high level. The item gets this degree when the teacher uses educational games in his teaching practices to a high degree.

2.4.4 Psychometric Features of the Questionnaire

2.4.4.1 Validity

The following types of validity confirm the validity of the study tool:

1. Face validity

The questionnaire's apparent honesty (the arbitrators' sincerity) is confirmed by presenting it to four arbitrators with experience in the educational field. Through the arbitration, the arbitrators have approved the amendment of some of the wordings and deleted some of the phrases that had less than 80% agreement between the arbitrators. They have added some phrases to the questionnaire. Appendix (B) shows the arbitrators who have judged the questionnaire.

2. The Internal Consistency of the Questionnaire

Through the data derived from the application of the questionnaire to the exploratory sample which consists of (66) teachers, the clarity of the scale and its expressions are ascertained. The internal consistency is also calculated through the Pearson correlation coefficient between the degree of each domain and the total degree of the scale. Table (2) below shows these results

Table (2)

The values of the correlation coefficients between the score of each domain and the total score of the scale.

Domain	First domain	Second domain	Third domain
Correlation coefficient with the total score	0.856	0.874	0.811

The results show that all the values of the correlation coefficients between the different domains and the total score ranged between 0.811 to 0.874 and they are all statistically significant at the significance level ($\alpha = 0.01$), which indicates the internal consistency between the different domains with the total score of the scale.

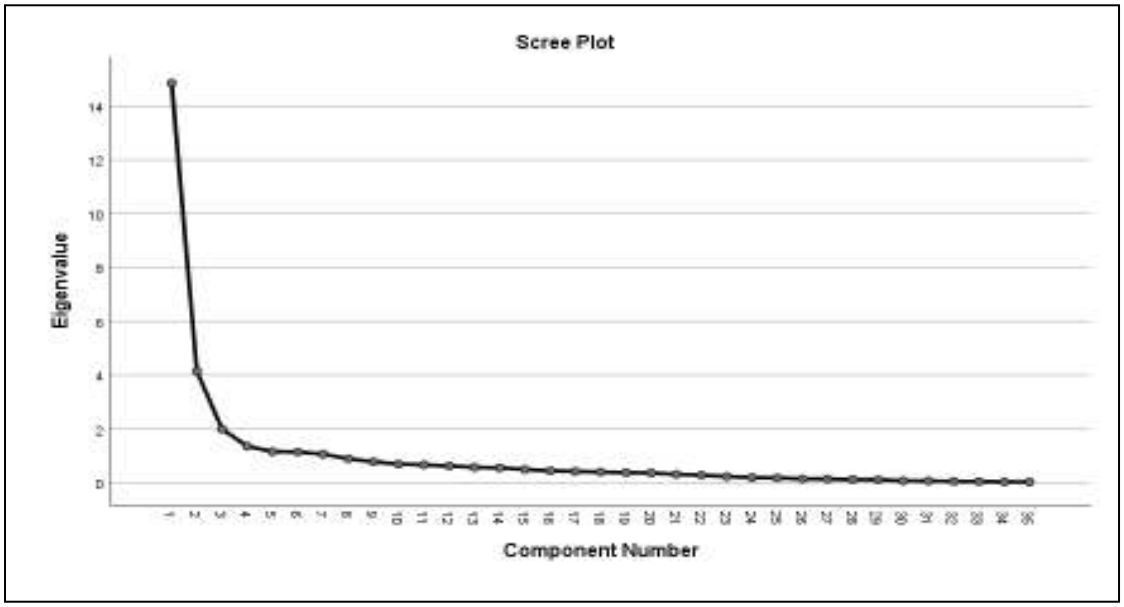
3. Factor Analysis

The suitability of the data for factor analysis is checked by the Kaiser_Meyer_Olkin & Bartlettes (KMO) test, where the value of this test is 0.828 This value indicates that the data are valid for factor analysis, and this value is statistically significant. The factor analysis has been carried out in the Principal Component Analysis method, and the factors are rotated in an orthogonal rotation in a way that maximizes the data attributed to Kaiser (Varimax with Kaiser normalization) to assume the independence of the factors. The following criteria are adopted:

- The Kaiser criterion, which is one of the most common, depends on the value of the latent root being equal to or greater than one.
- It has been taken into account that the saturation of the item on the factor is not less than 0.30 as suggested by Guildford.
- The factor is certified only if three or more items have been saturated, so factors four, five, six, and seven have been excluded for not having the required saturation.
- The Cattell criterion is based on the Scree plot. The following figure shows the graph that shows the number of the expected factors.

Figure (1)

The number of domains expected from the factor analysis of the study questionnaire



The analysis has resulted in three factors whose latent root is more than one, and these factors have explained (59.953%) of the total variance. It is worth noting that through the factor analysis ،three of the items have been deleted so that the questionnaire in its final form consists of 32 items distributed over three factors.

2.4.4.2 Reliability

To ensure the reliability of the questionnaire through the exploratory sample, the reliability coefficient has been calculated by the internal consistency method, Cronbach's alpha. The value of the reliability coefficient is 0.954 for the questionnaire as a whole, and this value is considered high, thus the reliability of the questionnaire has been confirmed for use.

2.5 Research variables

The current study, concerning a questionnaire on the role of educational games in compensating for educational losses and their impact on student motivation in crises, includes the following variables:

2.5.1 Independent variables

- The country: having four levels: (Palestine, Syria, Iraq, and Yemen).
- Gender: having two levels: (male, and female).
- The type of school: having three levels: (public, private, affiliated with UNRWA).
- Work in the field of educational loss: having two levels: (yes, no).
- The qualification: having four levels: (Diploma, Bachelor, Master, and Ph.D.).
- Specialization: having two levels: (scientific, and literary).
- Years of experience: having three levels: (less than 5 years, from 5-10 years, and more than 10 years).
- The grade level of teaching: having four levels: (from grade 1-4, from grade 5-9, from grade10-12, and more than one grade level).

2.5.2 Dependent Variables

The dependent variables in the study are the responses of the study sample to the study tool, which is the questionnaire "The role of educational games in compensating for educational loss and their impact on student's motivation in crises".

2.6 Data Analysis

To answer the study questions, the data have been processed through the following:

2.6.1 Qualitative Data Analysis

The data obtained from the participants have been subjected to analysis using the (Ary et al., 2010) data analysis model, where the model consists of three stages that start with organizing the data, then encoding and reducing it, and ending with its interpretation. The data analysis process was done manually by the researcher. The analysis process in the study has been carried out as follows:

- Organization stage: where the data collected from the participants have been organized and then reviewed for a deeper understanding of its content.
- The coding and reduction stage: where the organized data have been encoded and then reduced to obtain a deeper understanding of the different contents of the study problem. After the process of encoding all the data has been completed, the search for subjects that combine similar symbols have been carried out, and then the final subjects that answer the study questions have been identified.

- Interpretation stage: In this stage, the data have been interpreted. The similarities, differences, relationships, and correlations among the participants viewpoints have been searched in the study.

2.6.2 Quantitative Data Analysis

The Statistical Package for Social Sciences (SPSS) program is used to process quantitative data through the following:

1. Pearson Correlation Coefficient to calculate the internal consistency between the score of each domain and the total score of the scale.
2. Cronbach Alfa equation to calculate the reliability of a scale.
3. Kaiser_Meyer_Olkin & Bartletts (KMO) test to conduct the factor analysis, using the Principal Component Analysis method, and to find the variance using the Varimax with Kaiser normalization method, assuming the independence of the factors.
4. Spearman Correlation coefficient to measure the strength and direction of the relationship between the domains of the scale.
5. The non-parametric Mann Whitney *U* test for two Independent Samples and a non-parametric Kruskal-Wallis H to answer the eighth question in determining the mean differences between the responses of the study sample to the demographic study variables.

2.7 Research Procedures

The study has been conducted according to the following steps:

1. Determine the study problem and its objectives.
2. Reviewing the educational literature related to the subject of the study.
3. Determine the study questions and tools.
4. Building the interview protocol, writing its questions, and verifying its credibility and reliability.
5. Building and directing a questionnaire about the role of educational games in compensating for educational loss and its impact on motivating students in crises based on the respondents' responses through the interviews conducted with them, verifying validity and reliability of the questionnaire.

6. Obtaining a mission facilitation letter from the College of Graduate Studies at An-Najah National University, which is attached in Appendix (A). And a letter to facilitate a mission from the General Administration of Educational Studies and Research of the Palestinian Ministry of Education.
7. Identifying the participants in the qualitative interviews, and communicating with them to set the date for the interviews, and determine the number of the quantitative study sample from the four countries.
8. Distributing the questionnaire to the study sample electronically using Google forms.
9. Collecting qualitative and quantitative data using study tools.
10. Analyzing qualitative data using (Ary et al., 2010) model. Analyzing quantitative data using the Statistical Package for Social Sciences (SPSS) program.
11. Drawing results, presenting and discussing them qualitatively and quantitatively, and reaching conclusions and recommendations.

2.8 Ethical Procedures of the Research

Many ethical considerations have been taken into account during the conduct of the study, and these considerations are as follows:

- Obtaining the consent of the participants to participate in the study.
- Participation in the research is voluntary, and the participant has the right to withdraw from the study whenever he wants.
- The participant will not be subjected to any physical or psychological harm as a result of his participation in the study.
- Participants' statements, data, and identities are strictly confidential.
- The interview data will be stored on a file with a secret number that cannot be hacked.
- Quoting the participants' statements will be done by obtaining their prior permission. After the interview is completed and transcripted, it will be returned to the participants to approve the data contained therein.
- Participants will be informed of all issues related to the research and given the freedom to comment on the study.
- Participants' statements will only be used for scientific research purposes.

- This study will be conducted under the supervision of An-Najah National University.

2.9 Summary

The researcher desired to study the role of educational games in compensating for educational loss and its impact on students' motivation towards learning in four Arab countries that suffer from double crises, the Corona pandemic crisis, conflicts, and armed conflicts, in addition to the Israeli occupation of Palestine. Data was collected from educational experts from university professors, teachers, and educational supervisors through semi-structured open interviews using the Zoom application. These interviews aimed to find out the participants' views on the role played by educational games in helping students learn in crises, compensating for what they missed of knowledge and skills, and increasing their motivation towards learning in crisis in circumstances where there is almost no motivation towards learning as a result of fear and insecurity in places of war and conflict. Moreover, the interviews helped to identify the most important challenges facing the employment of educational games in these countries. They also help to explore the views of the participants on how to overcome these challenges in order to develop the employment of educational games in the future in the four countries. The credibility and Reliability of the interviews were verified, taking into account the ethical considerations of the interviews when conducted with the participants. Electronic questionnaires were also used via Google forms to measure the strength and direction of the relationship between the use of educational games and compensation for educational loss on the one hand, and the increase of students' motivation towards learning on the other hand. The validity and reliability of the questionnaire were also verified. At the end of this chapter, the methods used in analyzing the interviews and questionnaires and the procedures in which the research was carried out were presented. In the next chapter, the most important results obtained, using the research tools that have been discussed in details in this chapter, will be presented.

Chapter Three

Research Results

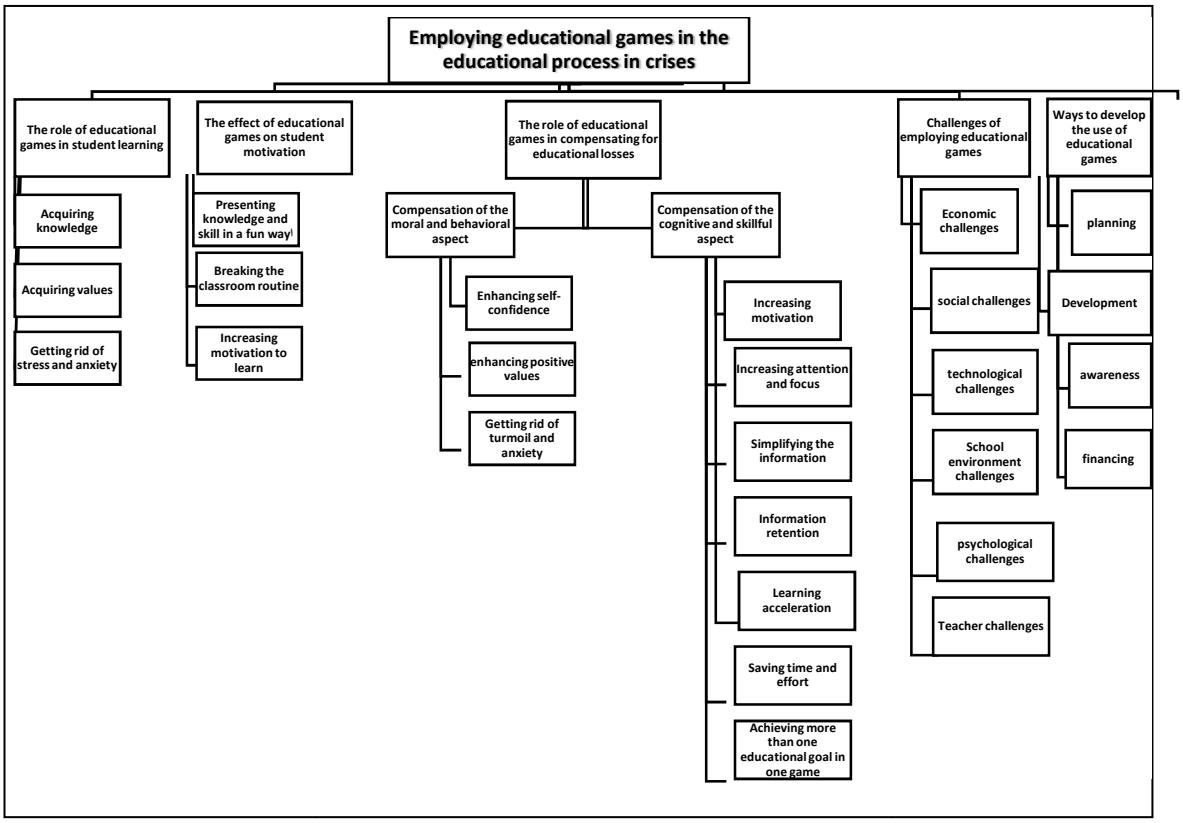
This chapter presents the results of the study emanating from the analysis of the interviews, and the analysis of the questionnaire items after processing the data statistically using the statistical package for social sciences (SPSS).

3.1 Research Results according to Qualitative Data

The results of the qualitative questions of the study are the topics that emerged from the different readings of the respondents' opinions and points of view. The results are classified as follows: the effect of educational games on student learning in crises, the impact of educational games on students' motivation towards learning in crises, the role of educational games in compensating educational loss, the challenges facing the employment of educational games in crises, and ways to develop the employment of educational games in the future. Figure No. (2) shows the results of the study.

Figure (2)

Representation of the study results through a flow chart



3.1.1 The Impact of Educational Games on Student Learning in Crises

The opinions of the participants in the study differed about the importance of using educational games in the educational process. Some of them view their use positively because of their characteristics that can help achieve effective learning. These participants have showed that educational games play a prominent role in helping the teacher and the student overcome crises. These participants from the four countries (Palestine, Syria, Iraq, and Yemen) have emphasized the importance of educational games in the educational process, especially in times of crisis. They believe that it can help to acquire knowledge, skills, and values, simplify knowledge for students in an atmosphere of fun and relaxation, and works to reduce the trauma and psychological effects that students are exposed to. This implementation of educational games can help them get rid of stress and anxiety resulting from the crises in these countries.

The participants have confirmed their views on the importance of educational games. Participant (1) from Palestine says in this regard, "As teachers or educational experts, we can notice that productive and effective learning does not reach the highest levels of harmony except when the student thinks he is playing." While participant (2) from Palestine adds, saying, "Learning through play makes the teacher move away from stagnation, sovereignty, authority, and from the familiar ways to unfamiliar ones of learning to individualize education. This means that each student learns according to his abilities." Whereas participant (20) from Syria, says in this regard, "The educational game's strategy is considered as one of the most appropriate educational strategies for learning in crises, especially digital educational games. It helps the student to learn in an atmosphere of pleasure and in accordance with his abilities." Participant (30) from Iraq stresses the role of educational games in learning, saying, "Educational games have a great role in delivering scientific material to students because they are close and harmonious with students' desires. They motivate students to study and entertain at the same time and help to modify their behavior in times of crisis." Participant (32) from Yemen adds, "We use educational games to achieve many goals, including mitigating the trauma and psychological effects that students are exposed to and proceeding with them in the educational process." Participant (32) explains, "Learning through play allows students to realize themselves, and to acquire information and skill more stably. Through play we achieve inclusiveness so that all students are participants and

contributors to the educational process. Meanwhile, it is not unilateral, meaning that some learn and others are not within teacher's attention due to the crowded classroom.”

Although most of the participants in the study have praised the promising role of using educational games in the educational process, there are still some who view their use in an unfavorable way. Despite their belief in the importance of the educational games, the reality of the situation in their countries indicates that their use is ineffective in a way that does not achieve learning goals. They believe that the use of educational games is limited to raising students' suspense at the beginning of the lesson or to being an evaluation tool used at the end of the lesson. They think that not all class students are equally involved in these games. They also stress that the educational games’ use was not realistic because teachers are not originally qualified to use them. In addition, they refer to the inadequacy of the educational environment for their use.

Participant (4) from Palestine says in this regard: “In Palestine, the teacher focuses on some unorganized individual or group games that do not achieve the goal of learning as they are used only to arouse suspense. Often the teacher uses games at the beginning or end of the lesson, either to arouse suspense or he uses them as an evaluation tool. Thus, a large section of the students does not participate in these games. Also, the questions posed to students through games measure the level of remembering and understanding and do not measure up to the higher levels of knowledge". Participant (14) from Syria asserts: "Realistically, public schools were not prepared to use educational games, especially digital games. Unfortunately, the Syrian teacher is not trained to use educational games as their use requires good planning and training." As for participant (28) from Iraq, he says: "Educational games are very important for teaching students, but they need a teacher who is able to design them and adjust them to suit for the educational situation. This teacher should be aware of the needs of his students to choose the appropriate game that links previous knowledge with new learning, taking into account individual differences among students. Therefore, the ministry should conduct intensive courses for teachers on the use of educational games to change teachers' convictions about their use.” Participant (27) argues about the difficulty of using educational games in Iraq, saying: "In Iraqi public schools, we cannot use educational games because of the overcrowding of classrooms with students, whose number reaches more than 50 students in one classroom. Thus, the classroom

environment is not adapted for the use of educational games." While the participant (32) from Yemen sees that: "In order for the Yemeni teacher to be able to employ educational games, he must have psychological, social and scientific readiness. He must as well possess the competencies and capabilities that qualify him to use them in a fair, just and purposeful manner." Participant (36) from Yemen adds, "The situation of our education is tragic. The classroom contains more than 100 students sitting on the floor, which negatively affected their learning and limited teachers' ability to transform from the traditional style of education onto more advanced ways."

The participants in the study agree theoretically on the importance of educational games in the educational process in times of crisis because they help to get rid of the psychological effects of war on them. They also can help them to learn in an atmosphere of pleasure where knowledge is brought closer to them and simplified. However, in practice and application on the ground, the difficult circumstances and repercussions these countries experienced due to the wars prevented the actual use of educational games in a way that mitigate the effects of the war and help students learn.

Hence, the participants' view from the four countries of educational games is the same. They do not disagree on their concept and the feasibility of their use, but the disagreement is on the possibility of its actual application with their students in countries that lack the basic needs for a safe life of the student and the teacher. They define educational games as purposeful activities that are designed attractively and excitingly, and are implemented individually, in pairs, or collectively according to instructions that organize the play process to reach predetermined learning outcomes. The participants' view of educational games is the same, as they do not differ on their concept and the feasibility of using them, but the difference is in the possibility of applying them realistically with their students in countries where there are no requirements for a safe life for the student and the teacher.

Participant (4) from Palestine defines it, "Educational games are a strategy that forms a link between the student, the teacher, the environment, and the curriculum. The teacher tries to harmonize them in a certain way so that they are presented to the student in an interesting way, according to a set of laws, principles, and procedures that are carried out according to exciting steps to reach the student in the end to achieve the learning goals." Participant (13) from Syria defines it, "It is a set of motor or kinesthetic sense

activities, through which concepts and ideas are communicated to students within attractive steps in the face-to-face or virtual classroom environment." Participant (24) from Iraq illustrates, "Educational games are activities that contain elements of fun, suspense, and movement that help students learn easily, according to a series of steps that are governed by the rules of the game." Participant (35) from Yemen confirms saying: "It is the exploitation of play activities of movement and fun and their employment to acquire knowledge and bring learning principles closer. Such play activities enhance values and positive behaviors."

The participants have agreed on the importance of educational games in educating students, but their opinions have varied about the educational stage in which educational games should be used and the academic subjects suitable for using educational games. Most of the participants have agreed that the educational game's strategy is suitable for teaching all subjects and for all educational stages. It is a strategy suitable for teaching young and old alike, and it is suitable for all academic subjects because it can be adapted to teach all scientific and literary subjects.

Participant (4) from Palestine states, "I can employ the strategy of educational games to teach all subjects, and it is suitable for all age groups, but it must be applied accurately." Whereas participant (16), from Syria, confirms, "The strategy of educational games is suitable for teaching all subjects, and there must be creative ways to initialize educational games for all subjects. Even digital games can be used in all subjects to attract students' attention or clarify a certain idea, and motivate and encourage students to learning". Participant (20) from Syria sees, "The strategy of digital educational games is applied to all subjects, but within three criteria: age, type of material, and the programming used in programming the digital game. Educational games are used for all ages." Participant (24) from Iraq, confirms, saying, "We can use the strategy of educational games with all academic subjects, conditioned that we use the game that suits the academic subject." Participant (28) from Iraq sees, "Educational games are suitable for teaching all educational levels, even university students. Inside each of us is a little child who loves to play and discover." Participant (40) from Yemen says in this regard, "From my point of view, I see that educational games are suitable for teaching all subjects. The teacher, in his way and experience, creates games that suit the lesson in any subject." Participant (32) from Yemen adds, stressing its use in all educational

stages, saying: "It is a strategy suitable for teaching all educational levels, but its effectiveness is most possible in the basic education stage because children are naturally inclined and instinctive to play."

A few participants believe that educational games are only limited to younger students in the basic stages or to kindergarten students. They also believe that they do not fit all academic subjects. Some of them believe that educational games are suitable for some aspects of academic subjects, or that they are suitable for scientific subjects but not for literary ones. Paradoxically, others believe that they are more suitable for literary subjects than for scientific ones.

Participant (10) from Palestine says in this regard: "The educational games strategy is suitable for teaching some aspects of the academic courses, but not the entire course." Participant (16) from Palestine adds: "The older the student becomes, the less he relies on educational games for several reasons: First, in the lower stages, education is focused on simple skills, and students acquire values and attitudes more than abstract knowledge and information. But when the student grows up, the field of play decreases. Opportunities to employ educational games are reduced, and the time available to employ them in lessons is decreased." Whereas, participant (30) from Iraq says: "In fact, educational games are widely used with students in the basic stages because they achieve learning goals with them. However, their use and impact decrease as we advance in the educational stages." Participant (11) from Syria argues: "The strategy of educational games is more suitable for scientific subjects than literary subjects. I think it is suitable for teaching younger students because it is more effective with them." Participant (35) from Yemen adds in this regard: "I believe that the strategy of educational games is suitable for teaching subjects that contain values and attitudes more than other academic subjects." While participant (32) from Yemen believes that it is a strategy that suits all academic subjects, but it is more suitable for students of the basic stages, saying: "Educational games are a strategy that suits all educational stages, but their effectiveness is more in the basic education stage because children are naturally inclined and instinctive to play."

The theoretical background and knowledge that the participants possess about the use of educational games make them confirm that they can be an active learning strategy provided that the teacher uses them appropriately in his teaching practices. Therefore,

there is no contrast in the participants' viewpoints that the strategy of traditional and digital educational games is an active student-centric learning strategy. Thus, they view them as an active learning strategy.

that shifts education from the centrality and pivotal of the teacher to learner-centered learning. This is attributed to the fact that the student discovers and produces information by getting engaged in educational games. He has the greatest role in his learning process. Participant (1) from Palestine emphasizes this, saying, “When a 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.” Whereas participant (14) from Syria, confirms that educational games are an active learning strategy, saying, “When the teacher masters the use of educational games of all kinds, it is an active strategy with the student at its center, as it involves all class students.” Participant (29) from Iraq confirms that educational games are an active learning strategy, saying, "Educational games are an active learning strategy because they are teamwork in which there is cooperation and rules for playing. The student is the one who plays and learns by himself. Such strategy makes the student the focus and center of the learning process." Participant (31) from Yemen adds, "Educational games are an active learning strategy because the student participates, works with his hands, and deduces and derives information, having the greatest role in the learning process.”

All of the participants from the four countries add that the teacher must possess a set of skills to be able to employ educational games effectively and adapt them so that they are suitable for teaching all subjects and all ages. These skills include the skill of designing and creating traditional and digital educational games, the skill of identifying students' needs, the skill of defining the goals of the game and the steps to implement it and evaluate students through it. They find that teachers should also have the ability to choose the appropriate game according to age and subject, the skill of presenting the educational game and clarifying its instructions to the students, and the skill of class and time management and distribution roles within the game. To them, the teacher should have the ability to take into account individual differences among students through educational games, communication skills, and technological skills. The teacher himself should be a good player. Participant (1) from Palestine says in this regard, “The teacher

must be able to understand the theoretical and practical framework of educational games. He should possess the skill of designing and producing educational games of all kinds such as: theater games, puppets, intelligence, mental and social games. He must also be able to manage class time." Participant (16) from Syria adds, "The teacher must possess communication skills, time management, choose the appropriate game, design games to suit the educational material and student's needs, and possess technological skills in designing digital games." As for the participant (28) from Iraq, he confirms, saying, "The teacher must have the skill of choosing the game that links the previous learning with the new learning. He should take into account the individual differences among the students." whereas participant (34) from Yemen emphasizes the skills that the teacher must have to employ educational games effectively, saying that they include: "The skill of defining the objectives of the game, good planning for its use and implementation, the skill of distributing roles among students during the game, the skill of evaluating students' performance through the game, and the skill of solving conflict and class management."

Despite the participants' conviction of the usefulness of teachers' use of educational games through their possession of a set of skills and competencies, the reality of the situation reflects that teachers do not possess these skills. They, therefore, need training and qualification to create, design, use, and adapt them to suit the teaching of academic subjects and different educational stages.

In this regard, participant (2) from Palestine says: "Teachers' ability to use educational games varies because using them is not a general culture among teachers and is not an official educational approach. They are individual practices for some teachers, and therefore teachers do not have sufficient readiness to implement this strategy." Participant (5) from Palestine adds: "Teachers do not have a digital culture. They use ready-made games from the Internet without adapting them to serve the learning goals. Our teachers are consumers of technology and not producers of these games. I believe that teachers should have the ability to design educational games. We need a general culture, educational vision, and policies so that teachers can use educational games, especially digital ones." Participant (11) from Syria says: "The Syrian teacher is diligent and creative, but the use of modern education strategies, such as the strategy of educational games, requires an appropriate educational environment. The classrooms

are crowded with students, which makes the teacher resort to traditional methods of education." While participant (21) from Iraq explains the reason why the Iraqi teacher does not use educational games, saying: "The Iraqi teacher suffers from the lack of material resources and the poor technological skills. Many teachers cannot use computers. Besides, the large number of students in small-sized classrooms is considered as one of the biggest challenges of using educational games." Participant (35) from Yemen explains the situation of the Yemeni teacher in using educational games, saying: "Unfortunately, there was no space for such strategies in education, but through the attempt of compensatory education, some educational games were used to compensate for the students' missed knowledge and skills. They were used to improve the psychological health of the students. This was the result of an urgent need. In short, educational games were used through self-efforts by the teachers and not within systematic plans by the Yemeni Ministry of Education."

The ability of the four countries in dealing with educational crises resulting from the political and economic conditions have differed. Palestine has maintained a certain level of education for its children despite the occupation and the obstacles it imposes on education. This is due to the high percentage of learners in Palestine, especially among mothers, which helps the continuity of the learning process in times of crises that Palestine has experienced for decades. It is associated with the support of parents to their children's education. In this regard, participant (8) from Palestine says, "Palestine is under occupation, but we have a peculiarity, that our education rate is very high, and the percentage of educated mothers is also high. Therefore, the schools' cooperation with parents and the existence of educational policy and decisions have facilitated the transition to distance learning. This has reduced the existing problems, though cannot completely negate them". However, the low motivation of students, their absence from attending schools for many years in war zones, the poor electricity and internet situation, and the lack of books required for students, have a significant impact on the continuity and efficiency of the educational process in times of crises in Syria.

Participant (16) from Syria says, "In Syria, we suffer from a shortage of books that must be available to students, The deteriorating condition of the books that students use for study, and the weak motivation of students to learn as a result of wars, insecurity, and difficult economic conditions make our biggest challenges." Participant (17) from Syria

adds, "Education was not as it should be due to poor electricity and Internet. We always suffered lack of Internet accessibility to the countryside. The closure of schools for long periods in war zones, the displacement of residents to safe areas after a long period of interruption from education, the lack of parents' interest in educating their children, in addition to the psychological problems that students were suffering from, all have made education of less quality". In Iraq, the transition to e-learning was difficult during the pandemic, due to the confusion of the Ministry of Education. The failure to adopt a single platform, the poor economic conditions, and the weakness or lack of the Internet in some areas have complicated this transition. In this regard, participant (24) from Iraq states, "The Ministry of Education closed schools at the beginning of the crisis and issued several decisions that mandated education through the following platforms: Newton, Zoom, Google Meet, electronic class, Telegram, and WhatsApp in order to deliver the educational material. However, students did not respond fully due to their lack of motivation to learn and the lack of devices and the Internet necessary for the transition to distance learning".

In areas of conflict and war, education has been the biggest victim of these conflicts. The schools were almost completely closed for several years in these areas, without students receiving any kind of education or even switching to e-learning. Mainly, this was due to the lack of Internet in war zones. Participant (29) from Iraq confirms this, saying, "There was no studying in conflict areas for almost three years during the conflict. There was no kind of learning, as there was no Internet, and accordingly we were isolated from the world." As for Yemen, it has suffered from the division of the country as a result of the war, and thus the division of the authority supervising education as well. This has unfortunately led to duplication of educational policies and decisions, which led to achieving the minimum educational goals. Participant (35) emphasizes the poor situation of education in Yemen, saying, "The problem of Yemeni education is great as a result of the war and the division of the country. Some educational institutions are internationally recognized while many others are not. The division of the educational institutions has created imbalance in policy-making and caused the educational process to remain at a minimum level. There were no real treatments that the Yemeni could rely on. Rather there was compensatory education, which is a process of merging and reducing the educational content by focusing on the

most important skills that the student can acquire. This has reduced some stages so that the student does not stumble and remains in the same educational stage for many years".

3.1.2 The Effect of Educational Games on Students' Motivation towards Learning in Crises

Educational games provide an attractive learning environment for students and work to increase their achievement in their various learning styles (Yıldız, 2021). The participants unanimously have agreed on the importance of motivation in the occurrence of learning because it contributes to the continuity of learning and to the achievement of its goals. It is the basis that motivates students to learn.

The participants from the four countries possess the same concept of motivation to learn and agree on the characteristics of educational games and their impact on students' learning by creating a motivation towards learning. Therefore, all participants have similar views on the concept of motivation to learn where they define motivation as a desire that drives students to learn.

Participant (8) from Palestine defines it as, "It is something that motivates a student to do an action or reaction to a specific thing." In the opinion of participant (17) from Syria, the motivation is, "the desire and enthusiasm to acquire knowledge and study." As for participant (21) from Iraq, motivation is seen as, "an underlying force within the student that pushes him to learn and directs his behavior." In addition, participant (37) from Yemen defines it as: "internal or external desires that drive the learner's behavior to learn and reach a specific goal."

Focusing on the effect of educational games on students' motivation towards learning, the participants consider them a prerequisite for learning to occur. They believe 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 knowledge exchange 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, participant (4) from Palestine argues, "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.” Participant (10) from Palestine confirms that motivation is a prerequisite for learning to occur, saying, "There are two prerequisites for learning to occur: willingness to learn and motivation." Participant (15) from Syria adds in this regard, saying, "Educational games have a strong effect as they stimulate attention and focus, and increase students' activity to the maximum extent in acquiring knowledge. They stimulate knowledge exchange between students and increase their academic achievement." While participant (22) from Iraq says, "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." Participant (35) from Yemen also stresses the importance of educational games in increasing motivation for learning, saying, "Educational games play a major role in increasing students' motivation towards learning by giving them space for recreation, expression of their potential, venting pent-up feelings, and foster students' love for school and study by presenting information in an easy and fun way."

Teachers believe that students are not motivated to learn if a set of conditions are not met. These conditions are summarized by the participants in: providing a rich and safe learning environment, designing learning according to students’ characteristics, learning styles, psychological and social needs, linking learning to the realities of life, employing technology in learning, and diversifying the teaching strategies that are used by teachers. Add to this the teacher's belief in his role in educating his students and bringing about social change.” Participant (1) from Palestine reports in this regard, saying: "In order to motivate students to learn, we must provide a safe and attractive learning environment for them. Education must be designed according to students' characteristics, learning styles, and their psychological and social needs." While participant (17) from Syria says: "What motivates students most to learn is the provision of the necessary tools and means to deliver information to students, the teacher's use of reinforcement, diversification of teaching strategies, and the teacher's passion and love for his profession." As for participant (28) from Iraq, he says in this regard: "Learning must be linked to practical life and its experiences. We should also diversify the use of educational strategies, and the teacher should possess the knowledge of students' psychological needs so that we can motivate students to learn." Participant (35) from Yemen adds, "How do we stimulate students' motivation towards learning? This

depends on the teacher's competencies, the availability of material and technological resources in the learning environment, and psychological, spatial, and social preparation."

Unfortunately, the security, political, economic, and social conditions prevent the availability of these conditions in the learning environment in these countries, in which wars have affected all aspects of life.

Students in the four countries suffer from low motivation to learn as a result of the difficult conditions they live at all stages in these countries, especially in Syria, Iraq, and Yemen, more than in Palestine. This is attributed to the lack of desire to learn due to the difficult political and economic conditions in these countries. The overcrowding of classrooms with students in Syria, Iraq, and Yemen as a result of displacement to safer places have negatively affected students' motivation towards learning. Participant (19) from Syria says, "Students' motivation to learn in Syria is zero, especially in war zones, as there is no desire to learn. If this desire exists, it is due to external stimuli such as fear of parents." participant (27) from Iraq says, "The students' motivation decreases because of the crowded classrooms, coronavirus, wars, and distraction created by the use of smart devices." Participant (34) from Yemen, confirms the reasons that cause low motivation for students to learn, saying: "The Yemeni student shows low motivation to learn because of his inability to enroll in schools, whether physically or mentally. This is because of the war or for reasons of living, or because students are weak in obtaining the basics of learning." Finally, participant (40) from Yemen says in this regard, "The lack of motivation among Yemeni students leads to their dropping out of school."

3.1.3 The Role of Educational Games in Compensating the Educational Loss

The issue of educational loss is one of the important issues that threaten the efficiency of educational systems (Mashi, & Al-Otaibi, 2021), which the teacher must seek to solve by using various educational strategies, digital means, and effective digital participation (Kashefpakdel et al., 2021). This explains the participants unanimous agreement that when the students' motivation and enthusiasm for learning is high, they show more readiness to search for and acquire information through play that combines fun and learning together simultaneously. The participants have emphasized the importance of educational games in compensating for educational loss. The concept of

educational loss does not differ from one country to another, especially in countries that suffer from crises and wars. This has negatively affected the educational process in them. The educational loss is considered as a loss in students' basic knowledge and skills that they need to continue their learning in the later stages. It is also a loss of some values as a result of the isolation and violence that students are exposed to during wars.

The participants define the educational loss as a decrease in students' learning levels. In other words, it is the gap between what students are expected to learn in a specific period and what they have actually learned as a result of certain circumstances in this period. Participant (3) from Palestine defines it as, "a cognitive, skill, social and behavioral loss that negatively affects students' subsequent learning." Whereas, participant (20) from Syria defines it as, "the knowledge and skills that students missed during a certain period as a result of certain circumstances, especially the basic skills and knowledge." Participant (14) from Syria confirms this, saying, "The educational loss is the gap between the inputs and the outputs in the learning process." As for participant (29) from Iraq, he defines it as, "the sum of the skills and knowledge that a student must possess at a certain stage, but for some reason, he could not possess it. So, it is a knowledge gap between what should be learned and what has actually been learned." Participant (33) from Yemen views the educational loss as, "the gap that occurred between what the student was expected to obtain and what he obtained in reality. To make it brief, it is the general loss of knowledge, educational skills, ideas, abilities, and skills expected to be acquired by the student." Participant (40) from Yemen adds, "The educational loss in Yemen was twofold, a complete loss and a relevant loss. The complete loss is leaving schools due to living conditions because of wars or insecurity. However, the relative loss occurs due to wars, as education stops for some time for several months, so the student acquires incomplete knowledge."

The Participants believe that educational games in the ideal situation can properly compensate for the educational loss.

The participants have agreed that it is possible to compensate for the educational loss by using educational games that compensate for the cognitive and skill loss by increasing students' motivation towards learning, increasing their attention and focus in the classroom, accelerating the learning process, and shortening time and effort used in learning. Achieving more than one educational goal using one game, simplifying the

information and helping the student to retain it in long-term memory would also compensate for this loss. Educational games also work to compensate for the behavioral and value loss resulting from crises by teaching students values along with information through educational games, promoting positive behaviors, enhancing student self-confidence, and helping students to get rid of psychological disorders resulting from wars and crises. Participant (4) from Palestine confirms this, saying, "Educational games work to 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 focusing only on the knowledge but rather on the skills, values, and attitudes that the student acquires through learning through play." Participant (1) from Palestine, confirms this, saying, "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.". As for participant (8) from Palestine, he argues, "I believe that educational games reduce the period required for learning, increase student engagement, promote positive values and behaviors among them, and achieve the intended educational goals and outcomes, provided that there is good planning and implementation of the use of educational games."

In this regard, participant (14) from Syria says, "Educational games are good in implementing the lesson, achieving one or two goals, and can stimulate students' motivation towards learning and motivate them to continue. It is a very strong motivator for learning, revitalizing information review, and increasing students' academic achievement." Participant (16) from Syria confirms, saying, "Choosing the appropriate game for teaching the concept or skill helps to compensate for the educational loss because it motivates students to learn, in less time and effort, and in compensating for more than one skill or information at the same time."

In the same manner, participant (23) from Iraq says, "Educational games shorten the time, and through them, it is possible to teach and review more than one concept at a time." Participant (30) from Iraq says, "From my point of view, I see that educational games compensate for what students lost by shortening the time and adding an element of fun that increases students' enthusiasm for learning. 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 era of technology."

The Participants from Yemen emphasize the role of educational games in compensating for educational losses. Participant (34) argues, "If educational games are used in a deliberate and planned manner and with a specific methodology and mechanism, it will be of great benefit, because teaching students in wars generally creates boredom. Educational games enhance confidence and emotional control and calm the psychological disorders, resulting from the war and bad economic situation. This makes the student more ready and receptive to learning. Social and family games work to enhance compensation for the student's lack of values."

On the other hand, the participants believe that in their countries that suffer from weak capabilities and resources, and in light of wars that have drained the human and economic forces in them, the minimum requirements for face-to-face and e-learning education are not available. They find that students do not obtain their right to learn in a safe, risk-free environment suitable for learning. The participants report in this regard that education in their countries does not have an environment for its occurrence, nor to compensate for the knowledge and skills that students missed, believing that the war left no room for compensatory education. Participant (5) from Palestine says in this regard: "There was confusion in dealing with the educational loss at the beginning because the educational situation requires the presence of a learner, a teacher, and an appropriate educational infrastructure. This was not available in most schools as e-learning suffers from the weakness of the Internet in some areas, and thus, the transition to e-learning was not of a great value in compensating for the educational loss." Participant (19) from Syria adds: "During times of war, schools were closed and then reopened after the war stopped. This made education suffer from a state of chaos and the danger of shooting students and teachers. Therefore, the attempts to compensate for the educational loss were modest and poor. Education in Syria faces critical challenges such as: continuous power and internet outages, the high cost of living, in addition to the deplorable health situation resulted from the accumulation of waste." As for participant (30) from Iraq, he argues in this regard, saying: "The situation of Iraq is different from the rest of the countries because of the political change that coincided with the lack of security, the armed conflicts, the plurality of parties and the conflict among them. This made Iraq

live the shock of double ideas and standards, leading to confusion and lack of psychological, economic and social stability, which negatively affected education in Iraq. All this made parents take care of providing study requirements for their children, and as a result, many Iraqi families refrained from educating their children and instead sent them to work. Bombings and terrorism at the gates of schools also had a major role in the reluctance to learn." Participant (40) from Yemen adds: "The educational compensation programs did not cover all parts of Yemen. The teaching of many students took place in schools that were not equipped for education for the displaced such as camps, or inside mosques."

In relation to the employment of digital educational games. Participants believe that they play an important role in helping to compensate for educational loss. Whereas, participant (2) from Palestine argues, "Digital educational games are popular with the technological generation, as they meet their technological needs and work to accelerate education to compensate for the educational loss by reducing time and effort. Digital educational games shorten time and effort in obtaining knowledge and skills." As for participant (18) from Syria, he adds in this regard, "Educational games attract students, especially digital ones, towards learning. They attract students and motivate them to learn, and help to retain information in long-term memory." Participant (28) from Iraq adds that it increases attention, focus, and academic achievement, saying: "From my point of view, digital educational games stimulate focus, increase attention, help meditation and thinking, increase academic achievement, and create the desire to obtain information. They can keep the student away from boredom and help him to compete with his colleagues, which pushes him to improve his performance." Whereas participant (35) from Yemen, adds in this regard, “Digital educational games contribute to accelerating the acquisition of knowledge because they collect knowledge and skills in the form of games that are attractive and interesting and have the element of competition. This helps to compensate for the skills and knowledge that students missed. Digital educational games are a catalyst for compensating for the lost skills.

The participants in the study argue that digital educational games lose their ability to contribute to compensate for educational loss if the appropriate educational and physical environment is not available for their use. Participant (1) from Palestine says in this regard: " There are many factors that have negatively affected the use of digital

educational games in face-to-face and e-learning. These factors include the limited use of technology in face-to-face learning in an effective way, the inability of all educational staff to have the necessary skills for digital transformation and the use of digital educational games, and the weak or non-existent speed of the Internet in some schools. Add to this, the small number of computers, software, and latest technologies needed for teachers and students. As for the participant (20) from Syria, he says: "Unfortunately, in Syria, there is no willingness or training to use digital educational games, especially in times of crisis." Participant (30) from Iraq confirms the inability of the Iraqi teacher to employ digital educational games in his teaching, saying: "The Iraqi teacher was not ready to deal with the crisis or deal with smart devices. He was not skillful enough to use digital educational games to teach his students or compensate them for the knowledge they have missed." While participant (34) from Yemen stresses the lack of readiness of the Yemeni teacher and the unsuitability of the Yemeni educational environment to use digital educational games, saying: "There is no willingness among teachers to use digital education. The culture of digital education was completely missing. Besides, the Yemeni teachers lack many skills like the technology adaptation needed to use digital educational games. Hence, digital education was not widely used in Yemen, but it was rather an individual effort of some teachers."

3.1.4 Challenges of Employing Educational Games

Employing educational games in developing countries such as Palestine, Syria, Iraq, and Yemen, which suffer from many crises that put them in a difficult economic, social and political situation, face many challenges. The study participants have pointed out a set of challenges. They have specified the social challenges that are related to the decline in the status of the teacher, especially in Iraq and Yemen. The financial and economic challenges, according to them, are represented in: the poor financial condition of the teacher and the learner, the inability to provide smart devices, tools, and materials necessary for learning in crises, weak Internet networks, and continuous power outages. However, the technological challenges include weak technological infrastructure and a lack of technological expertise among many teachers. School environment challenges embody the lack of readiness in schools to use educational games, especially digital ones, and the overcrowding of classrooms with students. Other challenges are related to the extent of teachers' and schools' readiness, willingness, and efficiency in employing

educational games, such as teachers' poor skills in dealing with educational games, producing them, designing them, and adapting them for different subjects. Some challenges are associated with the parents' negative view of using educational games in the educational process, and the teacher's lack of conviction of the feasibility of using this strategy, especially in Syria, Iraq, and Yemen. The researchers believe that developing countries in general, and those that fall under crises in particular, suffer from a lack of funding that affects the outcomes of the educational process greatly. Funding is needed to equip the necessary infrastructure for education, give teachers their salaries, and fund the courses necessary to qualify teachers for education in crises. Funding is also necessary for the employment of active strategies such as the strategy of educational games. In addition to the previous challenges, the psychological challenges result from the practices of the occupation against students and teachers alike in Palestine. Wars in the conflict zones in Syria, Iraq, and Yemen have greatly created psychological challenges. Occupation and wars have left their effects on students and their motivation towards learning.

Participant (4) from Palestine summarizes these challenges, saying, “These challenges are summarized in the technological and physical infrastructure and their lack of availability for all teachers with the same quality. Schools are not prepared. Teachers need training that qualifies them to deal with e-learning resources in terms of design and application in a manner that commensurate with educational situations. The weakness of the Internet and the poor financial condition of the teacher prevent the optimal use of this strategy.” Participant (3) from Palestine confirms these challenges, saying, “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 poor psychological condition of students as a result of the occupation practices against students and teachers, are among the most important challenges.”

Participant (17) from Syria has summed up these challenges, saying: "The challenges are represented in the lack of materials and tools, the teacher's lack of skill in adapting educational games for different subjects, the weakness of the Internet needed for digital educational games, the teachers' lack of technological experience, and the lack of devices. Furthermore, the different habits and traditions among the Syrian regions affect education and the use of educational games at the time of displacement from war zones

to safe areas. Add to this the negative view of parents on the use of educational games." Participant (20) from Syria added, "The poor financial condition of the learner and the teacher, weak internet, power outages, high prices of devices, the infrastructure of educational institutions in terms of curricula, training, and guides for using educational games, and the overcrowding in classrooms with students have created the biggest challenges. The blockade imposed on Syria has complicated and maximized these challenges."

Participant (28) from Iraq sums up these challenges, saying, "The lack of the necessary infrastructure to use digital educational games, the weakness of the Internet, the lack of it for some students and teachers, the lack of smart devices, the large number of students in the classroom, and the difficult economic situation of the Iraqi teacher form the biggest challenges during the crises." Participant (22) from Iraq adds, "Iraqi education suffers from poor material capabilities and academic qualifications of teachers such as digital skills. Many cannot use computers and schools do not provide smart devices for teachers such as computers. The local community is cooperative and seeks to provide devices for schools, but the Ministry's decisions do not support the community aid. The large numbers of students and their overcrowding in small classes are also among the biggest challenges to using the educational game's strategy."

In regard to the challenges facing the employment of traditional and digital educational games in Yemen, participant (34) sums them up as follows, "These challenges are represented by the teacher's conviction of this strategy, the school administration's negative view of this type of education, and the teacher's lack of skills to use learning by playing. Teachers rather depend on traditional education strategies. In addition, poor planning and poor selection of the game, especially in the presence of an unsuitable physical environment, are considered obstacles to the effective use of this strategy. In terms of using digital educational games, we lack electronic devices, we suffer from weak internet, and the teachers are unable to deal with digital programs and games." Participant (37) from Yemen adds, saying, "The Yemeni teacher's salary is not enough, as he faces difficult economic challenges due to the high cost of living compared to the low wages that the teacher receives. The Yemeni teacher also suffers from social challenges as a result of the war, causing a significant decline in the status of the teacher. Other challenges include the necessity of infrastructure to implement the

activities, and the urgent need to qualify and train teachers to employ this strategy." Participant (38) from Yemen adds the following challenges, "The high density of students inside the classroom constitutes an obstacle to the use of educational games. The weakness and lack of training and qualification of teachers to use this strategy prevent its effective use in the Yemeni educational environment. Yemeni education also suffers from the lack of a suitable climate for teachers and the lack of having suitable environment for using games in terms of capabilities and tools. One of the biggest challenges facing the use of educational games is the teacher's lack of conviction and belief in the importance of this strategy. Besides, some parents have a negative view of the use of educational games, and consider it a waste of time."

3.1.5 Ways to Develop the Use of Educational Games

It is possible to try to overcome these challenges from the point of view of the participants in the study by providing the necessary funding sources for employing educational games, preparing plans to employ them effectively in the teaching process, strengthening the infrastructure in schools, developing electronic educational platforms, and activating digital educational games sites for teachers. Moreover, developing curricula in line with the use of educational games in them, raising the capabilities of educational staff, and developing their capabilities in designing and employing educational games would also help overcome the challenges. The professional development may be achieved through a partnership with universities that enable students at teacher education programs to understand and apply the strategy of educational games, especially digital ones. Such partnership would allow training teachers to use educational games in the classroom through seminars and training courses. It also aims to educate parents about the importance of educational games in the educational process, especially in times of crisis.

In this regard, participant (3) from Palestine proposes, "I suggest developing the technological infrastructure necessary for education, developing the skills of teachers necessary to use educational games, and improving the economic situation of the teacher. I also recommend that the Ministry of Education holds training workshops for teachers related to the use of educational games, how to design them to suit the subject of the lesson and the age group of students. Besides, they train teachers to design educational games that develop motivation and help to acquire knowledge and rid

students of stress and anxiety, especially in emergency circumstances. I also recommend to carry on advanced and good planning for the use of educational games systematically in the educational process."

Participant (17) from Syria recommends, "I recommend training teachers on education in crises and having good planning for it by the Ministry of Education. I also recommend strengthening the internet and electricity, developing teachers' technological capabilities, and educating parents about the importance of educational games and their role in educating their children in times of crisis." Participant (16) from Syria adds, "Teachers must be trained and qualified to use digital educational games, books should be printed in sufficient numbers for students, the number of students should be reduced in classes, and teachers' income should be raised." Participant (18) adds in this regard, saying, "We must cooperate with the faculties of education in universities because of their role in how to teach the student teacher how to use this strategy effectively."

Participant (23) from Iraq says, "I recommend improving teachers' salaries and introducing teachers to courses on modern educational strategies, including educational games. It is important to spread the culture of educational games among school principals and parents, convincing them that it is not a waste of time. I believe the ministry should keep pace with modernity and develop teachers' technological capabilities." Whereas participant (28) from Iraq adds, "I recommend to carry further research in the field of employing educational games and providing free digital educational games sites for teachers that can be used and adapted for various academic subjects."

Participant (31) from Yemen suggests, "First, a safe and attractive educational environment must be provided for students. Support should be provided from the Ministry of Education in coordination with organizations in restoring and increasing the number of classrooms in many schools. The problem of displacement from conflict areas to safe governorates should be solved. Secondly, supplies should be provided for teaching, whether for the teacher or the student, such as books and teaching aids. Third, school administrations should implement extra-curricular activities that are absent in most government schools, encourage students to self-learning, and direct them towards optimal use of the computer in a way that serves the educational curriculum and general culture. Fourth, new education methods should be used, teachers should be trained on

the psychology of play in education, and individual differences among learners should be taken into account through educational games. Adopting educational games by the Yemeni Ministry of Education should be systematic. Necessarily, teachers' guide for the use of these games should be provided. Teachers training courses should be given on how to use educational games in a way that achieves learning goals. ". Participant (40) from Yemen recommends, saying, "I suggest training and qualifying teachers and improving their living. I recommend that the Ministry of Education finds an assistant guide for the teacher to suggest some traditional and digital educational games, showing how to employ them. I also recommend the ministry updates the curricula to cope with crises, and makes a specialized team to deal with crises that can prepare and develop curricula. We should take care of the teachers by all means, mainly by increasing their salaries. We encourage teachers to show dedication in their work and to work to develop themselves in the field of educational games. Finally, we encourage parents to cooperate with the teachers."

3.2 The Result of the Study Related to the Quantitative Data

3.2.1 Results Related to the Sixth Question

Is there a statistically significant correlation at the level of significance ($\alpha = 0.05$) between employing educational games and compensating educational losses in Palestine, Syria, Iraq, and Yemen in crises?

To answer this question, the relationship between employing educational games and compensating educational loss is investigated using the alternative non-parametric Spearman's test instead of the parametric Pearson test because of the violation of the normal distribution assumption and the presence of outliers, the assumptions tests are shown in appendix (G). Results are shown in table (3) and interpreted according to the correlation significant value at the 0.01 level and 0.05 levels. Cohen's standards are also used to evaluate the strength of the relationship where coefficients between 0.10 - 0.29 represent a small association, coefficients between 0.30- 0.49 represent a moderate association, and coefficients above 0.50 represent a large association (Holmes et al., 2019).

Table (3)

Examination of the correlation between employing educational games and compensating educational loss

Correlations				
			M_Using_ EG	**M_Compensating _EL**
Spearman's rho	M_Using_EG	Correlation Coefficient	1.000	.778**
		Sig. (2-tailed)	.	.000
		N	420	420
	M_Compensating_ EL	Correlation Coefficient	.778**	1.000
		Sig. (2-tailed)	.000	.
		N	420	420

** Correlation is significant at the 0.01 level (2-tailed).

The results of table (3) indicate that there is a strong, positive correlation between employing educational games and compensating educational loss, $r_s(420) = 0.778$, $p < 0.05$.

When conducting Spearman's coefficient correlation test to investigate the relationship between employing educational games and compensating educational loss for each country separately, the result of these tests are shown in appendix (H). It appears that there is a moderate, positive correlation between employing educational games and compensating educational loss in Palestine, $r_s(109) = 0.470$, $p < 0.05$. Whereas there is a strong, positive correlation between employing educational games and compensating educational loss in Syria, $r_s(100) = 0.817$, $p < 0.05$. Also, there is a strong, positive correlation between employing educational games and compensating educational loss in Iraq, $r_s(109) = 0.750$, $p < 0.05$. And there is a strong, positive correlation between employing educational games and compensating educational loss in Yemen, $r_s(102) = 0.906$, $p < 0.05$.

3.2.2 Results Related to the Seventh Question

Is there a statistically significant correlation at the level of significance ($\alpha = 0.05$) between employing educational games and increasing motivation towards face-to-face and e-learning in Palestine, Syria, Iraq, and Yemen in crises?

To answer this question, The relationship between employing educational games and increasing motivation towards face-to-face and e-learning is investigated using the alternative non-parametric Spearman's test instead of the parametric Pearson test because of the violation of the normal distribution assumption and the presence of outliers. Results are shown in table (4)

Table (4)

Examination of the correlation between employing educational games and increasing motivation towards face-to-face and e-learning

Correlations

			M_Using_EG	M_Effect_EG_ Motivation
Spearman's rho	M_Using_EG	Correlation Coefficient	1.000	.774**
		Sig. (1-tailed)	.	.000
		N	420	420
	M_Effect_EG_ Motivation	Correlation Coefficient	.774**	1.000
		Sig. (1-tailed)	.000	.
		N	420	420

**. Correlation is significant at the 0.01 level (1-tailed).

Results of table (4) indicate that there is a strong, positive correlation between employing educational games and increasing motivation towards face-to-face and e-learning, $r_s(420) = 0.774$, $p < 0.05$.

When conducting Spearman's coefficient correlation test to investigate the relationship between employing educational games and increasing motivation towards face-to-face and e-learning for each country separately, the result of these tests are shown in appendix (H). It appears that there is a strong, positive correlation between employing educational games and increasing motivation towards face-to-face and e-learning in Palestine, $r_s(109) = 0.650$, $p < 0.05$. Whereas there is a strong, positive correlation between employing educational games and increasing motivation towards face-to-face and e-learning in Syria, $r_s(100) = 0.821$, $p < 0.05$. Also, there is a strong, positive correlation between employing educational games and increasing motivation towards face-to-face and e-learning in Iraq, $r_s(109) = 0.705$, $p < 0.05$. And there is a strong, positive correlation between employing educational games and compensating educational loss in Yemen, $r_s(102) = 0.864$, $p < 0.05$.

3.2.3 Results Related to the Eighth Question

Are there statistically significant differences at the level of significance (α = 0.05) between the average teachers' use of educational games due to the variables (country, gender, type of school, work in the field of educational loss, educational qualification, specialization, years of experience in education, and the educational stage taught by the teacher)?

To answer this question, a non-parametric Mann Whitney *U* test is used instead of the parametric independent T-test, and Kruskal-Wallis H test is used instead of the parametric One-Way ANOVA test because of the violation of the assumptions of normal distribution.

3.2.3.1 Section One of the Eighth Question

Are there statistically significant differences at the level of significance (α = 0.05) between the average teachers' use of educational games due to country?

To answer this question, a non-parametric Kruskal-Wallis H test is used instead of the parametric One-Way ANOVA test because of the violation of the assumptions of normal distribution of using the educational games regarded to country variable and the presence of extreme values. Results are shown in table (5).

Table (5)

Examination of the differences between employing educational games due to country variable

Test Statistics[a,b]	
	M_Using_EG
Kruskal-Wallis H	31.324
Df	3
Asymp. Sig.	.000

a. Kruskal Wallis Test b. Grouping Variable: country

A Kruskal-Wallis H test is conducted to determine whether there is an effect of country on the level of using educational games in the educational process. The results indicate that there is statistically significant difference among the four countries in using educational games, H (3) = 31.324, p =.000

A Post-hoc test is used to determine which country is differs. The result shows the difference is between Palestine (*M* rank = 234.73) and Syria (*M* rank = 174.76) for Palestine. And there is difference between Syria (*M* rank = 174.76) and Iraq (*M* rank = 249.08) for Iraq. Also, there is difference between Yemen (*M* rank = 178.42) and Palestine (*M* rank = 234.73) for Palestine. And there is difference between Yemen (*M* rank = 178.42) and Iraq (*M* rank = 249.08) for Iraq. Whereas there are not statistically significant differences between Yemen and Syria, or between Palestine and Iraq.

3.2.3.2 Section Two of the Eighth Question

Are there statistically significant differences at the level of significance (α = 0.05) between the average teachers' use of educational games due to gender?

To answer this question, a non-parametric Mann Whitney *U* test is used instead of the parametric independent T-test because of the violation of the assumptions of normal distribution of using the educational games regarded to gender variable and the presence of outliers. Results are shown in table (6)

Table (6)

Examination of the differences between employing educational games due to gender variable

Test Statistics[a]	
	M_Using_EG
Mann-Whitney U	17564.500
Wilcoxon W	28590.500
Z	-2.163
Asymp. Sig. (2-tailed)	.031

a. Grouping Variable: gender

To evaluate the differences between male and female for using educational games, Mann Whitney *U* test is utilized. The test reveals that using educational games is significantly lower in the male group (*Md* = 4, n = 124) compared to the female group (*Md* = 4, n = 272) *U* =17564.5, *Z* = -2.163, *p* =.031.

When conducting Mann Whitney *U* test to compare the usage of educational games for male and female respondents for each country separately, the result of these tests are shown in appendix (I). It appears that there are no significant differences between males

and females in using educational games in Palestine (p =.497), Iraq (p =.430) and Yemen (p=.157). Whereas in Syria the test reveals that using educational games is significantly lower in the male group (Md = 3.5556, n =35) compared to the female group (Md = 4, n =65) U = 802, Z = -2.431, p =.015.

3.2.3.3 Section Three of the Eighth Question

Are there statistically significant differences at the level of significance (α = 0.05) between the average teachers' use of educational games due to type of school?

To answer this question, a non-parametric Kruskal-Wallis H test is used instead of the parametric One-Way ANOVA test because of the violation of the assumptions of normal distribution of using the educational games regarded to type of school variable and the presence of extreme values. Results are shown in table (7).

Table (7)

Examination of the differences between employing educational games due to type of school variable

Test Statistics[a,b]	
	M_Using_EG
Kruskal-Wallis H	6.959
Df	2
Asymp. Sig.	.031

a. Kruskal Wallis Test b. Grouping Variable: School type

A Kruskal-Wallis H test is conducted to determine whether there is an effect of school type on the level of using educational games in the educational process. The results indicate that there is statistically significant difference between the three groups in using educational games, H (2) = 6.959, p =.031

A Post-hoc pairwise comparisons test is used to determine which group is differs. The result shows the difference is between UNRWA schools (M rank =161.50) and public schools (M rank =209.91) for public schools. And there is difference between UNRWA schools (M rank =161.50) and private schools (M rank = 230.57) for private schools.

When conducting a Kruskal-Wallis H test to compare the usage of educational games for type of school respondents for each country separately, the result of these tests are shown in appendix (J). It appears that there are significant differences between the

average teachers' use of educational games due to their type of school in Palestine. The Kruskal-Wallis H results suggest that the average of using educational games of the type of school groups differs significantly, H (2) = 8.512, p =.014. To check for individual differences between the type of school groups, post-hoc pairwise comparisons are assessed. The result shows the difference is between public schools (M rank =52.81) and private schools (M rank =98.33) for private schools. The mean differences are significant at the 0.05 level. However, no significant differences are detected between public schools and UNRWA schools, or between private schools and UNRWA ones.

The result also indicates that there are significant differences between the average teachers' use of educational games due to their type of school in Syria. The Kruskal-Wallis H results suggest that the average of using educational games of the type of school groups differs significantly, H (2) =10.049, p =.007. To check for individual differences among the type of school groups, post-hoc pairwise comparisons are assessed. The result shows the difference is between private schools (M rank = 64.96) and UNRWA schools (M rank = 38.75) for private schools. The mean differences are significant at the 0.05 level. However, no significant differences are detected between public schools and UNRWA schools, or between private schools and public ones.

The result also indicates that there are significant differences between the average teachers' use of educational games due to their type of school in Yemen. Mann Whitney U test is utilized because there are not UNRWA schools in Yemen. The test reveals that using educational games is significantly lower in the public school group (Md =3.500, n 64) compared to the private school group (Md = 4, n =38) U =778.500, Z = -3.032, p =.002, with a moderate effect size, r = - 0.30. Whereas in Iraq there is not any statistically differences between school type there in using educational games (p =.539).

3.2.3.4 Section Four of the Eighth Question

Are there statistically significant differences at the level of significance (α = 0.05) between the average teachers' use of educational games due to work in the field of educational loss?

To answer this question, a non-parametric Mann Whitney U test is used instead of the parametric independent T-test because of the violation of the assumptions

of normal distribution. variable and the presence of outliers. Results are shown in table (8).

Table (8)

Examination of the differences between employing educational games due to work in the field of educational loss

Test Statistics[a]	
	M_Using_EG
Mann-Whitney U	12905.500
Wilcoxon W	20780.500
Z	-4.877
Asymp. Sig. (2-tailed)	.000

a. Grouping Variable: Work in the field of educational loss

To evaluate the differences between the teachers who have worked in the field of educational loss and the teachers who have not based on the usage educational games, Mann Whitney *U* test is utilized. The test reveals that using educational games is significantly lower for the teachers who have not worked in the field of educational loss group (*Md* = 4,1111, n =295) compared to the teachers who worked in the field of educational loss group (*Md* = 3.7778, n =125) *U* = 12905.50, *Z* = -4.877, *p* =.000.

When conducting Mann Whitney *U* test to compare the usage of educational games for Yes and No respondents for each country separately, the result of these tests are shown in appendix (K). It appears that there are no significant differences among Yes and No respondents in using educational games in Palestine (*p* =.290) and Iraq (*p* =.554). Whereas in Syria, there is significantly lower usage of educational games for the teachers who have not worked in the field of educational loss group No (*Md* = 3, n =25) compared to the teachers who have worked in the field of educational loss group (*Md* = 4, n =75) *U* = 206, *Z* = -5.839, *p* =.000. And in Yemen there is significantly lower usage of educational games for the teachers who have not worked in the field of educational loss group No (*Md* = 2.9444, n = 42) compared to the teachers who have worked in the field of educational loss group (*Md* = 4, n = 60) *U* =623, *Z* = -4.337, *p* =.000.

3.2.3.5 Section Five of the Eighth Question

Are there statistically significant differences at the level of significance (α = 0.05) between the average teachers' use of educational games due to educational qualification?

To answer this question, a non-parametric Kruskal-Wallis H test is used instead of the parametric One-Way ANOVA test because of the violation of the assumptions of normal distribution of using the educational games regarded to qualification variable and the presence of extreme values. Results are shown in table (9).

Table (9)

Examination of the differences between employing educational games due to qualification variable

Test Statistics[a,b]	
	M_Using_EG
Kruskal-Wallis H	25.699
Df	3
Asymp. Sig.	.000

a. Kruskal Wallis Test b. Grouping Variable: Qualification

A Kruskal-Wallis H test is conducted to determine whether there is an effect of qualification on the level of using educational games in the educational process. The results indicate that there is statistically significant difference between the four groups in using educational games, H (3) =25.699, p =.000

A Post-hoc pairwise comparisons test is used to determine which group is differs. The result shows the difference is between Bachelor (M rank =195.94) and Diploma (M rank =271.14) for Diploma. And there is difference between Bachelor (M rank =195.94) and PhD (M rank =319.52) for PhD. Also, there is difference between Master (M rank = 215.98) and PhD (M rank = 319.52) for PhD. Whereas there were not statistically significant differences between Bachelor and Master, between Master and Diploma, or between Diploma and PhD.

When conducting a Kruskal-Wallis H test to compare the usage of educational games for educational qualification respondents for each country separately, the results of these tests are shown in appendix (L). It appears that there are significant differences

between the average teachers' use of educational games due to their educational qualification in Syria. The Kruskal-Wallis H results show that the average of using educational games of the educational qualification groups differ significantly, H (3) = 18.125, p =.000. To check for individual differences between educational qualification groups, post-hoc pairwise comparisons are assessed. The result shows the difference is between Bachelor group (M rank = 45.51) and Diploma group (M rank = 79.05) for Diploma group, and between Bachelor group (M rank = 45.51) and PhD group (M rank = 87.50) for PhD group. Also, there is a difference between Master group (M rank = 45.71) and Diploma group for Diploma, and also between Master group and PhD group for PhD one. The mean differences are significant at the 0.05 level. However, no significant differences are detected between Bachelor and Master groups, or between Diploma and PhD groups

The result also indicates that there are significant differences between the average teachers' use of educational games due to their educational qualification in Yemen. The Kruskal-Wallis H results show that the average of using educational games of the educational qualification groups differs significantly, H (3) =10.035, p =.018. To check for individual differences between the educational qualification groups, post-hoc pairwise comparisons are assessed. The result shows the difference is between Bachelor group (M rank = 46.75) and PhD group (M rank = 79.07) for PhD groups. The mean differences are significant at the 0.05 level. However, no significant differences are detected between Bachelor and Master groups, or between Bachelor and Diploma groups, or between Master and Diploma groups, or between PhD and Diploma groups.

Whereas in Palestine there is not any statistically differences between educational qualification respondents in using educational games (p =.258). or in Iraq (p =.256).

3.2.3.6 Section Six of the Eighth Question

Are there statistically significant differences at the level of significance (α = 0.05) between the average teachers' use of educational games due to specialization?

To answer this question, a non-parametric Mann Whitney U test is used instead of the parametric independent T-test because of the violation of the assumptions of normal distribution of using the educational games regarded to specialization variable and the presence of extreme values, Results are shown in table (10)

Table (10)

Examination of the differences between employing educational games due to specialization

Test Statistics[a]	
	M_Using_EG
Mann-Whitney U	20427.000
Wilcoxon W	51303.000
Z	-.739
Asymp. Sig. (2-tailed)	.460

a. Grouping Variable: Specialization

To evaluate the differences between the scientific major and literary major for using educational games, Mann Whitney *U* test is utilized. The test reveals that there are no significantly differences in using educational games of scientific major group (*Md* = 4, n =172) compared to literary major group (*Md* = 4, n =248) *U* =20427, *Z* = -.739, *p* =.460.

When conducting Mann Whitney *U* test to compare the usage of educational games for scientific major and literary major respondents for each country separately, the results of these tests are shown in appendix (M). It appears that there are no significant differences between scientific major and literary major respondents in using educational games in Palestine (*p* =.075) and Iraq (*p* =.525) and in Syria (*p* =.322). Whereas in Yemen, it is significantly lower in the literary major group (*Md* = 3.5556, n =57) compared to the scientific major group (*Md* = 4, n =45) *U* =985, *Z* = -2.008, *p* =.045.

3.2.3.7 Section Seven of the Eighth Question

Are there statistically significant differences at the level of significance (α = 0.05) between the average teachers' use of educational games due to years of experience in education?

To answer this question, a non-parametric Kruskal-Wallis H test is used instead of the parametric One-Way ANOVA test because of the violation of the assumptions of normal distribution of using the educational games regarded to professional experience variable and the presence of extreme values. Results are shown in table (1) in appendix (M).

A Kruskal-Wallis H test is conducted to determine whether there is an effect of professional experience on the level of using educational games in the educational process. The results indicate that there is statistically significant difference among the three groups in using educational games, H (2) =10.412, p =.005

A Post-hoc test is used to determine which group is differs. The result shows the difference is between 5-10 years group (M rank =181.74) and less than 5 years group (M rank =218.28) for less than 5 years group. And there is difference between 5-10 years group (M rank =181.74) and more than 10 years group (M rank =224.43) for more than 10 years group.

When conducting a Kruskal-Wallis H test to compare the usage of educational games for professional experience respondents for each country separately, the result of these tests are shown in appendix (N). It appears that there are not significant differences between the average teachers' use of educational games due to their professional experience in Palestine (p =.126). Also, there are not significant differences between the average teachers' use of educational games due to their professional experience in education in Syria (p =.975), nor in Iraq (p =.102) neither in Yemen (p =.140).

3.2.3.8 Section Eight of the Eighth Question

Are there statistically significant differences at the level of significance (α = 0.05) between the average teachers' use of educational games due to the educational stage taught by the teacher?

To answer this question, a non-parametric Kruskal-Wallis H test is used instead of the parametric One-Way ANOVA test because of the violation of the assumptions of normal distribution of using the educational games regarded to the grade level of teaching variable, and the presence of extreme values. Results are shown in table (1) in appendix (N).

A Kruskal-Wallis H test is conducted to determine whether there is an effect of the grade level of teaching on the level of using educational games in the educational process. The results indicate that there is statistically significant difference among the four groups in using educational games, H (3) =8.587, p =.035

A Post-hoc test is used to determine which group is differs. The result shows the difference is between from 10-12 grade (*M* rank =192.65) and more than one grade (*M* rank =234.14) for more than one grade. And there is difference between from 5-9 grade (*M* rank =193.06) and more than one grade (*M* rank =234.14) for more than one grade.

When conducting a Kruskal-Wallis H test to compare the usage of educational games grade level of teaching respondents for each country separately, the result of these tests are shown in appendix (O). It appears that there are significant differences between the average teachers' use of educational games due to their grade level of teaching in Syria. The Kruskal-Wallis H results reveal that the average of using educational games of the grade level of teaching groups differs significantly, H (3) =10.560, p =.014. To check for individual differences between the grade level of teaching groups, post-hoc pairwise comparisons are assessed. The result shows the difference is between (10 – 12) grade group (*M* rank = 25.07) and (1 – 4) grade group (*M* rank = 61.15) for (1 – 4) grade group, and between (5 – 9) grade group (46.80) and (1 – 4) grade group for (1 – 4) grade group. The mean differences are significant at the 0.05 level. However, no significant differences are detected between (10 – 12) grade group and (5 – 9) grade and more than one grade groups. Also, neither significant differences are found between (5 – 9) grade group and more than one grade nor between more than one grade and (1 – 4) grade groups.

The result also indicates that there are significant differences between the average teachers' use of educational games due to their grade level of teaching in Iraq. The Kruskal-Wallis H results show that the average of using educational games of the grade level of teaching groups differs significantly, H (3) =10.547, p =.014. To check for individual differences between the grade level of teaching groups, post-hoc pairwise comparisons are assessed. The result shows the difference is between (10 – 12) grade group (*M* rank =34.75) and more than one grade group (*M* rank =64.85) for more than one grade. and between (1 – 4) grade group (*M* rank = 46.92) and more than one grade group (*M* rank = 64.85) for more than one grade. The mean differences are significant at the 0.05 level. However, no significant differences are detected between (10 – 12) grade group and (1 – 4) grade and (5 – 9) grade groups, or between (1 – 4) grade group and (5 – 9) grade group, or between (5 – 9) grade and more than one grade groups.

Whereas there is not any statistically differences between the grade level of teaching respondents in using educational games in Palestine (p =.767), or in Yemen (p =.851).

3.3 Summary

The purpose of this descriptive research that adopts a mixed method of the qualitative and the quantitative approaches is to find out the extent to which educational games are able to compensate for knowledge and skills loss in times of crisis. It explores the reflection of the educational environment on the compensation of the educational loss. This environment is characterized by instability and insecurity, resulting from the armed conflicts and wars that the countries participating in the research are exposed to. The research manifests an in-depth reading of the viewpoints of the participants in the research, where they have emphasized the prominent role played by educational games in student learning in crises and its impact on their motivation. However, despite that consensus, the participants have reported that there are many obstacles that prevent the use of this strategy and hinder its effective implementation on the real situation in their countries as a result of the difficult political, economic, social and psychological conditions experienced by students and teachers in these countries. The results of the research also show that there is a strong positive correlation between the use of educational games in the teaching practices of teachers and compensation for educational loss on the one hand and an increase in students' motivation towards face-to-face and e-learning in crises on the other hand. That conclusion is derived from the response of teachers from the four countries to the research questionnaire, in addition to testing the effect of (8) demographic variables on the average use of educational games by teachers in the four countries in their teaching practices within face-to-face and virtual classrooms in the e-learning environment.

Chapter Four

Results Discussion

This chapter discusses the results of the study related to the interviews and the questionnaire after the data have been processed statistically.

4.1 The Discussion of the Results of the Interviews

Forty educational experts from university professors, teachers, and educational supervisors have been interviewed to answer the questions of the qualitative study. After analyzing the interviews, five themes have emerged, which are as follows:

4.1.1 The Impact of Educational Games on Student Learning in Crises

Employing educational games in the educational process can be a facilitating factor for learning by making the teaching process entertaining and enjoyable for students in classrooms, or through virtual classes in an e-learning environment. It attracts the attention of students of all ages and is suitable for teaching all subjects (Somen & Goksu, 2020). This is supported by the results of the current study on one hand, which has revealed that the participants from the four countries (Palestine, Syria, Iraq, and Yemen) stress the importance of playing in the educational process, especially in times of crisis. They believe it can help to acquire knowledge and skills, and this is consistent with the results of Karaman et al. (2022) study, which shows that educational games help to acquire knowledge and skills, increase students' ability to understand, and increase their academic achievement. A study by (Alkan & Mertol, 2019), emphasizes the importance of educational games in developing students' abilities to think and make decisions. Similarly, the study by (Sabirli & Coklar, 2020; Zou et al., 2021) shows that educational games lead to an increase in students' achievement. The results of the current study are also consistent with the results of Yıldız (2021) study, in which it is stated that educational games can help to learn and increase the ability to remember. The researcher attributes this to the fact that each educational game, whether traditional or digital, has a clear and specific educational goal that the game seeks to achieve. This includes a set of knowledge or skills related to the study subjects that the learner should acquire. In addition to that, digital educational games contribute significantly to eradicating digital illiteracy among students and teachers.

Educational games also can provide students with good cultural and social values, and this is consistent with the results of the study carried by Karaman et al. (2022), which emphasizes the role of educational games in helping students express themselves, establish successful relationships with their peers, and teach them cultural values. It agrees with the results of (Faisal, 2017) study, in which it is illustrated that educational games help develop students' values and moral systems. The researcher attributes this to the fact that games are, in fact, a simulation of the reality in which the learner lives. Therefore, the teacher can employ them to teach a value, or to promote a certain value, especially through acting and role-playing in life contexts that simulate reality.

Educational games have a major role in simplifying knowledge and bringing it closer to students in an atmosphere of fun and relaxation. This is parallel to the results of the study by Al- Kubaisi (2017), whose results show that the use of educational games brings concepts closer and simplifies them for students. The researcher believes that the educational games, with their design, gradually divide the knowledge into parts that are displayed through the educational game in simple, sequential steps that are interconnected with each other. By moving from one level to another, it simulates international-level determination tests. It helps the student to move gradually from one step to another after mastering the previous step. Therefore, knowledge is presented to the student in a fun, exciting, and gradual steps in its level of difficulty in order to facilitate its acquisition and retention in the learner's memory.

Educational games also can mitigate the trauma and psychological effects that students are exposed to, helping them get rid of stress and anxiety resulting from the crises experienced by students in the study sample countries. This resonates with the results of the study carried by Hariri (2014), which reveals that educational games help to release physical and emotional tension charges. A study by Clark et al., (2018) shows that educational games help relieve stress and help relax. A study by Faisal (2017) delineates that educational games help to release pent-up feelings. The researcher believes that this is due to the ability of the games to improve the mood of the students, increase their sense of pleasure, help them relax, and stimulate a sense of self-confidence in them. As the student is instinctively motivated to play, the educational games, with their elements of fun, suspense, and competition, make the student integrate into the world of play, forgetting the psychological pressures, anxiety, and

tension that he is experiencing as a result of the conditions of war and conflicts in Syria, Iraq, Yemen and the occupation in Palestine.

Although, on the other hand, most of the participants in the study have praised the promising role of using educational games in the educational process, there are still some who view their use in an unfavorable way. Despite their belief in the importance of the educational games, the reality of the situation in their countries indicates that their use is ineffective in a way that hinders achieving the learning goals. They believe that their use is limited to raising students' suspense at the beginning of the lesson or as being mere evaluation tool used at the end of the lesson, finding that not all class students are equally involved in them. They also stress that their use was not realistic because teachers are not originally qualified to use them. They strongly believe that the educational environment for their use is inadequate.

The researcher attributes this variance in the participants' viewpoints to the distance between reality and hope. Teachers believe in the importance of educational games and the feasibility of using them in achieving learning goals, but they believe that applying them on the ground in their face-to-face or e-learning classrooms is very difficult. This difficulty is associated to the lack of an appropriate psychological and physical environment, and to the poor infrastructure in schools, especially technological ones. Therefore, teachers have conviction and belief in the importance of the educational games in conveying information, simplifying knowledge, and learning values. However, they do not use them to a large extent due to the overcrowding of the classrooms and the weakness of their skills in preparing, designing, and adapting purposeful educational games to teach various academic subjects. Moreover, the lack of appropriate conditions for educational games implementation remains a great challenge.

The Participants' views from the four countries of educational games are the same. They do not disagree on their concept and the feasibility of their use, but they disagree on the possibility of their actual application with their students in countries that are incapacitate to provide a safe life for the student and the teacher. The participants define educational games as purposeful activities that are designed in an attractive and exciting template, which are carried out individually, in pairs, or collectively, according to instructions that organize the play process, leading to predetermined learning outcomes.

This definition is consistent with the definition of Alatwah (2022), who defines it as organized educational activities that attract students' interest, and includes interaction between learners in an attempt to achieve specific educational goals, within the framework of the specific established rules. It also agrees with the definition of Yıldız (2021), which defines it as designing games to achieve learning in a real entertainment environment. Abu-Husain (2021) defines them as competitive and purposeful educational activities, carried out by the learner individually or collectively, with specific procedures and laws. They stimulate the learner's motivation towards learning, and make it more positive and interactive in acquiring experiences and skills. The researcher attributes this agreement in defining educational games to the fact that games in general and educational games, in particular, are activities that the student can practice by himself or with one of his peers, or with a group of students to achieve a specific goal. In order to achieve the goals for which it was used, this game must be governed by a set of controls and laws that regulate play and define roles in it.

The participants agree on the importance of educational games in educating students, but their opinions have varied about the educational stage in which educational games should be best implemented. They also do not show consent on the academic subjects they find suitable for the use of educational games. Most of the participants have agreed that the strategy of the educational games is suitable for teaching all school subjects and for all educational stages. This is consistent with the results of the study carried by Xie et al. (2021) and the study by Persico et al. (2019), in each of which it is clarified that educational games are useful in teaching various school subjects. Somen & Goksu (2020) study shows that educational games are a strategy suitable for teaching all ages of students. This is also confirmed by the study carried by Eltem and Berber (2021) which reveals that educational games are a strategy suitable for teaching all ages. The researcher attributes this result to the fact that an individual, by his instinct, tends to play regardless of his age. Even adults find playing a good way to entertain themselves and acquire some skills, especially in our digital age, in which adults, rather than children, play digital games. Educational games can be integrated into the learning process of all ages, from kindergarten to graduate studies. It is also suitable for teaching all subjects, including languages, religions, arithmetic, science, and other subjects because of its flexibility and adaptability.

A few participants believe that educational games are better used with younger students in the basic stages or with kindergarten students. They also believe that they do not fit for all academic subjects. Some of them think that educational games are suitable for some aspects of academic subjects, finding that they suit scientific subjects rather than literary ones. However, others believe in the extreme opposite of this.

The researcher attributes this contrast in opinions to teachers' lack of knowledge and experience in the characteristics of educational games and in their adaptation to academic subjects and different grades. Each teacher evaluates the academic subjects and school stages that are suitable for the use of educational games from his intellectual perspective and his perception of the desired benefit from the use of educational games. This requires qualifying teachers and introducing them more to educational games. Teachers should be provided with a guidance to guide them on how to use the educational games with different academic subjects and how to adapt them to the different educational stages of students.

The theoretical background and knowledge that the participants possess about the use of educational games make them confirm that it is an active learning strategy once the teacher implements it correctly and appropriately in his teaching practices. Therefore, there is no contrast in the participants' viewpoints that the strategy of traditional and digital educational games is an active student-centric learning strategy. Hence, they view it as an active learning strategy that shifts education from the centrality of the teacher to learner-centered learning. This is associated with the fact that the student discovers and produces information by getting engaged in educational games, as he has the greatest role in his learning process. This is compatible with the results of the study of Sabirli and Coklar (2020), which shows that educational games help the transition from teacher-centered learning to learner-centered learning. Moreover, the study by Eltem and Berber (2021), emphasizes that educational games are an active strategy based on the student. The researcher attributes this result to the fact that the student practices, applies, experiments, and tests what he learns through educational games by himself, using different senses. The student, while playing, infers and deduces the information that he discovers by himself or in cooperation with his peers. The idea of educational games is based on the challenge when the student fails at any stage from the stages of play, he rushes to try again and again until he masters it. This develops the

spirit of challenge and perseverance and would keep the information more memorable in the mind of the student. In brief, educational games are an active learning strategy in which the student is the center because it provides him with experience through work.

Participants from the four countries believe that the teacher must possess a set of skills in order to be able to employ educational games effectively and adapt them so that they are suitable for teaching all subjects and all ages. These skills include the skill of designing and creating traditional and digital educational games, the skill of identifying students' needs, and the skill of defining the goals of the game and the steps to implement it and evaluate students through it. They also include the ability to choose the appropriate game for the age of the students and the subject, the skill of presenting the educational game and clarifying its instructions to the students, and the skill of class and time management and roles distribution within the game. Add to this the ability to take into account individual differences among students through educational games, communication skills, technological skills, and the teacher being a good player. This harmonizes with the results of Abu-Husain's (2021) study, which shows that the teacher must possess the skill of presenting the educational game, distributing roles while playing, observing, and evaluating students' performance through the game. The researcher attributes this result to the fact that the teacher, without possessing these skills, will not be able to innovate and design educational games that suit the age group of the students, suit the different subjects, and that are in line with the student's tendencies and desires to achieve the learning goals for which they were used. These skills enable the teacher to manage class time, organize play, distribute the roles of the game among the students in order to achieve its goals, and evaluate the learning of his students through it.

Despite the participants' conviction of the usefulness of teachers' use of educational games through their possession of a set of skills and competencies, the reality of the situation manifests that teachers do not possess these skills. They, accordingly, need training and qualification to create, design, use, and adapt them to suit the teaching of academic subjects and different educational stages.

The ability of the four countries has differed in dealing with educational crises resulted from the political and economic conditions. The results of the study show that Palestine has maintained a certain level of education for its children despite the occupation and

the obstacles it imposes on education. This is due to the high percentage of educated people in Palestine, especially among mothers, which helps the continuity of the learning process at the time of the crises that Palestine has experienced for decades. Palestinians' parents support for their children's education has played a major role as well. This is consistent with the results of Olwan (2022) study, which shows that Palestinian families are keen to educate their children in all circumstances, despite the harshness of life and the low economic level of the family. To him, this makes the Palestinian society, in general, a society free of illiteracy. The researcher attributes this to the fact that the Palestinian people have become accustomed to crises for decades. Education for the Palestinian people is the real capital and the largest investment in the absence of economic resources resulted from the occupier's control over them. Education, from the Palestinian point of view, is a sacred right that cannot be waived.

In Syria, the results of the study shave showed that the low motivation of students, their absence from attending schools for many years in war zones, the poor electricity and internet situation, the lack of books required to be available to students, and the high number of students in classrooms have a significant impact on the continuity of the educational process and its efficiency in crises in Syria. This is congruous with the results of Mhalla et al., (2022) study, which emphasizes the continuous power outages and the weakness of internet networks and their impact on the continuity and quality of the educational process. Similarly, Al-Yousifi (2015) study shows the suffering of Syrian education due to the overcrowding of classrooms with students because of the war.

As for the conflict and war zones in Iraq, education was the biggest victim of these conflicts. The schools were almost completely closed for several years in these areas, with no students receiving any kind of education or even switching to distance learning, due to the lack of internet in war zones. These results are consistent with the results of the study by Mohammed (2022), which shows the absence of planning for the transformation of e-learning. Al-Tabtabai & Asadi (2022), study depicts the suffering of education in Iraq because of poor internet and electricity. As for Yemen, it suffers from the division of the country as a result of the war, and thus the division of the authority supervising education. This has led to duplication of educational policies and decisions, achieving minimum educational goals. This has negatively affected students' motivation

towards learning. These results are in agreement with the results of the study by Al-Selwi (2022), which emphasizes the weakness of learning outcomes as a result of students' low motivation to learn. The researcher attributes these results to the harsh conditions of the war and its repercussions on education. This includes the bombing of schools, the assassination of students and teachers, and the displacement of thousands of residents from their cities and villages. All this has had a significant impact on students' learning and, consequently, has led to the reluctance of many of them to study, preferring to get engaged in the labor market in order to help their families economically. In general, the poor condition of schools in safe areas that suffer from poor infrastructure and a lack of materials and means necessary for teaching, besides to the large increase in the number of students in classrooms have greatly affected the outcomes of the educational process in Iraq, Syria, and Yemen.

4.1.2 The Effect of Educational Games on Students' Motivation towards Learning in Crises

Educational games can provide an attractive learning environment for students and increase their achievement. The participants unanimously have agreed on the importance of motivation in the occurrence of learning because it contributes to the continuity of learning and the achievement of its goals. It is the basis that motivates students to learn. This is consistent with the results of the study by Yıldız (2021), which shows that educational games increase motivation to learn, self-confidence, and help remember. In the same regard, the study by Aleneze (2022), confirms that educational games increase motivation, attention, and focus during learning. The researcher attributes this result to the fact that educational games are a stimulating strategy for learning because they have elements of fun and suspense, which drives students to learn with an inner desire to participate in the game and continue with it until it finally reaches its output.

The participants from the four countries possess the same concept of motivation to learn and agree on the characteristics of educational games and their impact on students' learning by creating a motivation towards learning. Thus, all participants have similar views on the concept of motivation to learn where they define motivation as a desire that drives students to learn.

This definition is in harmony with the definitions that appear in Tsyganova et al. (2021) study, where it is defined as a set of internal motives or reasons that explain the student's behavior and direct his activities in the educational process. It agrees with the definition in Budasi et al. (2020) study as a belief within the student that directs him to learning goals, motivates him to good behavior, and enhances his learning and knowledge acquisition.

As for the effect of educational games on students' motivation toward learning, the participants consider them as a prerequisite for learning to occur. This is parallel with the results of the study carried by Elgendy (2022), which shows that motivation is a condition for learning to occur. Radef et al., (2022) study confirms that motivation is a prerequisite for learning as well.

The results of the study also show that educational games work to break the routine of classes, stimulate attention and focus among students, increase student activity to the maximum limits in acquiring knowledge, stimulate knowledge exchange among students, work to unload pent-up feelings, and endear students to learning. This has definitely a great impact to increase motivation towards learning. This resonates with the results of the study by Yu et al. (2021), which shows that educational games increase interaction among students. The study of each (Eltem & Berber, 2021; Sabirli & Coklar, 2020; Zou et al., 2021) confirm the role of educational games in increasing motivation to learn and in increasing academic achievement. The researcher attributes this result to the fact that educational games, especially digital ones, provide impressive options for students, attractive characters, and interesting results sufficient to achieve the objectives of active learning. In addition to that, students spend enjoyable times immersed in the experience they interact with. Also, modern educational games are in line with the requirements of the current era and the aspirations and interests of the digital generation. They help students get out of the traditional routine of classes that make students lose their passion for learning.

Teachers believe that students are not motivated to learn unless a set of conditions are precisely met. These conditions are highlighted by the participants as: providing a rich and safe learning environment, designing learning according to students' characteristics, learning styles, psychological and social needs, linking learning to the realities of life, employing technology in learning, and diversifying the teaching strategies that are used

by teachers. The teacher's belief in his role in educating his students and bringing about social change is also of great importance. The security, political, economic, and social conditions unfortunately prevent the availability of these conditions in the learning environment in these countries whose aspects of life have been badly affected by constant wars.

The researcher attributes the lack of motivation among students towards learning to the conditions of occupation and war that put them in a bad psychological situation due to insecurity and the deterioration of the economic situation. In addition, the lack of an educational environment that encourages learning also contribute to minimize students' enthusiasm towards learning. All of this has made the students' motivation to learn reach its lowest levels. Thus, the students show reluctance to study and rather prefer to join the labor market or to join the ranks of the fighters in the war.

The study shows that students in the four countries suffer from low motivation to learn as a result of the difficult circumstances they live in at all stages, especially in Syria, Iraq, and Yemen, more than in Palestine. The study of (Al-Tabtabai & Asadi, 2022) shows that Iraqi students suffer from low motivation to learn and the study of (Al-Ahnoumi & Al-Shami, 2021; Al-Selwi, 2022) shows a decrease in motivation to learn among Yemeni students. The researcher associates this result with the difficult political and economic conditions in these countries, and the lack of security, fear, and psychological disorders that students suffer from as a result of what they have seen as killing, displacement, and the bombing of schools. The overcrowding of classrooms with students in Syria, Iraq, and Yemen resulted from displacement to safer places has negatively affected students' motivation toward learning and the quality of education provided to them.

4.1.3 The Role of Educational Games in Compensating Educational Loss

The issue of educational loss is one of the important issues these days, especially in countries and regions that are suffering from crises that have greatly affected the outputs of their educational systems. Therefore, the participants unanimously have agreed that the more students' motivation and enthusiasm for learning increases, the more they learn. They are ready to search for and acquire information through play that combines fun and learning together at the same time. This matches with the findings of (Sabirli &

Coklar, 2020; Zou et al., 2021), in which they find that educational games lead to increased motivation and thus increase students' achievement. The participants have emphasized the importance of educational games in compensating for educational loss. The concept of educational loss does not differ from one country to another, especially in countries that suffer from crises and wars. This has negatively affected the educational process in them. The educational loss is considered as a loss in students' basic knowledge and skills that they need to continue their learning in the later stages. It is also a loss of some values as a result of the isolation and violence that students are exposed to during wars. The participants define it as a decline in students' learning levels, meaning that it is the gap between what students are expected to learn in a specific period and what students actually learn as a result of certain circumstances. This definition is consistent with the definitions presented in the study of Shoshaa (2022), where he defines it as the general or specific loss of knowledge and educational skills.

In Akhdir (2021) study, it is defined as the failure to reach the desired educational results, either because students drop out, or they are unable to continue the educational process. Furthermore, it is defined in the study of Affouneh and Salha (2022) as the gap among the inputs, processes, and expected outputs of the educational process in the formal system.

Participants believe that educational games in the ideal situation compensate for the educational loss effectively. They have agreed that it is possible to compensate for the educational loss by using educational games. They compensate for the cognitive and skill loss of students by increasing students' motivation towards learning, increasing their attention and focus in the class, accelerating the learning process, shortening time and effort, and achieving more than one educational goal using a single game. They also help simplifying the information and help the student to retain it in long-term memory. This matches agreeably with the results of Yıldız (2021) study, which emphasizes the role of educational games in learning and increasing focus and attention. The study of Al- Kubaisi (2017), shows that educational games clarify concepts and bring them closer to the student's mind. Educational games also work to compensate for the behavioral and value loss resulting from crises by teaching students values along with information through educational games, promoting positive behaviors, enhancing

student self-confidence, and helping students to get rid of psychological disorders resulting from wars and crises. This is compatible with the results of the study by Karaman et al. (2022), which confirms that educational games help to learn cultural values. A study by Faisal (2017) shows that educational games help develop students' values and moral systems. The researcher illustrates this result depending on the fact that learning takes place in an atmosphere dominated by fun and suspense, especially in wars and crises that negatively affect students' motivation and their willingness to learn. The use of educational games is the perfect solution for learning and compensating for what students have lost in terms of knowledge, skills, and values. In times of war, the student is in dire need of a quality education that combines knowledge and pleasure, away from the atmosphere of tension and anxiety that accompanied wars and conflicts.

The participants believe that in their countries that lack essential capabilities and resources, and in light of wars that have wasted the human and economic forces, the minimum requirements for face-to-face and e-learning education are not met. They find that students cannot obtain their right to learn in a safe, risk-free environment suitable for learning. The participants clarify that education in their countries does not have an environment for its occurrence, nor to compensate for the knowledge and skills that students missed, believing that the war has eliminated any compensatory education.

The researcher believes that the repercussions of the war in these countries led to the demolition and closure of many schools or to their conversion into military barracks. Wars' consequences also doubled the number of students in classrooms in safe areas as a result of displacement from war zones. The economic and social life of students and teachers have been greatly affected as a result. All of this limited the ability of schools and teachers to use various educational strategies that help compensate for educational loss, including the strategy of educational games. Despite the belief of all participants in the importance of this strategy in compensating for educational knowledge and value loss in record time if compared to other strategies, the circumstances of their countries greatly limit the application of educational games within face-to-face and virtual classrooms.

4.1.4 Challenges of Employing Educational Games

Employing educational games in developing countries such as Palestine, Syria, Iraq, and Yemen, which suffer from many crises that put them in a difficult economic, social and political situation, faces many challenges. The study participants have summarized these challenges as social-challenges related to the decline in the status of the teacher, especially in Iraq and Yemen. They also have pointed to financial and economic challenges that are represented in: the poor financial condition of the teacher and the learner, the inability to provide smart devices, tools, and materials necessary for learning in crises, weak Internet networks, and continuous power outages. This agrees with the results of the study by Qareeb (2022), which shows that power outages and the Internet are among the factors affecting the employment of educational games, especially digital games. The study by Aleneze (2022) confirms that the high cost of digital transformation is one of the obstacles to employing digital games, especially in times of crisis. The study carried by (Belmokaddem & Djelti (2020) confirms that poor infrastructure in schools is one of the most important challenges of employing educational games in them. Ghanima (2014) study also confirms that the lack of resources and poor infrastructure constitute the major challenges for schools. The technological challenges that the participants have mentioned are represented by: weak technological infrastructure, and a lack of technological expertise among many teachers. These results are consistent with the results of the study by (Mhalla et al. (2022), which shows that the lack of computers and the weakness of the Internet stands as an obstacle to employing educational games, especially digital ones. Al – Rubaie (2021) study emphasizes that the lack of technical support and the weakness of the Internet are among the biggest challenges. (Belmokaddem & Djelti, 2020; Swier & Peterson, 2018) studies also emphasize that the weakness of computer skills and the lack of technical experience of teachers do challenge the employment of educational games and the transformation of e-learning.

The participants have highlighted other challenges that are related to the school environment, such as the lack of readiness in schools to use educational games, especially digital ones, and the overcrowding of classrooms with students. These results are aligned with the results of Al-Yousifi (2015) study, which shows that the high density of students in classrooms, the difficulty in providing textbooks, and the lack of

teachers prevent the use of educational games. Some other challenges are related to the extent of teachers' and schools' readiness, willingness, and efficiency in employing educational games. This includes teachers' poor skills in dealing with educational games, producing them, designing them, and adapting them for different subjects. They have also touched upon some challenges that are related to the parents' negative view of using educational games in the educational process, and the teacher's lack of conviction of the feasibility of using this strategy, especially in Syria, Iraq, and Yemen. These results are consistent with the results of (Rashidi, 2022) study, which stresses that the negative attitudes towards digital transformation and digital educational games are a major challenge to the employment of educational games in the virtual environment. In addition to this, some psychological challenges have emerged resulting from the practices of the occupation against students and teachers alike in Palestine. The psychological effects have being maximized because of the war in the conflict zones in Syria, Iraq, and Yemen, leaving negative effects on students and their motivation towards learning. These results are consistent with the results of the study carried by Al-Hamdani (2021) which shows that psychological effects such as fear and stress resulting from the war among Syrian students negatively affect their learning. Kahil (2015) study emphasizes the negative role of the war on teachers and students in terms of assassination and kidnapping, its effects on the psychology of students, and its repercussions on their learning.

The researcher believes that developing countries in general, and those that fall under crises in particular, suffers from a lack of funding that affects the outcomes of the educational process greatly. Funding is needed to equip the necessary infrastructure for education, give teachers their salaries, and finance the necessary courses to qualify teachers for education in crises, and to employ active strategies such as the strategy of educational games. The researcher attributes these challenges to the conditions of war and its repercussions, believing that the reality of nations is reflected in all aspects of their political, economic, and social life. These conditions have negatively affected education as it was no longer able to develop in construction, preparation, and training. The destruction of schools by war and occupation has turned many schools in conflict areas into military barracks or shelters for the displaced. In safe areas, schools are crowded with students, which increases the burdens on these schools, on their teachers, and on the efficiency, effectiveness, and ability of the school to achieve its learning

goals. All this has created a frustrating environment devoid of activities and entertainment in most cases. This has made the general atmosphere in schools unmotivating for students or teachers, which has made them refrain from learning. Instead, they have gone to join the war in the ranks of fighters or work to help their families under difficult economic conditions in which the minimum requirements for a decent life are not met. The same applies to the teacher, who is often forced to leave the profession of teaching and join the war, or look for another job to improve his living conditions.

4.1.5 Ways to Develop the Use of Educational Games

It is possible to try to overcome these challenges from the point of view of the participants in the study by providing the necessary funding sources for employing educational games, preparing plans to employ them effectively in the teaching process, strengthening the infrastructure in schools, developing electronic educational platforms, and activating digital educational games sites for teachers. Also developing curricula in line with the use of educational games in them and raising the capabilities of educational staff would help face the previous mentioned challenges. The participants find that it is important to develop the educational staff capabilities in designing and employing educational games through a partnership with universities in order to enable the students of Teacher Education Programs to understand and apply the strategy of educational games, especially digital ones. The participants have also stressed the importance of training teachers to use the educational games in the classroom through seminars and training courses. They find it also essential to educate parents about the importance of educational games in the educational process, especially in times of crisis. These results are close to the results of Mohammed (2022) study, which calls for good planning for digital transformation and distance education to overcome crises. Al-Hafashi and Al-Kassi (2022) study recommends the need to provide the necessary human resources for education, whereas the study carried by Alkan & Mertol (2019) recommends the need to conduct training courses for teachers so that they can effectively employ educational games in the educational process.

The researcher believes that development does not occur in employing educational games without good planning that includes these games within the policies of the ministries of education. Educational games must be used deliberately, considering that

they are a strategy that plays a prominent role in increasing students' motivation to learn and compensate for educational loss because of their motivating and supportive characteristics for student education. This planning must create a real partnership with universities in preparing the student teacher to possess a theoretical framework for this strategy. This would allow him to prepare, design, and adapt educational games to suit the needs of his students and the curricula that he is about to teach, applying these games on the face-to-face or virtual education environment. It is also necessary to plan well to develop the capabilities of in-service teachers by training them through seminars and training courses to employ educational games in an effective manner that helps students learn and compensate for what they have missed in terms of knowledge, skills and values. They also help them overcome the psychological crises that they experience as a result of war, conflicts and occupation. The researcher believes that the major countries should carry their responsibilities to help these developing countries overcome their economic crises by providing adequate support for reconstruction and establishing successful education projects in order to improve the educational situation and restore it to its former state.

4.2 The Results Discussion that Related to the Quantitative Aspect of the Study

4.2.1 The Discussion of the Sixth Question Results

Is there a statistically significant correlation at the level of significance ($\alpha = 0.05$) between employing educational games and compensating educational losses in Palestine, Syria, Iraq, and Yemen in crises?

The results of the study show that there is a strong positive relationship between employing educational games in the educational process and compensating for the educational loss in the responses of the total sample of the study. This strong correlation, from the researcher's point of view, indicates that educational games play a prominent role in compensating for educational loss due to their attractive and interesting characteristics for students. The student, while getting engaged in play, discovers and produces information by himself or in cooperation with his peers. He also practices, applies, experiments, and tests what he learns through educational games. Educational games help to compensate for the loss of knowledge and skills among students by increasing students' motivation towards learning, increasing their attention in the classroom, accelerating their learning process, simplifying information, and

helping the student to retain it in his memory. The learning that the student obtains in an atmosphere dominated by fun and suspense, especially in conditions of wars and crises, is considered the best solution for learning and compensating for what students have lost in terms of knowledge, skills, and values. This idea is consistent with the results of the study of each of (Al- Kubaisi, 2017; Faisal, 2017; Karaman et al., 2022; Yıldız, 2021) which emphasize the role of educational games in learning, increasing focus and attention, clarifying concepts, and bringing them closer to the student's mind. The researcher also believes that educational games work to compensate for the behavioral and value loss resulting from crises by teaching students values along with information, enhancing the student's self-confidence and positive behaviors, and ridding them of psychological disorders resulting from wars and crises. This is also harmonious with the study of (Faisal, 2017; Karaman et al., 2022) in which it is illuminated that educational games help develop the values and moral system of students and help them express themselves and build successful relationships with their social environment.

4.2.2 The Discussion of the Results of the Seventh Question

Is there a statistically significant correlation at the level of significance ($\alpha = 0.05$) between employing educational games and increasing motivation towards face-to-face and e-learning in Palestine, Syria, Iraq, and Yemen in crises?

The results of the study show that there is a strong positive relationship between employing educational games in the educational process and increasing students' motivation towards face-to-face and e-learning in crises in the responses of the total sample of the study. The researcher attributes this strong association to the significant impact of using educational games in the learning process on students' motivation toward their learning. The results show a strong positive relationship between employing educational games in the educational process and increasing students' motivation toward face-to-face and e-learning in crises in all countries participating in the study. From the researcher's point of view, this can be interpreted due to the fact that educational games contribute to the continuity of learning, achieve its goals, and provide an attractive learning environment for students that meets their needs and desires in a way that helps increase their achievement. This result is consistent with the results of (Eltem & Berber, 2021; Sabirli & Coklar, 2020; Yıldız, 2021; Zou et al.,

2021), which emphasize the role of educational games in increasing motivation to learn, increasing academic achievement, and increasing focus and attention.

4.2.3 The Discussion of the Results of the Eighth Question

Are there statistically significant differences at the level of significance (α = 0.05) in the teachers' average use of educational games due to the variables (country, gender, type of school, work in the field of educational loss, educational qualification, specialization, years of experience in education, and the educational stage taught by the teacher)?

This question includes eight demographic variables, according to which the eighth question has been answered. Therefore, the results of this question are divided into eight sections, each section is related to answering the question according to one of these variables.

4.2.3.1 The Discussion of the Results of the First Section of the Eighth Question

Are there statistically significant differences at the level of significance (α = 0.05) between the teachers' average use of educational games due to country?

The results of the study show that there are statistically significant differences among the countries participating in the study (Palestine, Syria, Iraq, Yemen) in the teachers' average use of educational games in the educational process, due to the variable of the country in which the teacher works. When conducting the post hoc test to find out the differences in favor of any country, it is found that the differences are between Palestine and Syria in favor of Palestine and between Iraq and Syria in favor of Iraq. Also, the differences between Palestine and Yemen show favor of Palestine and between Yemen and Iraq show favor of Iraq. The results also show that there are no statistically significant differences between the teachers' average use of educational games between Yemen and Syria, or between Palestine and Iraq.

The researcher attributes the differences in the teachers' average use of educational games in the educational process in favor of Palestine and Iraq, as Palestinian and Iraqi teachers use educational games more than Syrian and Yemeni teachers, to the negative impact of the war in Syria and Yemen on the educational process. This result is consistent with the study of (Al-Yousifi, 2015), which clarifies that the war in Syria has led to a shortage of teachers, the difficulty of providing textbooks for all students, and

the density of students in classrooms. The study carried by (Al-Ahnoumi & Al-Shami, 2021; Al-Selwi, 2022) similarly shows that the war in Yemen has led to a lack of material and human support for education, especially e-learning. The researcher believes that the war has had a psychological impact on teachers' motivation towards work, and thus affected their use of educational games in the educational process. The usage of educational games requires the ability to design and produce them, clarify their instructions, distribute roles among students during the play, and evaluate students' performance through them. The war has also financially affected the education budgets in these countries, which are necessary to provide the requirements for applying educational games or subscribing to digital games sites. The use of educational games requires getting teachers qualified through training courses that need sufficient funding to be held. However, this funding is not available in war zones. Moreover, the continuous outages of electricity and the Internet in Syria and Yemen are more than in Iraq and Palestine, which has had a great impact on education in general, and on the use of educational games in particular, especially digital educational games that need electricity and Internet. This analysis is largely in agreement with the results of (Belmokaddem & Djelti, 2020; Qareeb, 2022) study which confirms that power and Internet outages and poor infrastructure in schools are among the most important challenges of employing educational games, especially digital educational games.

4.2.3.2 The Discussion of the Results of the Second Section of the Eighth Question

Are there statistically significant differences at the level of significance ($\alpha = 0.05$) between the teachers' average use of educational games due to gender?

The results of the study show that there are statistically significant differences among the countries participating in the study (Palestine, Syria, Iraq, and Yemen) in the teachers' average use of educational games in the educational process due to the teacher's gender variable. The results of the study show that the differences are in favor of females in the total sample of the study. Through the researcher's work as a teacher and a school principal, the researcher believes that job satisfaction among females is greater than among males. Therefore, female's motivation to work is greater than male's motivation. The fact that the female enjoys the instinct of motherhood makes her closer to her students and therefore keener on their education. She always strives for perfection and creativity in her work, and this is what drives her to search for

educational strategies, including educational games, which help her achieve learning goals, especially in times of crisis. The results of the study show that there are differences between males and females in Syria, in favor of females. The researcher attributes this result to the preoccupation of males with the war and their focus on the quantity of education provided to students rather than the quality. Females seek to provide students with good qualitative education to help them overcome war conditions. They are by nature closer to students psychologically and tend to participate in the play. The results show no statistically significant differences between males and females in Palestine, Iraq, and Yemen. The researcher attributes this result in Palestine to the keenness of the Ministry of Education to train and qualify its teachers, regardless of their gender, to use educational games in the educational process through courses and training workshops. Such trainings include: the right to play, active learning strategies, learning through play, and drama in education courses. The trainings are usually conducted in cooperation with Palestinian community institutions. As for Yemen, the circumstances of the war have affected the use of educational games equally among male and female teachers. The rate of employing games in Yemen has been lower than in Palestine and Iraq. This is associated with the lack of electricity and the Internet and the lack of financial support required for the use of these games. These findings are confirmed in (Al-Ahnoumi & Al-Shami, 2021; Al-Selwi, 2022). In Iraq, the lack of differences between the genders in the degree of using educational games is due, from the researcher's point of view, to the fact that both genders have received training courses on the use of educational games to the same degree.

4.2.3.3 The Discussion of the Results of the Third Section of the Eighth Question

Are there statistically significant differences at the level of significance ($\alpha = 0.05$) between the teachers' average use of educational games due to type of school?

The results of the study show that there are statistically significant differences among the countries participating in the study (Palestine, Syria, Iraq, Yemen) in the teachers' average use of educational games in the educational process due to the variable of the type of school in which the teacher works. When conducting the post hoc test to find out the differences in favor of any group, it is found that the differences are between public schools and the UNRWA in favor of public schools. When comparing between UNRWA schools and private schools, the results show favor of private schools. The

researcher attributes this result to the difficulty of the educational climate in the UNRWA schools when compared to public or private schools because of the job burdens placed on the shoulders of the UNRWA teacher. The UNRWA teacher's share of classes is greater than that of the public teacher or the private sector teacher. He also does some logistical work which is supposed to be done by the school secretary due to the lack of a secretary in the UNRWA's schools. Although the UNRWA includes the use of educational games within its training programs for teachers, the school environment is not qualified to use educational games in it. The old school furniture does not allow freedom of movement within the classrooms which are overcrowded with students, reducing the playing space and activities inside the classrooms. In addition to this, the UNRWA does not provide e-learning platforms that enable its students and teachers to use digital educational games.

The results also show that there are no statistically significant differences between the public and private schools participating in the study. The researcher attributes these results to the fact that both groups, public schools, and private schools, seek to provide a good quality of education for their students during the war. They provide a physical environment that supports the use of educational games. Modern education is more concerned with the use of educational games. The World Wide Web is full of digital educational games sites, which are made available to teachers and their students.

The results of the study show statistically significant differences in the average use of educational games in Palestine due to the school type variable. The differences between private schools and public schools are in favor of private schools. The differences in Syria between private schools and UNRWA schools are in favor of private schools as well. In Yemen, the differences between public and private schools are in favor of private schools. However, no statistically significant differences have appeared between private schools and public schools in Iraq. The researcher attributes this result to the fact that private schools always seek to attract the largest possible number of students by providing an attractive learning environment, and educational games are among the most attractive educational strategies for students that help them achieve learning and enjoyment together. In addition, the educational budgets in private schools are generally more than in public schools. The number of students in classrooms is typical, unlike

public schools, which are overcrowded with students. Therefore, it is logical that the use of educational games in private schools is more than their use in public schools.

4.2.3.4 The Discussion of the Results of the Fourth Section of the Eighth Question

Are there statistically significant differences at the level of significance (α = 0.05) between the teachers' average use of educational games due to work in the field of educational loss?

The results of the study show statistically significant differences among the countries participating in the study (Palestine, Syria, Iraq, Yemen) in the teachers' average use of educational games in the educational process due to the variable of the teacher's work in the field of compensating for the educational loss. It is found that the differences are in favor of the teachers who have worked in the field of compensation for the educational loss. The researcher attributes this result to the fact that the period of compensating the educational loss has been relatively short and limited, and the students have been forced to learn during it. This period has been cut off from the summer vacation, so the teachers worked on finding an educational strategy to compensate for the largest amount of knowledge and skills in a record time. Therefore, they have used educational games to attract students towards learning and to compensate for educational loss by accelerating the learning process, helping students to memorize and remember, and linking previous learning with new learning. Educational games are a strategy that takes into account individual differences among students. This is consistent with the results of (Al- Kubaisi, 2017; Yıldız, 2021) study which emphasizes the role of educational games in increasing motivation, learning occurrence and clarifying concepts for students.

When conducting the tests in each country separately, the results show that there are no statistically significant differences in Palestine and Iraq between the teachers who have worked in the field of compensating for educational loss and those who have not. The researcher attributes this result to Palestinian and Iraqi teachers who have been qualified to use educational games in education before educational crises, being accustomed to employing them in their educational practices. As the researcher sees, the teachers who have worked in the field of compensating for educational loss and those who have not worked use games both for their attractive characteristics for students and their ability to improve the quality of education and not only to compensate for educational loss among

students. In Syria and Yemen, the differences are in favor of the teachers who have worked in the field of compensating for the educational loss. The researcher justifies these results because educational games are a strategy that works to compensate for the largest amount of knowledge and skills in the fastest time and with the least effort in a fun and attractive way for students.

4.2.3.5 The Discussion of the Results of the Fifth Section of the Eighth Question

Are there statistically significant differences at the level of significance ($\alpha = 0.05$) between the teachers' average use of educational games due to educational qualification?

The results of the study show that there are statistically significant differences among the countries participating in the study (Palestine, Syria, Iraq, Yemen) in the teachers' average use of educational games in the educational process due to the variable of the teacher's educational qualification. When conducting the post hoc test to find out the differences in favor of any group, it is found that the differences are between the bachelor and diploma degrees in favor of the diploma, between a bachelor's and a PhD in favor of PhD, and between a master's and a PhD in favor of a PhD. However, there are no differences between a bachelor's and a master's degree, between a master's degree and a diploma, or between a diploma and a PhD. The researcher attributes these results to the fact that the teachers who hold the diploma qualification have long experience in education and long years of service that have given them experience in education and its strategies, including the strategy of educational games. As for teachers who have PhD qualifications, by virtue of their specialization and in-depth study in education strategies and teaching methods, they are more able to use educational games more effectively than others.

When conducting the test in each country separately, the results show that there are statistically significant differences in Syria between teachers who holds bachelor and PhD qualifications in favor of a PhD, between the master and diploma holders in favor of the diploma, and between the master and PhD holders in favor of the PhD. Significantly, the study has not showed any differences between bachelor's and master's holders, or between diploma and PhD holders. The researcher attributes these results to the fact that diploma holders are a minority, and they have spent many years in the

service, which has gained them experience in using traditional educational games more than digital educational games that require technological skills that the old generation of teachers lacks. As for the PhD holders, they are the most qualified and familiar with the modern strategies that are used in developed countries in the development of education. Therefore, they are the most capable of designing these games and employing them in the educational process in a scientific and systematic manner that suits the educational needs of students and their age groups.

The study has showed that there are statistically significant differences in Yemen between the bachelor's and PhD degrees in favor of the PhD. There are no differences between bachelor's and master's degrees, between bachelor's and diploma's, between master's and diploma's, or between PhD and diploma. The researcher attributes this to the fact that the PhD holders have a holistic view of education, in addition to their in-depth study of educational strategies in a way that enables them to choose the educational strategy that suits their students, their academic materials, and the circumstances they live in during times of war.

Meanwhile, the study has not showed any statistically significant differences in Palestine and Iraq. The researcher believes that this may be due to teachers' belief in the feasibility and effectiveness of using educational games in the learning process, as all teachers use them at the same level, regardless of their academic qualification.

4.2.3.6 The Discussion of the Results of the Sixth Section of the Eighth Question

Are there statistically significant differences at the level of significance ($\alpha = 0.05$) between the teachers' average use of educational games due to specialization?

The results of the study show that there are no statistically significant differences among the countries participating in the study (Palestine, Syria, Iraq, Yemen) in the teachers' average use of educational games in the educational process due to the variable of the teacher's specialization, scientific or literary major. The researcher believes that this result is due to the teacher's love for his profession and his desire to develop his performance regardless of his specialization. He also seeks to improve the performance of his students by using educational games that help them learn better in crises.

The results in each country show that there are no statistically significant differences in Palestine, Syria, and Iraq, while there are statistically significant differences in Yemen in favor of teachers with scientific majors. The researcher believes that this is due to the Yemeni teacher's conviction that scientific materials are easier and more appropriate to use educational games in terms of design, preparation, and application. They also believe that scientific subjects are more difficult than literary subjects, so they need to use educational games in them to simplify concepts and principles for students.

4.2.3.7 The Discussion of the Results of the Seventh Section of the Eighth Question

Are there statistically significant differences at the level of significance ($\alpha = 0.05$) between the teachers' average use of educational games due to years of experience in education?

The results of the study show that there are statistically significant differences among the countries participating in the study (Palestine, Syria, Iraq, Yemen) in the teachers' average use of educational games in the educational process due to the teacher's professional experience variable. When conducting the post hoc test to find out the differences in favor of any group, it is found that the differences are between the group of teachers with (5-10) years of experience and the group of teachers with less than 5 years of experience in favor of the latter. There are also statistically significant differences between the group of teachers with (5-10) years of experience and the group of teachers with experience of more than 10 years in favor of the latter. The researcher attributes this result to the fact that teachers with (1-5) years of experience are the younger teachers who have the energy to work. They are the technological generation that possesses high technological skills that qualify them to design, prepare and adapt digital educational games more than older teachers who are less able to use technology in education. As for the teachers with more than 10 years of experience, they are the teachers who have spent years in education, which has given them practical experience in using different teaching strategies through the training courses they have received during their professional careers. Among these strategies that they master is the strategy of educational games. However, they manage using and applying traditional educational games that they use in the face-to-face learning environment more than using digital educational games in the virtual learning environment.

The study does not show any statistically significant differences when conducting the test in each country separately in Palestine, Syria, Iraq, and Yemen. The researcher believes that this is due to the fact that all teachers use educational games to the same degree, but in different ways, according to the scope of their experience. As for the older and more experienced teachers, they tend to use traditional educational games in the face-to-face education environment because of their lack of experience and technological skills.

4.2.3.8 The Discussion of the Results of the Eighth Section of the Eighth Question

Are there statistically significant differences at the level of significance ($\alpha = 0.05$) between the teachers' average use of educational games due to the educational stage taught by the teacher?

The results of the study show that there are statistically significant differences among the countries participating in the study (Palestine, Syria, Iraq, Yemen) in the teachers' average use of educational games in the educational process due to the variable of the stage taught by the teacher. When conducting the post hoc test to find out the differences in favor of any group, it is found that the differences are between the group of teachers who teach the educational stage from (10-12) and the group of teachers who teach more than one educational stage in favor of the latter. There are also statistically significant differences between the group of teachers who teach the educational stage (5-9) and the group of teachers who teach more than one educational stage in favor of the latter. There are no statistically significant differences between the teachers who teach the educational stage from (1-4) and the group of teachers who teach more than one educational stage or who teach the educational stage from (5-9) or between those who teach the educational stage from (10-12). Also, there are no statistically significant differences between the group of teachers who teach the educational stage from (5-9) and those who teach the educational stage from (10-12). The researcher attributes this result to the fact that the educational stage (10-12) is a crucial stage in the students' life because it determines their university academic future, especially in Arab countries. Therefore, teachers at this stage are keen to give the largest amount of information regardless of the method and strategy, unlike teachers who teach more than one stage of study. They are knowledgeable and sufficiently experienced about the characteristics and needs of each stage of development for students. This helps them to use games in

terms of the level of difficulty and development in the educational game, which suits the age group they are teaching.

When conducting the test in each country separately, the results show that there are statistically significant differences in Syria between the group of teachers who teach the educational stage from (10-12) and those who teach the educational stage from (1-4) in favor of the latter. The study shows statistically significant differences between the group of teachers teaching the educational stage from (5-9) and those teaching the educational stage from (1-4) in favor of the latter. While the study does not show any statistically significant differences between teachers who teach the educational stage (10-12) and those who teach the educational stage (5-9), between those teaching the educational stage (5-9) and those teaching more than one stage, or between those teaching the educational stage (1-4) and those teaching more than one stage. The researcher attributes this result to the fact that the students of the educational stage (1-4) are the most in need of educational games to grab their attention, prevent their distraction, and maintain their focus in the classroom as long as possible; and this is what educational games are meant to achieve. Therefore, teachers of the educational stage (1-4) use games and this explains the absence of statistically significant differences in the use of educational games between teachers who teach the educational stage from (1-4) and those who teach more than one stage, as teachers who teach more than one stage may teach the educational stage from (1-4) as well. This makes them use it with the larger stages due to its importance and its prominent role in increasing motivation for learning and compensating for the educational loss.

The study shows that there are statistically significant differences in Iraq between teachers who teach the educational stage from (10-12) and those who teach more than one educational stage in favor of the latter. There are also differences between the teachers who teach the educational stage from (1-4) and those who teach more than one stage in favor of the latter. The study shows that there are no statistically significant differences between the teachers who teach the educational stage from (10-12) and those who teach the educational stage from (1-4) nor those who teach the educational stage from (5-9). Also, no differences are registered between those teaching the educational stage from (1-4) and those teaching the educational stage from (5-9), nor between those teaching the educational stage (5-9) and those teaching more than one

stage. The researcher attributes this result to the fact that teachers who teach more than one stage have used educational games and found their effectiveness in teaching students and stimulating their motivation to learn, which has prompted them to use them with the rest of the educational stages that they teach. As for the rest of the educational stages, educational games are used in the educational process to the same degree, perhaps due to their belief in the importance of games and their role in teaching all stages. The study reveals that Iraqi teachers use educational games more than Syrian and Yemeni teachers.

The study shows that there are no statistically significant differences among the average responses of teachers who use educational games, according to the variable of the school stage taught by the teacher in Palestine and Yemen. The researcher attributes this to the need for teachers who teach the various educational stages to use educational games, believing in the importance of education as the only way to get rid of the current situation in Yemen and to unite the two parts of the country. In Palestine, education is part of the struggle of the Palestinian people and their resistance to the occupier. Therefore, the Palestinian teacher is keen to use the best educational strategies, including the strategy of educational games that help provide education of good quality and quantity to his students.

4.3 Conclusions

In countries where there is no security and peace, as is the case in the research sample countries, the students of these countries need educational strategies such as the strategy of educational games. Such strategies can 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 of the qualitative and quantitative study agree on the prominent role played by educational games in compensating educational loss in all countries participating in the research (Palestine, Syria, Iraq, and Yemen). The educational games are considered as 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 acquire socially acceptable values and behaviors.

However, despite this agreement on the importance of educational games in student learning in crises, the participants in the study have reported the difficulty of applying this strategy in their schools and with their students. To them, this difficulty is a result of the lack of appropriate conditions for their use in terms of a physical and psychological environment. The lack of the technological requirements and the teachers' inability to use them optimally are among the obstacles that have complicated the adoption of this strategy. This necessitates to qualify and prepare teachers to implement the educational games, so that they can use them in an effective way to achieve learning goals in crises.

Today, education suffers from the digital gap, especially in countries that suffer from crises and difficult economic and technological conditions. The existence of a digital gap between the digital generation and between the curricula, tools, and strategies of education makes it difficult for this generation to learn with old traditional tools and strategies. This, accordingly, requires digitization of education in particular curricula, teaching methods and strategies. The gap is not only the result of not applying and exploiting digital educational games in educating a generation whose identity is mainly digital, but rather it is a general gap between the nature of education and the generation whose learning should be through technological means. The countries that suffer from crises are the most affected because they cannot provide the necessary technological environment for their students to learn similarly like the rest of the countries which are more fortunate. This makes providing the requirements of the digital generation very difficult in the research sample countries that do not have the ingredients for a decent and secure life. Therefore, the quality of educational support provided to these countries must be reviewed.

The results of the study show that Palestinian and Iraqi teachers use educational games more than Syrian and Yemeni teachers. It also reveals that there are no differences in the average use of educational games between male and female teachers in Palestine, Iraq, and Yemen and that there are statistically significant differences between males

and females in Syria in favor of females. The study also shows that private school teachers use educational games more than public school teachers and UNRWA school teachers. The results also show that teachers who have worked in the field of compensating for educational loss have been more likely to use educational games in Syria and Yemen than teachers who have not. However, no clear differences have appeared between them in Palestine and Iraq. It is also revealed through data analysis that the average use of educational games by teachers who hold a Ph.D. or diploma is greater than those who hold a bachelor's or master's degree. The results also manifest that there are no statistically significant differences in the use of educational games between teachers with scientific majors and those with literary majors. The results also show that teachers with experience of less than five years, teachers with experience of more than 10 years, and teachers who teach more than one educational stage, including stage from (1-4) are the most teachers who use educational games in their teaching practices.

The results of the qualitative and quantitative research unanimously agree that participants from Palestine, Syria, Iraq, and Yemen use educational games to attract student's attention and increase their enthusiasm for learning. The participants emphasize the importance of educational games in increasing motivation towards face-to-face and e-learning. They work to break the routine and stagnation of the class and provide information and skill in an enjoyable form for students. Digital educational games increase students' attention and help them review the information and keep it in their long-term memory. They also improve students' performance in general.

The results of the research show common challenges facing the employment of educational games in the educational process in Palestine, Syria, Iraq, and Yemen due to similar political and economic conditions. The participants have pointed out social challenges that embody the deterioration of the teacher's station, especially in Iraq and Yemen. They have also summarized the financial challenges in: the poor financial condition of the teacher and the learner, the inability to provide smart devices, tools, and materials necessary for learning in crises, weak Internet networks, and continuous power outages. To them, technological challenges are represented in 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 in employing 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 them, are 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 resulting from the practices of the occupation against students and teachers alike in Palestine. They have also emphasized the psychological effects of the war in the conflict zones in Syria, Iraq, and Yemen that are left on students and their motivation towards learning.

Participants from the four 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. This enables students of Teacher Preparation Programs to understand and apply the strategy of educational games, especially digital ones. Training teachers to use educational games in the classroom through seminars and training courses and educating parents about the importance of educational games in the educational process, especially in times of crisis, would also be of great help to overcome the previously mentioned challenges.

4.4 Recommendations

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 the 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.
4. Communicate with universities and institutes to enable students of Teacher Preparation Programs adopt teaching strategies that employ educational games, and to empower them with digital skills, through courses related to technology and e-learning.
5. Enable teachers to adopt educational strategies that deal with educational games, their design, and their production, considering them as designers, producers, and users at the same time. The teacher should be considered as an interactive participant as well.
6. Train teachers on techniques, programs, and tools for designing, producing, and developing educational games, and encourage them to cooperate with local, regional, and international experts in this field.
7. Design educational content, which includes employing educational games in teaching and learning, whether traditional or digital games and build digital learning content to facilitate blended or e-learning in schools.
8. Conducting experimental researches on the role of educational games in compensating for educational loss in the future.
9. Provide digital educational games that can be available offline.

4.5 Limitations of the Study

The limitations of the study are mainly related to the large size of the study population because it includes four Arab countries, which affects the quality of communication with the study sample. In addition, some participants have showed reluctance to participate in the research due to the security conditions in their countries. The communication with the participants in Syria, Iraq and Yemen has been difficult due to the difficult conditions that these countries live in, including power outages and poor internet networks. The coordination of the appropriate time to communicate with the participants has been difficult as well due to the limited hours in which electricity is

available, especially in Syria and Yemen. This has forced the researcher to conduct some interviews in several stages due to the interruption of the Internet. One of the limitations of the study is also that the participants in the study are not all experienced in the use, design, and production of educational games. Therefore, their perceptions about the expected benefit of using educational games in the educational process in times of crisis were depended on. 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.

4.6 Summary

Educational games are educational activities that are practiced in the classroom or in the virtual environment, individually or collectively, and are governed by a set of rules and laws that seek to achieve educational goals. Educational games are a strategy to motivate students to learn and compensate for educational loss, but there are still gaps in understanding how to use them correctly and effectively by teachers.

This research examines the role of educational games in compensating for educational loss and also examines the impact they leave on students' motivation toward face-to-face and e-learning during crises in four Arab countries (Palestine, Syria, Iraq, and Yemen). The results of the research show that the participants praise the prominent role of educational games in student learning, especially in times of crisis. However, they believe that it is difficult to implement this strategy in their countries as a result of the wars and conflicts that affected all aspects of their lives. The qualification of teachers to use educational games is insufficient. Curricula are not prepared to use this strategy in an effective way. Furthermore, the negative perception by parents and some teachers that educational games are often used as a waste of time hinder the efficiency of this strategy. In addition, the lack of an appropriate educational environment to use educational games due to weak capabilities and lack of resources also complicate the exploitation of this strategy. The economic situation, the difficult psychological situation of the teacher and the student, and the reluctance of many students and teachers to study and join the ranks of the fighters in the war are among the fundamental challenges that the implementation of the educational games face. The overcrowding of

classrooms with students as a result of displacement to safe places also had a great impact on the effective use of this strategy. Therefore, this research recommends the need to adopt this strategy by those in charge of the educational process. It urges qualifying teachers to implement educational games and to provide the essential requirements for using them in schools. It also recommends the necessity to provide free digital educational games for students and teachers in order to help students learn and get rid of anxiety, stress and psychological disorders resulting from war conditions in these countries.

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Appendices

Appendix (A)

Mission failitation letterAppendix

جامعة النجاح الوطنية

برنامج دكتوراه في التعلم والتعليم

An- Najah
National University
PhD Program in Teaching & Learning

التاريخ : 2022/5/26

إلى من يهمه الأمر

الموضوع : تسهيل مهمة

تقوم الباحثة كريمة عبد الكريم عبد الرحمن علي، رقم التسجيل (11970112)، بإعداد دراسة بعنوان

"The role of Educational Games in Compensating Educational loss & its impact on Student Motivation towards face-to-face & E-Learning in Crises"

وذلك استكمالا لمتطلبات التخرج من برنامج دكتوراة في التعلم والتعليم، يرجى من حضرتكم تسهيل مهمتها في جمع البيانات الخاصة بالدراسة من خلال تطبيق بعض الأدوات البحثية في وزارة التربية والتعليم وكافة مديرياتها، كالاستبانات والمقابلات النوعية، للفئات المعنية (مشرفو التدريب، المعلمون وذوي الخبرة والاختصاص في وزارة التربية والتعليم).

شاكرين لكم حسن تعاونكم .

مع وافر الاحترام ...

منسقة برنامج دكتوراه التعلم والتعليم

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Appendix (B)

The arbitrators of the questionnaire

The arbitrator names	Academic degree	Specialization	Institution
Abdel Nasser Qaddumi	Professor	Educational Measurement, Evaluation and Statistics	An-Najah National University
Murad Awad Allah	Associate Professor	Scientific and Environmental Education	Palestine Technical University Kadoorie
Suhair Al-Qasim	PhD	Curricula and Teaching Methods	The Ministry of Education
Sofia Rimawi	Assistant Professor	Educational Administration	Birzeit University

Appendix (C)

Interview Questions

Interview Questions Protocol

Interview Questions

The Role of Educational Games in Compensating Educational Loss and its Impact on Students' Motivation towards Face-to-Face and E-Learning in Crises

Self-Definition: I'm, the researcher Kareema Ali. I will conduct a study on the role of educational games in compensating educational losses and their impact on student's motivation toward face-to-face learning and e-learning in crises in four Arab countries. Those countries suffer from a double crisis, namely internal conflicts in addition to the Coronavirus crisis.

The Objective of the Interview: The interview aims to explore the role of educational games in compensating educational losses and their impact on students' motivation towards face-to-face and e-learning in crises in four Arab countries (Palestine, Syria, Iraq, and Yemen). It also aims to identify and highlight the challenges these countries have faced as well as to suggest the recommendations that may lead to develop the employment of educational games in the future.

Type of the Interview: An open, semi-structured interview will be conducted to suit the purposes of the study and to seek your opinions. It also provides a flexible structure for dialogue, interview management, and obtaining detailed information on the subject of the study.

Suitability of Expectations: The interview lasts for about an hour, and the researcher confirms that the details are completely confidential, and will only be used for scientific research purposes. The interview will be recorded, and then written down and dealt with. The researcher will ask some questions. If the question is not clear enough, please feel comfortable to ask for clarification so that you can answer it. Once the interview is finished, the researcher may have to contact you by phone, or in-person to ask you about unclear information**.**

Interview Ethics: The researcher emphasizes adherence to the ethics of conducting the interview, which are represented in the following ethics:

- Obtaining your consent to participate in this study.
- Your participation in the research is voluntary, and you have the right to withdraw from the research at any time.
- You will not suffer any physical or psychological harm as a result of participating in this study.
- Your data and identity will be strictly confidential.
- The interview data will be stored on the Cloud in a special Drive, and a code will be placed for it so that it will not be hacked, and the confidentiality of the data will be maintained.
- Your statements will not be quoted without your consent.
- After completing and emptying the interview, we will return it to you to approve the data in it.
- You will be informed of all issues related to the research, and given the freedom to comment on the study.
- Participants' statements will only be used for scientific research purposes.
- This study will be conducted under the supervision of An-Najah National University.

Terminology of study:

• **Definition of Educational Games:** They are a competitive and purposeful educational activity carried out by the learner individually or collectively, with specific procedures and laws regulating them, which stimulate the learner's motivation towards learning and make it more positive and interactive in acquiring experiences and skills (Abu Hussein, 2021).

• **Definition of Educational Loss**: It is the gap among the expected inputs, processes, and outputs of the educational process in the formal system (Afouneh and Salha, 2022).

• **Definition of Motivation towards Learning:** It is a belief within the student that directs him to learning goals, motivates him to good behavior, and enhances his learning and acquisition of knowledge (Budasi et al., 2020).

Study Questions

- What is the role of educational games in learning, both face-to-face and e−learning?
- What is the role of educational games in compensating for the educational loss that occurred as a result of crises such as conflicts, wars, and Corona pandemic in some Arab countries?
- What is the effect of educational games on the motivation towards learning among school students in some Arab countries in crises?
- What are the most important recommendations for developing the employment of educational games in the learning process in some Arab countries in crises?

Questions about the Participant's Background in the Interview:

Please tell me about yourself:

- What is your name?
- Which country are you from?
- What's your gender?
- What type of Institution do you work for?
- What is your academic qualification?
- Have you worked in the field of compensation for educational loss?
- What's your specialty?

Interview Questions

Introduction: Various crises such as conflicts, disasters and health crises like the Covid-19 pandemic have led to the disruption of schools, creating confusion in making decisions regarding distance education or face-to-face education, closing or opening schools, and students returning to their schools or receiving home education through social media. The adoption of various educational platforms has also been among these decisions. All of this has greatly affected the outcomes of the educational systems in various Arab countries, especially those countries that suffer from double crises such as the Coronavirus crisis, and the conflicts that these countries have been experiencing.

1. When schools are closed for long periods and the distance education system is imposed, explain the measures you have planned to deal with this new educational situation. What educational strategies do you think are most appropriate for education in crises?
2. Although games are generally used for recreational purposes, they can also be used in educational activities. Teachers employ different methods and strategies in the educational process. One of these strategies is learning through play. What is your concept of this strategy, and how is it used in the education process?
3. What experience do you have on the topic of employing educational games in the educational process?
4. From your point of view, is the strategy of educational games suitable for teaching all subjects taught in schools? explain that.
5. It is said that educational games are limited to primary school students. To what extent do you agree with or contradict this statement? Explain that.
6. Modern learning strategies seek to move from teacher-centered learning to active learner-centered learning. What is the role of educational games in face-to-face learning or e-learning, as one of the active learner-centered learning strategies?
7. Motivation is a concept that directs the behavior of the learner, and it is the main driver of the various activities of the individual. What is the concept of motivation from your point of view?
8. Through your experience and expertise in the educational field, what are the things that stimulate students' motivation towards face-to-face and e-learning in crises?
9. What is the effect of using educational games, whether traditional or digital, on students' motivation towards face-to-face and e-learning?
10. From your point of view, what are the most important skills that the teacher must possess to employ the strategy of digital and traditional educational games in learning in times of crisis to increase students' motivation towards learning?
11. The conflicts, disputes and wars that some Arab countries are exposed to have a direct impact on the education sector in them, which has led to many children dropping out from school for long periods as a result of displacement, fear and insecurity. Others turned to distance education in an effort to continue the learning process. Children are the most affected groups in society, as the repercussions of these conditions are reflected on them psychologically, socially and cognitively.

Thus, the level of their achievements has been affected too. All of this has led to the emergence of the problem of educational loss. How do you define educational loss based on the status of the educational system with its inputs and outputs in your country?

12. Many learning scholars and educators consider play as a vital element in the learning process. They find that it is a basic need for growth and learning, stimulating the brain to think. It also restores students to their activity and motivation to learn. From your point of view, how can educational games make up for what students have missed (Skills and knowledge) as a contribution to compensate for educational loss?
13. Disasters and crises happen suddenly overnight, and things are turned upside down. To what degree do you think that our teachers are prepared to employ educational games, especially digital ones when schools are closed and switched to distance e-learning?
14. Describe the most important challenges that may face the use of educational games strategy in face-to-face and e-learning to compensate for the educational loss in your country.
15. What do you recommend to overcome these challenges in the future to obtain the desired benefits from employing the educational games?
16. What do you recommend for developing the employment of educational games to compensate for the educational loss in the future, especially in times of crisis?

Appendix (D)

The questionnaire in its initial form

An-Najah National University

College of Graduate Studies

PhD in Science of Learning and Education

Questionnaire

Dear Participants,

Thank you for participating in this questionnaire. This questionnaire aims to find out the relationship between the use of educational games and compensation for educational losses on the one hand, and the increase in students' motivation towards their learning on the other hand. The questionnaire consists of two sections; The first section includes questions about personal information. The second section consists of (28) items classified under 2 domains. Please read all the questions carefully, and provide the answer that mostly expresses your opinion. The information you provide throughout the questionnaire will be kept confidential and will be used for research purposes only. All data will be reported in aggregate and will remain anonymous. Participation in the questionnaire is voluntary and you can exit at any time.

If there is any question, please contact the researcher: Kareema Ali, mobile: 00972599727972, Kareemanasir78@gmail.com

Section One:

This section is related to personal information. Please write the answer of the following questions or select the appropriate answer for you by ticking (√) at the specified place.

1. **Country**

( ) Palestine ( ) Syria ( ) Iraq ( ) Yemen

2. **Gender:**

( ) Male ( ) Female

3. **The institution I work for:**

( ) Private institution ( ) Public institution ( ) Other

4. **Qualification:**

( ) Bachelor ( ) Master ( ) Doctorate ( ) Other

5. **I worked in the field of compensation for educational loss:**

( ) Yes ( ) No

6. **Speciality:**

( ) Scientific major ( ) Literary major

7. **Professional Experience:**

( ) Less than 5 years ( ) 5-10 years ( ) More than 10 years

Section Two: This section includes (27) items. Please read these items carefully, then tick (√) in the appropriate place that reflects the degree of your agreement to the item.

The first domain: the use of educational games in the educational process.
Educational games: are a competitive and purposeful educational activity carried out by the learner individually or collectively, with specific procedures and laws that regulate them. They stimulate the learner's motivation towards learning and make it more positive and interactive in acquiring experiences and skills (Abu Hussein, 2021).

No.	Item	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Employing educational games in the educational process through.....						
1.	Use it as a modern educational strategy.					
2.	Use it to motivate students to learn.					
3.	Use it to enrich educational content.					
4.	It is used to link the different curricula.					
5.	Use it to help students learn in real life contexts.					
6.	Use it to promote collaborative work among students.					
7.	Use it to enhance communication among students.					
8.	Use it to promote creative thinking.					
9.	Use it to enhance critical thinking.					
10.	Use it to develop the ability to solve problems.					
11.	Use it in the development of the student's personality.					

The second domain: the role of educational games in compensating educational loss in crises.
Educational loss: It is the gap among the expected inputs, processes, and outputs of the educational process in the formal system (Afouneh and Salha, 2022).

No.	Item	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Educational games play a role in compensating for educational loss in crises through...						
12.	Providing flexibility in learning, which helps to make up for lost knowledge and skills.					

13.	Contribute to an increased focus on key concepts in learning.					
14.	Integrating the role of the family with the teacher in compensating the educational loss.					
15.	Contributing to the development of students' reading skills.					
16.	Contributing to the development of students' arithmetic skills.					
17.	Contribute to the development of students' writing skills.					
18.	Helping students receive immediate feedback on the results of their learning, which is reflected in compensating the educational loss.					
19.	Showing suitability for educational loss content.					
20.	Creating a positive interaction with the educational loss content of the various subjects.					
21.	Accelerating education by using it to catch up on lost knowledge and skills					
22.	Using them in diagnosing skills and concepts that need to be compensated.					
23.	Providing suitable alternatives to assess the level of students' performance.					
24.	Providing an opportunity for cooperative learning, which will reflect positively on compensating the educational loss.					

Third domain: The effect of educational games on students' motivation towards their learning in crises. **Motivation:** It is a belief within the student that directs him to learning goals, motivates him to good behavior, and enhances his learning and acquisition of knowledge (Budasi et al., 2020).						
No.	**Item**	**Strongly Agree**	**Agree**	**Neutral**	**Disagree**	**Strongly Disagree**
Educational games affect students' motivation towards their learning in crises through their ability to						
25.	Increase students' enthusiasm for learning.					
26.	Provide a positive competitive environment for learning.					
27.	Provide an appropriate learning environment for effective communication among students.					
28.	Employ all students' senses in the educational process.					
29.	Increase attention to the educational situation.					
30.	Increase students' interest in lesson activities.					
31.	Motivate students to continue learning.					
32.	Reduce boredom in class.					
33.	Motivate students to participate in class.					
34.	Reduce students' feelings of shyness during class participation.					
35.	Reduce students' sense of fear during class participation.					

Appendix (E)

The questionnaire in its final form

An-Najah National University

College of Graduate Studies

PhD in Science of Learning and Education

Questionnaire

Dear Participants,

The researcher is collecting data aiming to measure the relationship between the use of educational games and compensating educational loss on the one hand and increasing students' motivation towards learning in crises on the other hand, for the purposes of obtaining a doctorate degree. The questionnaire consists of two parts; The first section includes the personal information of the respondent, and the second section consists of (35) items classified into three areas. Please read all questions carefully, and indicate the answer that expresses your opinion. The data will be treated strictly confidentially, and for scientific research purposes only. Note that participation is optional.

If there is any question, please contact the researcher: Kareema Ali, mobile: 00972599727972, Karima.ali@stu.najah.edu

Section One:

This section is related to personal information. Please write the answer of the following questions or select the appropriate answer for you by ticking (√) at the specified place.

1. Country

( ) Palestine ( ) Yemen ( ) Syria ( ) Iraq

2. Gender:

( ) Male ( ) Female

3. The institution I work for is:

( ) Private institution ( ) Public institution ( ) UNRWA

4. Qualification:

( ) Diploma ( ) Bachelor ( ) Master ( ) Doctorate

5. I worked in the field of compensation for educational loss:

( ) Yes ( ) No

6. Specialty:

( ) Scientific major ( ) Literary major

7. Professional Experience:

( ) Less than 5 years ( ) 5-10 years ( ) More than 10 years

8. The grade level I'm teaching:

( ) From 1-4 grade ( ) from 5-9 grade

( ) from 10-12 grade ( ) I teach more than one grade level

Section Two: This section includes (35) items related to the use of educational games in the educational process, its role in compensating educational loss, and its impact on students' motivation towards learning in crises. Please read these items carefully, then tick (√) in the appropriate place that reflect the degree of your agreement to the item.

The first domain: the use of educational games in the educational process.

Educational games: are a competitive and purposeful educational activity carried out by the learner individually or collectively, with specific procedures and laws that regulate them. They stimulate the learner's motivation towards learning and make it more positive and interactive in acquiring experiences and skills (Abu Hussein, 2021).

No.	Item	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Employing educational games in the educational process through.....						
1.	Use it as a modern educational strategy.					
2.	Use it to enrich educational content.					
3.	It is used to link the different curricula.					
4.	Use it to help students learn in real life contexts.					
5.	Use it to promote collaborative work among students.					
6.	Use it to promote creative thinking.					
7.	Use it to enhance critical thinking.					
8.	Use it to develop the ability to solve problems.					
9.	Use it in the development of the student's personality					

The second domain: the role of educational games in compensating for educational loss in crises.

Educational loss: It is the gap among the expected inputs, processes, and outputs of the educational process in the formal system (Afouneh and Salha, 2022).

No.	Item	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Educational games play a role in compensating for educational loss in crises through...						
10.	Providing flexibility in learning, which helps to make up for lost knowledge and skills.					
11.	Contributing to an increased focus on key concepts in learning.					

12.	Integrating the role of the family with the teacher in compensating the educational loss.					
13.	Contributing to the development of students' reading skills.					
14.	Contributing to the development of students' arithmetic skills.					
15.	Contributing to the development of students' writing skills.					
16.	Helping students receive immediate feedback on the results of their learning, which is reflected in compensating the educational loss.					
17.	Showing suitability for educational loss content.					
18.	Creating a positive interaction with the educational loss content of the various subjects.					
19.	Accelerating education by using it to catch up on lost knowledge and skills					
20.	Using them in diagnosing skills and concepts that need to be compensated.					
21.	Providing suitable alternatives to assess the level of students' performance.					
22.	Providing an opportunity for cooperative learning, which will reflect positively on compensating the educational loss.					
Third domain: The effect of educational games on students' motivation towards their learning in crises. **Motivation:** It is a belief within the student that directs him to learning goals, motivates him to good behavior, and enhances his learning and acquisition of knowledge (Budasi et al., 2020).						
No.	**Item**	**Strongly Agree**	**Agree**	**Neutral**	**Disagree**	**Strongly Disagree**
Educational games affect students' motivation towards their learning in crises through...						
23.	Increasing students' enthusiasm for learning.					

24.	Providing a positive competitive environment for learning.					
25.	Providing an appropriate learning environment for effective communication among students.					
26.	Increasing attention to the educational situation.					
27.	Increasing students' interest in lesson activities.					
28.	Motivating students to continue learning.					
29.	Reducing boredom in class.					
30.	Motivating students to participate in class.					
31.	Reducing students' feelings of shyness during class participation.					
32.	Reducing students' sense of fear during class participation.					

Appendix (F)

Characteristics of the study participants

Participant No.	Country	Academic degree	Specialization	Type of work institution
P1	Palestine	PhD	Mathematics	Public
P2	Palestine	Master	Mathematics	Public
P3	Palestine	Master	Sciences	Public
P4	Palestine	BA	Sciences	Public
P5	Palestine	Master	Arabic	Private
P6	Palestine	Master	English	Public
P7	Palestine	Master	Arabic	Private
P8	Palestine	PhD	Human Development	Public
P9	Palestine	PhD	Sciences	Private
P10	Palestine	PhD	Human Development	Private
P11	Syria	BA	Learning Techniques	Private
P12	Syria	PhD	Measurement and Evaluation	Public
P13	Syria	PhD	Curricula and Teaching Methods	Public
P14	Syria	PhD	Child Education	Public
P15	Syria	BA	Primary Education	Public
P16	Syria	BA	Sciences	Private
P17	Syria	BA	Primary Education	Public
P18	Syria	PhD	Measurement and Evaluation	Public
P19	Syria	BA	English	Private
P20	Syria	PhD	Mathematics	Public
P21	Iraq	Master	Physics	Public
P22	Iraq	Master	Curricula and Teaching Methods	Public
P23	Iraq	Master	Primary Education	Public
P24	Iraq	Master	Sciences	Public
P25	Iraq	PhD	Biology	Public
P26	Iraq	Master	Physics	Public
P27	Iraq	Master	Sciences	Public

Participant No.	Country	Academic degree	Specialization	Type of work institution
P28	Iraq	Master	Sciences	Private
P29	Iraq	PhD	Human Development	Public
P30	Iraq	BA	Primary Education	Public
P31	Yemen	PhD	Sciences	Public
P32	Yemen	PhD	Arabic	Public
P33	Yemen	PhD	Curricula and Teaching Methods	Private
P34	Yemen	PhD	Curricula and Teaching Methods	Public
P35	Yemen	PhD	Arabic	Public
P36	Yemen	PhD	Curricula and Teaching Methods	Public
P37	Yemen	PhD	Educational Technology	Private
P38	Yemen	Master	Arabic	Private
P39	Yemen	PhD	Human Development	Public
P40	Yemen	PhD	Sciences	Public

Appendix (G)

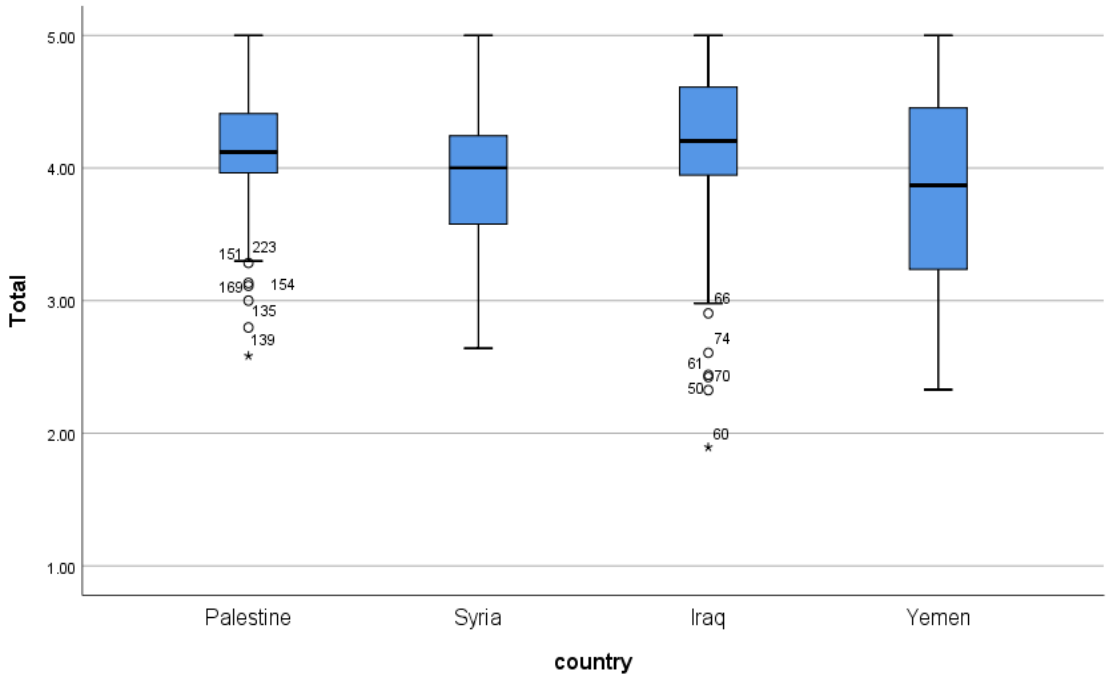
Examination the normal distribution and the outliers.

Table 1: Examination of the normal distribution of the variable of employing educational games.

Tests of Normality							
	country	*Kolmogorov-Smirnov*[a]			*Shapiro-Wilk*		
		Statistic	***df***	***Sig.***	***Statistic***	***df***	***Sig.***
Total	Palestine	.128	109	.000	.945	109	.000
	Syria	.091	100	.039	.978	100	.090
	Iraq	.121	109	.000	.886	109	.000
	Yemen	.094	102	.028	.956	102	.002
a. Lilliefors Significance Correction							

The outliers test

The box plot graph which shows the outliers



Appendix (H)

Correlation Test

The Spearman's coefficient correlation test which investigates the relationship between employing educational games and compensating educational loss for each country separately.

Table 1: Examination of the correlation between employing educational games and compensating educational loss in Palestine.

Correlations				
			M_Using_ EG	**M_Compensating _EL**
Spearman's rho	M_Using_EG	Correlation Coefficient	1.000	.470**
		Sig. (2-tailed)	.	.000
		N	109	109
	M_Compensating _EL	Correlation Coefficient	.470**	1.000
		Sig. (2-tailed)	.000	.
		N	109	109
**. Correlation is significant at the 0.01 level (2-tailed).				

Table 2: Examination of the correlation between employing educational games and compensating educational loss in Syria.

Correlations				
			M_Using_ EG	**M_Compensating_EL**
Spearman's rho	M_Using_EG	Correlation Coefficient	1.000	.817**
		Sig. (2-tailed)	.	.000
		N	100	100
	M_Compensating _EL	Correlation Coefficient	.817**	1.000
		Sig. (2-tailed)	.000	.
		N	100	100
**. Correlation is significant at the 0.01 level (2-tailed).				

Table 3: Examination of the correlation between employing educational games and compensating educational loss in Iraq.

Correlations				
			M_Usind_EG	**M_Compensating_EL**
Spearman's rho	M_Usind_EG	Correlation Coefficient	1.000	.750**
		Sig. (2-tailed)	.	.000
		N	109	109
	M_Compensating_EL	Correlation Coefficient	.750**	1.000
		Sig. (2-tailed)	.000	.
		N	109	109
**. Correlation is significant at the 0.01 level (2-tailed).				

Table 4: Examination of the correlation between employing educational games and compensating educational loss in Yemen.

Correlations				
			M_Using_EG	**M_Compensating_El**
Spearman's rho	M_Using_EG	Correlation Coefficient	1.000	.906**
		Sig. (2-tailed)	.	.000
		N	102	102
	M_Compensating_El	Correlation Coefficient	.906**	1.000
		Sig. (2-tailed)	.000	.
		N	102	102
**. Correlation is significant at the 0.01 level (2-tailed).				

Table 5: Examination of the correlation between employing educational games and increasing motivation towards face-to-face and e-learning in Palestine.

Correlations				
			M_Using_EG	**M_Effect_EG_Motivation**
Spearman's rho	M_Using_EG	Correlation Coefficient	1.000	.650**
		Sig. (2-tailed)	.	.000
		N	109	109
	M_Effect_EG_Motivation	Correlation Coefficient	.650**	1.000
		Sig. (2-tailed)	.000	.
		N	109	109
**. Correlation is significant at the 0.01 level (2-tailed).				

Table 6: Examination of the correlation between employing educational games and increasing motivation towards face-to-face and e-learning in Syria.

Correlations				
			M_Using_EG	**M_Effece_EG_Motivatio**
Spearman's rho	M_Using_EG	Correlation Coefficient	1.000	.821**
		Sig. (2-tailed)	.	.000
		N	100	100
	M_Effece_EG_Motivatio	Correlation Coefficient	.821**	1.000
		Sig. (2-tailed)	.000	.
		N	100	100
**. Correlation is significant at the 0.01 level (2-tailed).				

Table 7: Examination of the correlation between employing educational games and increasing motivation towards face-to-face and e-learning in Iraq.

Correlations				
			M_Usind_ EG	**M_Effect_EG_ Motivation**
Spearman's rho	M_Usind_EG	Correlation Coefficient	1.000	.705**
		Sig. (2-tailed)	.	.000
		N	109	109
	M_Effect_EG_ Motivation	Correlation Coefficient	.705**	1.000
		Sig. (2-tailed)	.000	.
		N	109	109
**. Correlation is significant at the 0.01 level (2-tailed).				

Table 8: Examination of the correlation between employing educational games and increasing motivation towards face-to-face and e-learning in Yemen.

Correlations				
			M_Using_E G	**M_Effect_EG_ Motivation**
Spearman's rho	M_Using_EG	Correlation Coefficient	1.000	.864**
		Sig. (2-tailed)	.	.000
		N	102	102
	M_Effect_EG_ Motivation	Correlation Coefficient	.864**	1.000
		Sig. (2-tailed)	.000	.
		N	102	102
**. Correlation is significant at the 0.01 level (2-tailed).				

Appendix (I)

Examination of the differences between employing educational games due to gender variable

The Mann Whitney *U* test to compare the using of educational games for male and female respondents for each country separately.

Table 1: Examination of the differences between employing educational games due to gender variable in Palestine.

Test Statistics[a]	
	M_Using_EG
Mann-Whitney U	1109.000
Wilcoxon W	4190.000
Z	-.680
Asymp. Sig. (2-tailed)	.497
a. Grouping Variable: gender	

Table 2: Examination of the differences between employing educational games due to gender variable in Syria.

Test Statistics[a]	
	M_Using_EG
Mann-Whitney U	802.000
Wilcoxon W	1432.000
Z	-2.431
Asymp. Sig. (2-tailed)	.015
a. Grouping Variable: gender	

Table 3: Examination of the differences between employing educational games due to gender variable in Iraq.

Test Statistics[a]	
	M_Using_EG
Mann-Whitney U	609.000
Wilcoxon W	729.000
Z	-.789
Asymp. Sig. (2-tailed)	.430
a. Grouping Variable: gender	

Table 4: Examination of the differences between employing educational games due to gender variable in Yemen.

Test Statistics[a]	
	M_Using_EG
Mann-Whitney U	1087.500
Wilcoxon W	2312.500
Z	-1.415
Asymp. Sig. (2-tailed)	.157
a. Grouping Variable: gender	

Appendix (J)

Examination of the differences between employing educational games due to type of school variable

The Kruskal-Wallis H test to compare the using of educational games for type of school respondents for each country separately.

Table 1: Examination of the differences between employing educational games due to type of school variable in Palestine.

Test Statistics[a,b]	
	M_Using_EG
Kruskal-Wallis H	8.512
Df	2
Asymp. Sig.	.014
a. Kruskal Wallis Test	
b. Grouping Variable: School type	

Table 2: Pairwise Comparisons between differences in employing educational games due to type of school variable in Palestine.

Pairwise Comparisons of School type					
Sample 1-Sample 2	***Test Statistic***	***Std. Error***	***Std. Test Statistic***	***Sig.***	***Adj. Sig.[a]***
Public-UNRWA	-25.566	15.925	-1.605	.108	.325
Public-Private	-45.525	18.301	-2.487	.013	.039
UNRWA-Private	19.958	23.862	.836	.403	1.000
Each row tests the null hypothesis that the Sample 1 and Sample 2 distributions are the same. Asymptotic significances (2-sided tests) are displayed. The significance level is.05.					
a. Significance values have been adjusted by the Bonferroni correction for multiple tests.					

Table 3: Examination of the differences between employing educational games due to type of school variable in Syria.

Test Statistics[a,b]	
	M_Using_EG
Kruskal-Wallis H	10.049
Df	2
Asymp. Sig.	.007
a. Kruskal Wallis Test	
b. Grouping Variable: School type	

Table 4: Pairwise Comparisons between differences in employing educational games due to type of school variable in Syria.

Pairwise Comparisons of School type					
Sample 1-Sample 2	***Test Statistic***	***Std. Error***	***Std. Test Statistic***	***Sig.***	***Adj. Sig.[a]***
UNRWA-Public	10.500	7.140	1.471	.141	.424
UNRWA-Private	26.208	8.352	3.138	.002	.005
Public-Private	-15.708	7.140	-2.200	.028	.083
Each row tests the null hypothesis that the Sample 1 and Sample 2 distributions are the same. Asymptotic significances (2-sided tests) are displayed. The significance level is.05.					
a. Significance values have been adjusted by the Bonferroni correction for multiple tests.					

Table 5: Examination of the differences between employing educational games due to type of school variable in Iraq.

Test Statistics[a]	
	M_Usind_EG
Mann-Whitney U	672.500
Wilcoxon W	808.500
Z	-.614
Asymp. Sig. (2-tailed)	.539
a. Grouping Variable: School type	

Table 6: Examination of the differences between employing educational games due to type of school variable in Yemen.

Test Statistics[a]	
	M_Using_EG
Mann-Whitney U	778.500
Wilcoxon W	2858.500
Z	-3.032
Asymp. Sig. (2-tailed)	.002
a. Grouping Variable: School type	

Table 7: Pairwise Comparisons between differences in employing educational games due to type of school variable in Yemen.

Ranks				
	School type	***N***	***Mean Rank***	***Sum of Ranks***
M_Using_EG	Public	64	44.66	2858.50
	Private	38	63.01	2394.50
	Total	102		

Appendix (K)

Examination of the differences between employing educational games due to work in the field of educational loss

The Mann Whitney *U* test to compare the using of educational games for Yes and No respondents for each country separately.

Table 1: Examination of the differences between employing educational games due to work in the field of educational loss in Palestine.

Test Statistics[a]	
	M_Using_EG
Mann-Whitney U	474.000
Wilcoxon W	552.000
Z	-1.058
Asymp. Sig. (2-tailed)	.290
a. Grouping Variable: Work in the field of educational loss	

Table 2: Examination of the differences between employing educational games due to work in the field of educational loss in Syria.

Test Statistics[a]	
	M_Using_EG
Mann-Whitney U	206.000
Wilcoxon W	531.000
Z	-5.839
Asymp. Sig. (2-tailed)	.000
a. Grouping Variable: Work in the field of educational loss	

Table 3: Examination of the differences between employing educational games due to work in the field of educational loss in Iraq.

Test Statistics[a]	
	M_Usind_EG
Mann-Whitney U	1353.000
Wilcoxon W	2434.000
Z	-.591
Asymp. Sig. (2-tailed)	.554
a. Grouping Variable: Work in the field of educational loss	

Table 4: Examination of the differences between employing educational games due to work in the field of educational loss in Yemen.

Test Statistics[a]	
	M_Using_EG
Mann-Whitney U	623.000
Wilcoxon W	1526.000
Z	-4.337
Asymp. Sig. (2-tailed)	.000
a. Grouping Variable: Work in the field of educational loss	

Appendix (L)

Examination of the differences between employing educational games due to qualification variable

The Kruskal-Wallis H test to compare the using of educational games for educational qualification respondents for each country separately.

Table 1: Examination of the differences between employing educational games due to qualification variable in Palestine.

Test Statistics[a,b]	
	M_Using_EG
Kruskal-Wallis H	4.030
Df	3
Asymp. Sig.	.258
a. Kruskal Wallis Test	
b. Grouping Variable: Qualification	

Table 2: Examination of the differences between employing educational games due to qualification variable in Syria.

Test Statistics[a,b]	
	M_Using_EG
Kruskal-Wallis H	18.125
Df	3
Asymp. Sig.	.000
a. Kruskal Wallis Test	
b. Grouping Variable: Qualification	

Table 3: Pairwise Comparisons between differences in employing educational games due to Qualification variable in Syria.

Pairwise Comparisons of Qualification					
Sample 1-Sample 2	***Test Statistic***	***Std. Error***	***Std. Test Statistic***	***Sig.***	***Adj. Sig.[a]***
Bachelor-Master	-.196	7.520	-.026	.979	1.000
Bachelor-Diploma	33.531	9.412	3.562	.000	.002
Bachelor-PhD	-41.985	17.074	-2.459	.014	.084
Master-Diploma	33.335	10.961	3.041	.002	.014
Master-PhD	-41.789	17.974	-2.325	.020	.120
Diploma-PhD	-8.455	18.844	-.449	.654	1.000
Each row tests the null hypothesis that the Sample 1 and Sample 2 distributions are the same. Asymptotic significances (2-sided tests) are displayed. The significance level is.05.					
a. Significance values have been adjusted by the Bonferroni correction for multiple tests.					

Table 4: Examination of the differences between employing educational games due to qualification variable in Iraq.

Test Statistics[a,b]	
	M_Usind_EG
Kruskal-Wallis H	3.972
Df	3
Asymp. Sig.	.265
a. Kruskal Wallis Test	
b. Grouping Variable: Qualification	

Table 5: Examination of the differences between employing educational games due to qualification variable in Yemen.

Test Statistics[a,b]	
	M_Using_EG
Kruskal-Wallis H	10.035
Df	3
Asymp. Sig.	.018
a. Kruskal Wallis Test	
b. Grouping Variable: Qualification	

Table 6: Pairwise Comparisons between differences in employing educational games due to Qualification variable.

Pairwise Comparisons of Qualification					
Sample 1-Sample 2	***Test Statistic***	***Std. Error***	***Std. Test Statistic***	***Sig.***	***Adj. Sig.[a]***
Bachelor-Master	-9.932	7.198	-1.380	.168	1.000
Bachelor-PhD	-32.321	11.698	-2.763	.006	.034
Bachelor-Diploma	39.750	29.753	1.336	.182	1.000
Master-PhD	-22.390	12.822	-1.746	.081	.485
Master-Diploma	29.818	30.212	.987	.324	1.000
PhD-Diploma	7.429	31.588	.235	.814	1.000
Each row tests the null hypothesis that the Sample 1 and Sample 2 distributions are the same. Asymptotic significances (2-sided tests) are displayed. The significance level is.05.					
a. Significance values have been adjusted by the Bonferroni correction for multiple tests.					

Appendix (M)

Examination of the differences between employing educational games due to specialization

The Mann Whitney *U* test to compare the using of educational games for scientific major and literary major respondents for each country separately.

Table 1: Examination of the differences between employing educational games due to specialization in Palestine.

Test Statistics[a]	
	M_Using_EG
Mann-Whitney U	1041.000
Wilcoxon W	1707.000
Z	-1.780
Asymp. Sig. (2-tailed)	.075
a. Grouping Variable: Specialization	

Table 2: Examination of the differences between employing educational games due to specialization in Syria.

Test Statistics[a]	
	M_Using_EG
Mann-Whitney U	1076.500
Wilcoxon W	2787.500
Z	-.991
Asymp. Sig. (2-tailed)	.322
a. Grouping Variable: Specialization	

Table 3: Examination of the differences between employing educational games due to specialization in Iraq.

Test Statistics[a]	
	M_Usind_EG
Mann-Whitney U	1366.000
Wilcoxon W	3196.000
Z	-.636
Asymp. Sig. (2-tailed)	.525
a. Grouping Variable: Specialization	

Table 4: Examination of the differences between employing educational games due to specialization in Yemen.

Test Statistics[a]	
	M_Using_EG
Mann-Whitney U	985.000
Wilcoxon W	2638.000
Z	-2.008
Asymp. Sig. (2-tailed)	.045
a. Grouping Variable: Specialization	

Appendix (N)

Examination of the differences between employing educational games due to professional experience variable

The Kruskal-Wallis H test to compare the using of educational games for professional experience respondents for all countries.

Table 1: Examination of the differences between employing educational games due to professional experience variable

Test Statistics[a,b]	
	M_Using_EG
Kruskal-Wallis H	10.412
Df	2
Asymp. Sig.	.005
a. Kruskal Wallis Test	
b. Grouping Variable: Professional Experience	

The Kruskal-Wallis H test to compare the using of educational games for professional experience respondents for each country separately

Table 2: Examination of the differences between employing educational games due to professional experience variable in Palestine.

Test Statistics[a,b]	
	M_Using_EG
Kruskal-Wallis H	4.139
Df	2
Asymp. Sig.	.126
a. Kruskal Wallis Test	
b. Grouping Variable: Professional Experience	

Table 3: Examination of the differences between employing educational games due to professional experience variable in Syria.

Test Statistics[a,b]	
	M_Using_EG
Kruskal-Wallis H	.051
Df	2
Asymp. Sig.	.975
a. Kruskal Wallis Test	
b. Grouping Variable: Professional Experience	

Table 4: Examination of the differences between employing educational games due to professional experience variable in Iraq.

Test Statistics[a,b]	
	M_Usind_EG
Kruskal-Wallis H	4.557
Df	2
Asymp. Sig.	.102
a. Kruskal Wallis Test	
b. Grouping Variable: Professional Experience	

Table 5: Examination of the differences between employing educational games due to professional experience variable in Yemen.

Test Statistics[a,b]	
	M_Using_EG
Kruskal-Wallis H	3.929
Df	2
Asymp. Sig.	.140
a. Kruskal Wallis Test	
b. Grouping Variable: Professional Experience	

Appendix (O)

Examination of the differences between employing educational games due to the grade level of teaching variable

The Kruskal-Wallis H test to compare the using of educational games grade level of teaching respondents for all countries.

Table 1: Examination of the differences between employing educational games due to the grade level of teaching variable

Test Statistics[a,b]	
	M_Using_EG
Kruskal-Wallis H	8.587
Df	3
Asymp. Sig.	.035
a. Kruskal Wallis Test	
b. Grouping Variable: The grade level of teaching	

The Kruskal-Wallis H test to compare the using of educational games grade level of teaching respondents for each country separately.

Table 2: Examination of the differences between employing educational games due to the grade level of teaching variable in Palestine.

Test Statistics[a,b]	
	M_Using_EG
Kruskal-Wallis H	1.141
Df	3
Asymp. Sig.	.767
a. Kruskal Wallis Test	
b. Grouping Variable: The grade level of teaching	

Table 3: Examination of the differences between employing educational games due to the grade level of teaching variable in Syria.

Test Statistics[a,b]	
	M_Using_EG
Kruskal-Wallis H	10.560
Df	3
Asymp. Sig.	.014
a. Kruskal Wallis Test	
b. Grouping Variable: The grade level of teaching	

Table 4: Pairwise Comparisons between differences in employing educational games due to the grade level of teaching variable.

Pairwise Comparisons of The grade level of teaching					
Sample 1-Sample 2	***Test Statistic***	***Std. Error***	***Std. Test Statistic***	***Sig.***	***Adj. Sig.[a]***
From 10-12 grade-From 5-9 grade	21.731	11.900	1.826	.068	.407
From 10-12 grade-More than one grade	-23.929	12.555	-1.906	.057	.340
From 10-12 grade-From 1-4 grade	36.080	12.039	2.997	.003	.016
From 5-9 grade-More than one grade	-2.197	7.751	-.284	.777	1.000
From 5-9 grade-From 1-4 grade	14.349	6.884	2.084	.037	.223
More than one grade-From 1-4 grade	12.152	7.963	1.526	.127	.762
Each row tests the null hypothesis that the Sample 1 and Sample 2 distributions are the same. Asymptotic significances (2-sided tests) are displayed. The significance level is.05.					
a. Significance values have been adjusted by the Bonferroni correction for multiple tests.					

Table 5: Examination of the differences between employing educational games due to the grade level of teaching variable in Iraq.

Test Statistics[a,b]	
	M_Usind_EG
Kruskal-Wallis H	10.547
Df	3
Asymp. Sig.	.014
a. Kruskal Wallis Test	
b. Grouping Variable: The grade level of teaching	

Table 6: Pairwise Comparisons between differences in employing educational games due to the grade level of teaching variable.

Pairwise Comparisons of the grade level of teaching					
Sample 1-Sample 2	***Test Statistic***	***Std. Error***	***Std. Test Statistic***	***Sig.***	***Adj. Sig.[a]***
From 10-12 grade-From 1-4 grade	12.167	12.532	.971	.332	1.000
From 10-12 grade-From 5-9 grade	16.060	13.085	1.227	.220	1.000
From 10-12 grade-More than one grade	-30.100	11.992	-2.510	.012	.072
From 1-4 grade-From 5-9 grade	-3.893	8.961	-.434	.664	1.000
From 1-4 grade-More than one grade	-17.933	7.273	-2.466	.014	.082
From 5-9 grade-More than one grade	-14.040	8.189	-1.714	.086	.519
Each row tests the null hypothesis that the Sample 1 and Sample 2 distributions are the same. Asymptotic significances (2-sided tests) are displayed. The significance level is.05.					
a. Significance values have been adjusted by the Bonferroni correction for multiple tests.					

Table 7: Examination of the differences between employing educational games due to the grade level of teaching variable in Yemen.

Test Statistics[a,b]	
	M_Using_EG
Kruskal-Wallis H	.793
Df	3
Asymp. Sig.	.851
a. Kruskal Wallis Test	
b. Grouping Variable: The grade level of teaching	

Appendix (P)

Certificate of acceptance of the research extracted from the dissertation

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جامعة النَّجاح الوطنيَّة
كليَّة الدّراسات العليا

دور الألعاب التعليمية في تعويض الفاقد التعليمي وتأثيرها على دافعية الطلبة نحو التعلم الوجاهي والإلكتروني في الأزمات

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أ. د. دانييل برغس

قدمت هذه الأطروحة استكمالاً لمتطلبات الحصول على درجة الدكتوراه في التعلم والتعليم،
بكلية الدراسات العليا في جامعة النجاح الوطنية في نابلس – فلسطين.

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الملخص

جاءت الحاجة لإجراء هذه الدراسة لتسليط الضوء على استراتيجية الألعاب التعليمية كاستراتيجية تساعد الطلبة على التعلم في الأزمات وتعويض ما فاتهم من معارف ومهارات وقيم، وتزيد دافعيتهم نحو التعلم. هدفت هذه الدراسة للتحقيق في دور الألعاب التعليمية في تعويض الفاقد التعليمي وتأثيرها على دافعية الطلبة نحو التعلم الوجاهي والإلكتروني في الأزمات في أربع دول عربية هي: فلسطين، سوريا، العراق، اليمن. اتبعت الدراسة المنهج المختلط باستخدام منهجين: المنهج النوعي الوصفي بتصميم دراسة الحالة المتعددة باستخدام مقابلات مفتوحة شبه منظمة مع (40) خبيرا تربويا. والمنهج الوصفي الكمي باستخدام استبانة تمت الإجابة عنها من قبل (420) معلما من الدول الأربع. أظهرت نتائج الدراسة الدور البارز الذي تلعبه الألعاب التعليمية في تعويض الفاقد التعليمي وزيادة دافعية الطلبة نحو التعلم الأزمات رغم صعوبة تطبيقها في بلاد ينعدم فيها الأمن. وتوصلت الدراسة إلى وجود علاقة قوية موجبة بين استخدام الألعاب التعليمية وتعويض الفاقد التعليمي وزيادة دافعية الطلبة نحو التعلم في الأزمات. وأظهرت نتائج الدراسة أن المعلمين الفلسطينيين والعراقيين يستخدمون الألعاب التعليمية أكثر من المعلمين السوريين واليمنيين. كما كشفت عن عدم وجود فروق في متوسطات استخدام الألعاب التعليمية بين المعلمين الذكور والإناث أو بين المعلمين ذوي التخصص العلمي أو الأدبي. بينما يوجد فروق دالة احصائيا تعزى للمتغيرات: نوع المدرسة، والعمل في مجال تعويض الفاقد التعلمي، والمؤهل العلمي، والخبرة المهنية، والمرحلة التعليمية التي يدرسها. وكشفت نتائج الدراسة عن تحديات مشتركة تواجه توظيف الألعاب التعليمية وهذه التحديات: تحديات اجتماعية، واقتصادية، وتكنولوجية، وتحديات لها علاقة بالبيئة المدرسية، إضافة للتحديات النفسية. وأظهرت الدراسة أنه من الممكن التغلب على هذه التحديات عن طريق

توفير مصادر التمويل، وإعداد الخطط لتوظيفها بشكل فعال، وتطوير قدرات المعلمين في استخدامها في ممارساتهم التدريسية. وخلصت الدراسة إلى أن الألعاب التعليمية تلعب دوراً مهما في تعويض الفاقد التعليمي وزيادة دافعية الطلبة نحو التعلم في الأزمات. وأوصت الدراسة بضرورة تبني الألعاب التعليمية في العملية التعليمية.

الكلمات المفتاحية: الألعاب التعليمية، الفاقد التعليمي، الدافعية، التعلم الإلكتروني، التعليم في الأزمات.