Lecture Notes in Educational Technology

Saida Affouneh
Soheil Salha
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Sameer Abu-Eisheh *Editors*

Education in the Post-COVID-19 Era—Opportunities and Challenges

Proceeding of 2022 International Conference on Learning and Teaching in the Digital World

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Foreword

Education during the pandemic has meant a combination of learning and teaching methodologies along with psycho-emotional care for both students and teachers, and also for parents, academic managers, and other roles within the community. The society seems to have discovered all that online learning and online services can do because of the big tragedy that COVID-19 has been, and still is. However, we must remember that online learning has existed for more than 25 years, that hybrid learning has existed for almost the same time, and that since then it has been a great help in certain settings and specific sectors. For example, in rural areas, in areas with limited connectivity, in personal situations of little availability for travel, in people with functional diversity or with difficulty in fulfilling a face-to-face pattern, in one way or another. For almost three decades, online education has been a pillar that is now endorsed and highlighted by an international crisis situation. We must not forget, however, that COVID-19 is terrible, but it is not the only crisis that exists. There are dozens of other situations that make of education in times of crisis a commonplace. From earthquakes to tsunamis, from wars to occupations, or famines, energy crises and other fatalities, both natural and man-made.

The book in your hands binds up a series of articles presented during The 3rd International Conference on Learning and Teaching in the Digital World under the theme "The Future of Education in the post-COVID-19 era". This conference, and the subsequent output that this book is, addresses significant aspects of curriculum design, educational methodology and the future that awaits us, by the chapters' authors, namely students and teachers. From self-directed learning to games, through online assessment or remote academic management, the contributions that can be made in educational structure and implementation are endless. As teachers and students, as

researchers and managers, as key elements within the educational chain, we have the responsibility to design, apply, evaluate, and keep on improving; and to do that in a more personalized, more effective and with a greater impact way, in any aspect of the process. Indeed, the compilation of articles that we present in this volume contributes significantly to this objective.

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Preface

Education in Crisis has its own terminology and policies, technology has a great impact on education, especially during the Pandemic. All educational institutions had shifted online in order to sustain their education system but in different ways, approaches and models depending on their capacities and capabilities. A paradigm shift was needed in order to continue teaching and learning while a high percentage of learning loss was found in many schools and universities. Despite of all the challenges that educators faced during the pandemic, many technological and pedagogical skills were developed and a new opportunity for digital transformation was opened in order to achieve equity, justice and quality.

This book is presenting the experiences of different universities and countries in remote learning during the pandemic in order to drive lessons related to contexts and cultures to be able to plan for the future of education. Analysing the past will help us to predict the future and plan strategically for it, otherwise, institutions will keep repeating the same mistakes.

Eleven chapters are presented in this book explaining the reflections of the researchers and practitioners on their tools for sustaining their education during the pandemic from students, teachers, and governments' perspectives. These cases were presented as conference papers in the third international conference for teaching and learning that was conducted in May 2022 at An-Najah National University in blended mode. Presenters were either in the presence or presented virtually via webinar sessions. The conference's main theme was the future of education in the era of post COVID-19.

Many researchers and academics expect that education after the Pandemic will be different from education before the pandemic since the gained knowledge and skills could not be neglected, on the contrary governments and policymakers should build on it in order to participate in achieving the fourth sustainable development goal related to the quality of education.

We would like to express our gratitude to all authors and contributors to this book who were committed to participating in writing this book and gave their time and effort to finalize it. A special thanks to all learners around the world who continue to ask for better education in order to contribute to building a peaceful healthy world to be able to live together.

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Chapter 1
The Impact of COVID-19 Pandemic on Pre-school Education from the Point of View of Pre-school Teachers

Soheil Salha and Reem Jawabreh

Abstract This study aimed at exploring the impact of COVID-19 pandemic on pre-school education from the point of view of pre-school teachers. A mixed-methods approach was adopted. The quantitative data were collected by a questionnaire to estimate the impact of COVID-19 among pre-school teachers. The sample of pre-school teachers was randomly selected, consisting of 115 female pre-school teachers. The qualitative data were collected in semi-structured interviews, with 15 female pre-school teachers. There were no significant differences in teachers' views according to their academic qualifications, and their place of work. The results also indicated the lack of training and a weak technological infrastructure in the early childhood sector. Therefore, the qualitative and quantitative results were consistent. This study emphasizes the significance of more collaboration between stakeholders to enhance online learning skills of pre-school teachers.

Keywords COVID-19 · Pre-school teachers · Online learning · Early childhood

1.1 Introduction

According to the World Health Organization (WHO), the COVID-19 pandemic has been labelled as one of the most dangerous worldwide pandemics that humanity has faced in the last century, which has led to human and financial losses. The World Health Organization urged all countries to implement preventive measures and processes in order to lessen the severity of the outbreak. The complete lockdown

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and closures had a devastating impact on many aspects of life, including the social, political, and economic sectors (World Health Organization, 2020).

The university and school closures, including those of kindergartens, have had a great impact on the education sector and the educational system in particular. As a result, educational activities and practices have changed during the pandemic (Garbe et al., 2020).

Actually, the Palestinian Ministry of Education is responsible for pre-school education in Palestine and has a national strategic plan based on the fact that children are the most essential component of Palestinian society, and they should be able to enjoy all of their rights and meet all of their individual needs in a stimulating, safe, and accessible environment (Jawabreh et al., 2022). Therefore, pre-school is an important educational period in children's lives (Jawabreh et al., 2020). Correspondingly, the literature shows that pre-school education is a worthwhile investment due to its impact on children's development and their cognitive-academic characteristics (Gayatri, 2020).

Due to the spread of the coronavirus throughout Palestine and the suspension of all daily activities, in addition to its great impact on education, prompted educational institutions to experiment with distance teaching. This is based on achieving the SDG4, which seeks to ensure lifelong learning, and the belief that education is the core of Palestinian values (Jawabreh et al., 2022).

As a result of the closure of educational institutions, the educational strategies were transferred from traditional face-to-face to online learning to ensure the effectiveness of learning during the pandemic (Gayatri, 2020).

Online learning, or so-called distance learning, became widespread in 2020 as a result of the COVID-19 pandemic. Because of this, online education and learning are critical components of early childhood education programs and need different educational strategies from those used in traditional learning (Kim, 2020). Furthermore, the technological applications that are used should be appropriate to the needs of children and designed to develop their skills (Jawabreh & Bicen, 2020).

Many studies have demonstrated the impact of the COVID-19 pandemic on education, and many children have been deprived of access to a good education. Many students were also unable to get online education due to a lack of smart phones and computers, while others suffered from slow internet speeds or a constant absence of electricity, particularly in marginalized areas (Khlaif et al., 2021).

However, few Palestinian studies have focused on the impact of the corona pandemic on pre-school education from the point of view of pre-school teachers. As a result, this research aims to find out pre-school teachers' perceptions of the impact of the corona pandemic on pre-school education.

1.1.1 Problem Statement

An overwhelming majority of the world's countries have suffered from the COVID-19 pandemic, where over 90% of learners from early childhood stage to higher

education level had their education disrupted, and nearly 200 countries shut down all universities and schools (UNESCO, 2020).

Closures of schools and universities have altered the daily lives of students, their families, and teachers in unprecedented ways. More than half a billion children have been forced to become virtual-school learners in their homes, while parents and other family members have taken on the new responsibility of learning facilitators (Cohen & Kupferschmidt, 2020).

In general, due to the closure, there was a rapid shift to online learning, which gave greater responsibility to teachers and parents. Consequently, the teachers' experiences with children during online learning are worth examining to inform and guide future policy decisions. Online learning practices are challenges for both pre-school teachers and families with pre-school children (Garbe et al., 2020).

An examination of the related literature reveals that there are few studies about pre-school education in general and the impact of the corona pandemic on pre-school education in particular, in Palestine. As a result, there is a need for more studies. In light of this, the current study will be used to clarify the impact of the coronavirus pandemic on pre-school education from the point of view of pre-school teachers.

1.1.2 Purpose of the Study

The COVID-19 pandemic has caused many changes in most aspects of life, including educational environments. Many countries closed schools and universities in the spring of 2020 to reduce the spread of the viral outbreak during the COVID-19 pandemic (Bao, 2020).

The current study seeks to explore the impact of the corona pandemic on pre-school education from the points of view of pre-school teachers according to their academic qualifications and workplace. In addition, the study aims to identify the difficulties that pre-school teachers faced during the corona pandemic and also to examine the level of employment of internet applications during the corona pandemic on pre-school education.

1.1.3 Research Questions

This study investigates the impact of the coronavirus pandemic on pre-school education from the point of view of pre-school teachers. Therefore, the following research questions will be addressed:

What are the pre-school teachers' perceptions of the impact of the corona pandemic on pre-school education?

Are there significant differences in the teachers' perceptions of the impact of the corona pandemic on pre-school education according to their academic qualifications?
Are there significant differences in the teachers' perceptions of the impact of the corona pandemic on pre-school education according to their place of work?
Are there significant differences in the employment of internet applications during the corona pandemic on pre-school education according to teachers' academic qualifications?
Are there significant differences in the employment of internet applications during the corona pandemic on pre-school education according to the teachers' workplace?
Are there significant differences in the difficulties that pre-school teachers faced during the corona pandemic according to their academic qualifications?
Are there significant differences in the difficulties that pre-school teachers faced during the corona pandemic according to their workplace?

1.1.4 Significance of the Study

The COVID-19 pandemic has affected the world's educational systems, forcing the lockdown of schools and universities in many countries and a transition to distance learning. The teachers, students, as well as families were not ready to face the difficulties and challenges of this emergency situation (Affouneh & Salha, 2021). Therefore, it is important to identify the difficulties and challenges that have affected pre-school education in order to develop the skills of teachers to use technology applications for teaching and to avoid these problems. It is crucial to enable teachers to shift to online learning through training and workshops in order to have the appropriate experience.

Pre-school teachers' perceptions of the impact of the COVID-19 pandemic on pre-school education may contribute to finding specific strategies to ensure a healthy balance between promoting children's learning and ensuring control of any global epidemic.

1.2 Literature Review

The rising spread of the COVID-19 pandemic, combined with the inability of governments around the world to control it, has prompted countries to take preventative measures to slow its spread and mitigate its negative effects on health, economic, and educational systems (Brinks & Ibert, 2020).

The education sector is one of the sectors that was most affected by the corona pandemic because of the closure of all educational institutions. Accordingly, and because of the importance of education, it was necessary to ensure its continuity

by employing internet applications and transitioning from traditional, face-to-face education to online learning (Alan, 2021).

Overall, the COVID-19 pandemic has had a clear impact on children's lives during lockdown. For some universities and schools, it seems that they were successful in finding strategies to ensure a healthy balance between promoting children's learning and ensuring corona control (Cordovil et al., 2021).

Concerning pre-school education, the teachers were informed about the following (Alan, 2021):

1. Keeping in touch with family members.
2. Creating a daily educational plan of six 20-min activities and discussing it with the school administration and families.
3. Encouraging family participation in activities.
4. Communicating with and engaging children in group activities at least three times a week via any secure platform permitted by the school's administration.
5. Using alternative methods to communicate with children who are unable to attend group meetings.
6. Ensuring that pre-school children follow their educational activity plan.
7. Encouraging families to use the educational calendar created by the General Directorate of Pre-School Education.

Aladam's study (2020) aimed to explore the difficulties that kindergarten administrators faced with using e-learning in light of the corona pandemic in Gaza City. Descriptive and analytic approaches were conducted. The sample study consisted of 132 kindergarten administrators. The findings showed that kindergarten administrators faced problems in using e-learning in light of the corona pandemic. These difficulties are, respectively, technical difficulties, administrative and financial challenges, and difficulties related to the concept of e-learning. In addition, there are no significant differences in the difficulties that kindergarten administrators faced in using E-learning according to academic qualifications, years of experience, and kindergarten type. The study revealed some solutions to meet the challenges and difficulties of e-learning. The study recommended the necessity of training courses for kindergarten administrators about to how to use e-learning, and the necessity of conducting further future research about E-learning.

According to researchers, online learning in kindergartens is ineffective and students prefer to return to traditional classes. Furthermore, parents had negative perceptions toward online education and about its value and benefits for children (Dong & Mertala, 2019). However, a study conducted in Cyprus (Kara & Cagiltay, 2017) demonstrated that educating kindergarten children online has many benefits, and kindergarten teachers' belief that integrating online learning into their classrooms can help children develop their psychomotor skills, natural curiosity, and self-confidence. Therefore, children will find online learning more enjoyable.

Atabey's study (2021) aimed to identify the problems that pre-school children experience during COVID-19 and also what could be done from the perspectives of pre-school prospective teachers. The sample consisted of 15 pre-school teachers in Turkey. A qualitative approach was conducted. The project preparation form,

which is an unstructured survey form that was prepared by the researcher, was used. The findings revealed the difficulties that preschool children might experience in a pandemic period, the solutions to solve these problems, and the values and concepts to be attained.

Gayatri's study (2020) aimed to examine the education in early childhood during the pandemic of COVID-19. A systematic review was employed. The results revealed that the early childhood education influenced due to COVID-19, forcing children to learn online from their homes. The findings showed the difficulties that children faced during the corona pandemic in their learning, and how children's readiness to use the technological applications. In addition, the parents and teachers have important roles in supporting children to develop their cognitive and social characteristics.

Fotii's study (2020) aimed to explore the objectives, conditions, perceptions, and limitations regarding distance learning in the kindergarten. The quantitative approach was conducted by using the questionnaire. The sample for the survey consisted of 101 teachers. The findings indicated that teachers responded to distance learning in order to maintain communication with their students. Online social networking environments that incorporate a multitude of interaction and communication capabilities can be a useful instrument in distance learning and are characterized by ease of use by teachers and children. Furthermore, it is distinguished for its adaptability to the requirements of all subjects.

Kim's study (2020) described how an early childhood education preservice teacher education course was redesigned to provide teachers with opportunities to learn and teach online in the United States. The descriptive approach was employed. According to the findings, the online teachers' experiences are divided into three phases: preparation, implementation, and reflection. Furthermore, online teaching experiences allowed these preservice teachers to interact with children as well as promote their development and learning through online communication tools.

Abu-Rabba et al.'s study (2021) sought to examine the level of use of online learning in Jordanian pre-schools during the COVID-19 pandemic from the perspective of teachers. The study sample included 225 female teachers from Jordan's public and private schools. A survey was conducted to measure the three dimensions: teaching, communication, and technological competencies. The findings showed that the mean scores of the level of use of online learning in Jordanian pre-schools during the COVID-19 pandemic from the perspective of teachers were mid-range, and there was a significant difference in the favour of private schools. Also, there is a correlation between the years of experience and both academic qualifications and private education.

Jalongo's study (2021) discussed the implications of the COVID-19 pandemic for education in early childhood. A study of the literature was conducted and categorized into four topics: risks to quality of life and wellbeing; pressure on families; changes in teaching techniques and reliance on technology; and the interrupted reorganization of higher education and scholarship. The study concluded with the changes that hold the most potential to develop the field of early childhood education and care.

Garbe et al.'s study (2020) sought to examine parents' experiences and difficulties during school closure. The sample consisted of 122 parents. The quantitative approach was employed using an open-ended questionnaire. A thematic analysis was conducted to analyse parental responses. The findings indicated that the parents agreed with the school closure policy and were generally satisfied. However, the parents described having difficulties balancing responsibilities, accessibility, children's motivation, and learning outcomes.

Cordovil et al.'s study (2021) sought to identify the levels of physical activity that Portuguese children engaged in during and post lockdown periods. This study drew on the participation of 16 pre-schools. Parents completed an online survey, an in-loco assessment scale, and semi-structured interviews with pre-school teachers. According to the findings, parents reported that their children aged 3 to 5 spent the majority of their time during lockdown doing sedentary activities (72% of their daily activities). Teachers believed that limiting the number of children sharing material was the worst imposed restriction because it hampered children's socializing. Increasing the use of the outdoor space, on the other hand, was deemed beneficial because it boosted children's enjoyment of activities outside.

Alan's study (2021) aimed to determine the needs of pre-school teachers regarding online education during the COVID-19 pandemic. The qualitative approach was conducted with 24 pre-school teachers via interviews conducted with them. The data were analysed by an inductive approach. The findings revealed that pre-school teachers need to develop their technological competencies, have access to more interactive resources, be able to utilize educational platforms specifically designed for the pre-school period, be equipped with the resources to serve families, and receive support for their psychological well-being.

The purpose of Nikolopoulou's study (2022) was to examine teachers' experiences and practices with online teaching during the pandemic period. The sample included 14 pre-school teachers via interviews. The findings revealed that the majority of the teachers used a combination of teaching practices and approaches. The teachers' perceptions were initially negative, but afterwards they became positive. Furthermore, the importance of the parents' role was revealed. Teachers have challenges with online education, such as technical problems, insufficient support for students at home, and limited training in online teaching techniques.

Clarke et al.'s study (2021) sought to investigate how lockdown and its subsequent changes affected children's daily activities, eating, and sleeping systems in England. The qualitative approach was conducted through in-depth interviews; the data were analysed using thematic analysis. The sample included 20 parents of pre-school children. The findings revealed that the children's activity, eating, and sleeping systems had changed. The parents demonstrated that the lockdown has a negative impact on preschool children's eating, activity, and sleep routines. Some favourable changes were discovered, such as a lack of habits that may have been harmful to children's health and development.

Yıldırım's study (2021) sought to investigate the effects of the COVID-19 pandemic on pre-school by examining how pre-school education is implemented,

what types of activities are undertaken, the types of challenges that must be overcome, and the measures that must be taken to sustain preschool education. The sample included 25 pre-school teachers and 30 parents. The qualitative approach employed a semi-structured interview format and video recordings of participants engaged in educational activity within a two-month period. The findings revealed that participants reported that the COVID-19 pandemic had numerous negative effects on preschool education and that they organized many activities and games to sustain education but encountered numerous obstacles and challenges during the process. Additionally, they emphasized the importance of maintaining preschool education during pandemics.

1.3 Methodology

This study attempts to find out the impact of COVID-19 on pre-school education. Thus, the researchers used a mixed method approach to investigate the COVID-19 effect on pre-school teachers.

1.3.1 Participants

The population of this study included all pre-school teachers in the north of Palestine in 2021–2022. The sample for the quantitative method consisted of (115) preschool teachers. A questionnaire consisting of (13) items was distributed to the sample. Moreover, the sample for the qualitative approach consisted of (15) preschool teachers. Tables 1.1 and 1.2 presented the quantitative sample according to academic qualification and place of work.

Table 1.1 Sample distribution according to academic qualification

Academic qualification	Frequency	Percentage
Diploma	30	26.1
B.A	85	73.9
Total	115	100.00

Table 1.2 Sample distribution according to place of work

Place of work	Frequency	Percentage
City	31	27.0
Village	84	73.0
Total	115	100.00

Table 1.3 The correlation coefficients between each item and the total domain

Q	r	Q	r
Q1	0.477**	Q8	0.804**
Q2	0.448**	Q9	0.756**
Q3	0.501**	Q10	0.793**
Q4	0.301**	Q11	0.735**
Q5	0.409**	Q12	0.694**
Q6	0.780**	Q13	0.791**
Q7	0.745**		

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

1.3.2 Data Collection

To achieve the aims of this study, the researchers used two instruments to collect data. The first instrument was a questionnaire consisting of two parts, the first part was the demographic data of the pre-school teacher, and the second part was (13) items. The questionnaire used a 5-point Likert scale graded as (1) strongly disagree; (2) disagree; (3) neither agree nor disagree; (4) agree; (5) strongly agree. The reliability coefficient of the questionnaire was calculated by the Cronbach alpha method and it was (0.878).

The validity of the questionnaire was verified by calculating the (Pearson) correlation coefficient (r) between the mean of each item and the total mean of the questionnaire. Table 1.3 shows significant positive correlation coefficients.

1.4 Findings

After analysing the quantitative data, the study questions were answered as follows.

1.4.1 Question #1

What are the pre-school teachers' perceptions of the impact of the corona pandemic on pre-school education?

To answer this question, means and standard deviations for the items of the impact of COVID-19 on pre-school education are shown in Table 1.4.

Table 1.4 indicates that there is a low level of training pre-school teachers on using online learning platforms. It is worth mentioning there was inequity in disseminating online learning among children as they did not have the suitable skills and tools. The total mean of the impact of the corona pandemic on pre-school education, achieved

Table 1.4 Means and standard deviations for the items of the impact of COVID-19 on pre-school education

Item	Mean	S.D
I communicated with the children through the internet	3.21	1.30
It was easy to obtain the tasks via the internet	3.00	1.22
Communication through the internet was achieved without any previous training	2.97	1.20
I used the internet and eLearning applications well	3.07	1.18
I recorded the lesson before uploading on the internet	2.88	1.24
Online learning is not appropriate for the children in kindergartens	3.12	1.35
Children could not attend online learning	3.05	1.22
Online learning led to less support of children	3.10	1.32
Online learning is not suitable for children nature and characteristics	3.12	1.36
Kindergartens lacked equipment and online tools	3.21	1.22
I suffered from low interaction and communication with children	3.02	1.33
There was no support of children within online learning	2.92	1.19
Equity among children was not achieved due to some of them not having computer skills or not having the internet	3.23	1.30
Total mean	**3.07**	**0.81**

(3.07) out of (5) which implies a high level of learning as perceived by pre-school teachers.

1.4.2 Question #2

Are there significant differences in the teachers' perceptions of the impact of the corona pandemic on pre-school education according to their academic qualifications?

The researchers used the T-test of independent samples to answer this question. Table 1.5 shows the results.

Table 1.5 indicates there are no significant differences in the teachers' perceptions of the impact of the corona pandemic on pre-school education according to their academic qualifications.

Table 1.5 T-test of the impact of the corona pandemic on pre-school education according to academic qualification

Academic qualification	N	Mean	SD	t-value	D.F	p
Diploma	30	3.16	0.89	0.729	113	0.467
B.A	85	3.04	0.78			

Table 1.6 T-test of the impact of the corona pandemic on pre-school education according to the place of work

Place of work	N	Mean	SD	t-value	D.F	p
City	31	3.06	0.75	0.35	113	0.972
Village	84	3.07	0.83			

1.4.3 Question #3

Are there significant differences in the teachers' perceptions of the impact of the corona pandemic on pre-school education according to the place of work?

The researchers used T-test of independent samples to answer this question. Table 1.6 shows the results.

Table 1.6 indicates that there are no significant differences in the teachers' perceptions of the impact of the corona pandemic on pre-school education according to the place of work.

1.4.4 Interview Questions

1. What were the difficulties that pre-school teachers faced during the corona pandemic?
2. What were the activities that pre-school teachers conducted during the corona pandemic?
3. What were the internet applications that pre-school teachers used during the corona pandemic?

Pre-school education is facing unprecedented challenges due to the COVID-19 pandemic, as it has led to significant changes in the lives of pre-school children and their activities, both during lockdown and post-lockdown periods, in addition to many teachers, learners, and families who have been unprepared for this sudden shift, which has brought some difficulties and challenges (Salhab et al., 2021).

The interview questions as to the teacher's perception of the impact of the COVID-19 pandemic on pre-school education have been categorized into three themes: difficulties and challenges, activities, internet applications.

1.4.4.1 Teachers' Difficulties and Challenges During the Pandemic (N = 15)

Teachers' difficulties and challenges during the pandemic were grouped under two themes: technical difficulties and lack of skills. The majority of interviewees described the difficulties and obstacles they encountered during the pandemic. As a result, they need training and courses to enhance their technological competencies to

face those challenges. For example, there were technical difficulties, included, poor internet connectivity and platform performance. Inadequate infrastructure such as tablets, laptops, or mobile phones. As a result, families prioritized buying equipment for their older siblings. There is a lack of training in online methods. In addition, children are not able to react quickly enough. Certain parents are incapable of assisting or supporting their children. Concerns exist about children with learning disabilities. Parents, for example, may have videotaped or recorded their children.

These are direct quotations from the interviews conducted with pre-school teachers:

'Most teachers need to learn about programs that allow them to create online worksheets for children' (Teacher 4)

'Some teachers don't have enough knowledge and skills to use various technology programs' (Teacher 5)

'Teachers need to learn how to create animation for children's books in Pdf format or how to add voice to them using web 2.00 tools' (Teacher 7)

'Internet disconnection, due to the large number of Internet-connected devices and phones' (Teacher 6)

'Children do not want to spend a lot of time in their own homes because of their hyperactivity' (Teacher 3)

'Some parents of children lacked the knowledge and ability to use technology; therefore, they did not follow-up with their children' (Teacher 9)

'There are not enough devices or smartphones for children' (Teacher 1)

'It is difficult to find the right time for all the children' (Teacher 8)

'There is no calm, there are some children who cause inconvenience, and indiscipline hinders the understanding and assimilation of other children' (Teacher 3)

1.4.4.2 Teachers' Activities During the Pandemic (N = 15)

The interviewees reported that various activities in many subjects were implemented during the pandemic, which are grouped under four themes: language activities, mathematical activities, religious activities, and artistic activities, under fifteen categories: counting or locating a specific number; a number that is less than or greater than another number; fun activities such as drawing; singing some songs from YouTube video clips; storytelling; memorizing Qur'an verses and prayers; colouring; recognizing geometric shapes; adding and subtracting; the introduction and design of appropriate digital games; and preparation of basic animations for children.

The following are some quotes from the interviewees:

'I taught the children the numbers by finger-counting from 1–10' (Teacher 4)

'In every meeting, I listened to the children reading some verses of the Qur'an or supplications' (Teacher 8)

'Download some songs from YouTube related to reading letters in Arabic or English' (Teacher 13)

'To clarify the adding and subtracting operations, I created some PowerPoint presentations' (Teacher 7)

1.4.4.3 Internet Applications that Used During the Pandemic (N = 15)

There are various ways of communicating and connecting with children during a pandemic, which are grouped under two themes: social media and platforms, under five categories. Pre-school teachers reported that they used WhatsApp, Facebook, Messenger, Teams, and Zoom. In short, the majority of pre-school teachers used WhatsApp application followed by video call.

The following are some quotes from the interviewees:

'I communicated with the children regularly through Facebook groups' (Teacher 1)

'I used the video-call on Whatsapp' (Teacher 12)

'Sometimes, I used to record my voice on Whatsapp' (Teacher 6)

'The first time I used the Zoom platform, I needed a lot of effort or skill to use it. Therefore, I changed to Messenger' (Teacher 4)

'I submitted the children's homework using Whatsapp' (Teacher 8)

'In the begging I used the Teams platform four times, but it was difficult for the children' (Teacher 11)

1.5 Discussion

The finding of this study, which was conducted among pre-school teachers, could motivate stakeholders and policy makers to institutionalize the early childhood sector in the light of crises especially COVID-19. Children were deprived from learning *opportunities* due to teachers' technical skills and a weak infrastructure (Reimers et al., 2020). Pre-school teachers were not trained sufficiently to use platforms in teaching children at all levels (Dong et al., 2020). Pre-school teachers need specific training programs to support them in the transition to online learning. The training programs are about using technological tools and the approaches to apply them effectively (Fernandes et al., 2020).

Pre-schools teachers had several initiatives to communicate with children through the pandemic to keep the minimum of required knowledge and skills. They used social media, Youtube and PowerPoint to engage children in learning and keep them motivated (Moorhouse & Wong, 2022) but there were a lack of participation. Parents tried to provide their children with some learning materials but unfortunately kindergarten children were not priority since every Palestinian home has school and university students.

It is fair enough to understand pre-schools teachers' views toward teaching children virtually. They believed online learning is not suitable to the nature of children and their growth characteristics. Children like to move, play and manipulate tangible materials and that cannot be done in online learning. It's obvious that the traditional learning environment is still dominant is distance learning.

The children learning require a full and organized cooperation between policy makers, parents and school staff to establish a solid online learning environment. It's hard to shape children education with lack of participation and partnership among all the parts dealing with early childhood especially in kindergarten.

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Chapter 2
Impact of the COVID-19 Pandemic on School and Learning in Extremely Vulnerable Areas of Jerusalem

Muath Asmar

Abstract The lives of people have changed dramatically as a result of the COVID-19 pandemic worldwide, particularly children and adolescents. This study investigates the influence of the COVID-19 pandemic on the education and learning of children and adolescents based on social cognitive theory in the unique context of east Jerusalem. The survey is based on a developed and validated questionnaire for measuring health-related quality of life (KIDSCREEN), and school and learning of children and adolescents in east Jerusalem were measured twice before and during the COVID-19 pandemic lockdown procedures. Multiple regression analysis, one-way ANOVA tests, an independent sample t-test, and a paired sample t-test were used in the empirical testing. The results of this study indicate that the students in east Jerusalem had worse school and learning conditions during the COVID-19 pandemic than before. The environment and personal factors significantly affected the school and learning of children and adolescents in east Jerusalem during the COVID-19 pandemic. The findings of this study shed new light and provide important evidence on children and adolescents in east Jerusalem as an extremely politically unstable context during a crucial period of risk behavior, particularly when social and educational support is lacking.

Keywords Covid-19 pandemic · Children and adolescents · School and learning · Jerusalem · Palestine

2.1 Introduction and Background

At the end of December 2019, in the Chinese city of Wuhan, a novel coronavirus was found and named by the World Health Organization (WHO) "coronavirus disease 2019 (COVID-19)". The rapid spread of this virus and large numbers of cases and

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deaths around the world led the WHO to announce a COVID-19 pandemic on March 11, 2020. Worldwide, more than 455.5 million cumulative cases of COVID-19 and 6 million cumulative deaths were reported by the WHO in the middle of March 2022 (WHO, 2022). Countries responded by locking down economic activities, imposing strict quarantine and school closures.

During the pandemic, almost every nation enforced complete or partial school closures in 2020 as part of social distancing and lockdown attempts to decrease COVID-19 transmission (Viner et al., 2022). According to the WHO (2021), children and younger adolescents (5–14 years) accounted for 6.3% of global cases and 0.1% of global fatalities, while older adolescents and young adults (15–24 years) accounted for 14.5% of global cases and 0.4% of global deaths. These statistics indicate that COVID-19 affects children and adolescents at a lower rate than it affects adults, resulting in fewer cases and deaths. Despite the fact that COVID-19 mostly impacts the health of elderly people, the pandemic generally, and particularly the actions adopted by governments to limit risks, has had a considerable impact on the lives of children and adolescents. Isolation and social distancing measures have been used all over the world to protect against the possibility of COVID-19 infection (Shen et al., 2020). Indeed, people of all ages, nationalities, levels of education, wealth, and gender have been impacted by the COVID-19 outbreak. The same cannot be said of its consequences, which have disproportionately impacted the most vulnerable (Schleicher, 2020).

As COVID-19 spreads over the world, vulnerable populations in nations with poor health and socioeconomic systems are most at risk of being affected the hardest. The absence of strategic and comprehensive policies, resource misallocation, and investment in public health objectives highlight fundamental gaps in the political and social systems of conflict-affected nations in the Middle East and North Africa (MENA) area (AlKhaldi et al., 2020). The first cases of COVID-19 were confirmed on March 5, 2020, prompting the government of Palestine to declare a state of emergency on March 22, 2020, and implement containment measures such as lockdowns in West Bank governorates, movement restrictions, and the closure of public spaces such as schools, universities, public parks, and places of worship (Government of Palestine, 2020). As of March 17, 2022, Palestine has 654,380 COVID-19 cases, including 331,534 in the West Bank, 248,631 in Gaza, and 47,215 in Jerusalem. (Government of Palestine, 2022).

The Palestinian Ministry of Health believes that the total number of cases is likely to be underestimated in Jerusalem (AlKhaldi et al., 2020). In addition, a number of COVID-19 testing centres that served Palestinians in east Jerusalem ware closed (Alser et al., 2021). In the first wave of COVID-19, most of the cases confirmed were in the Jerusalem governorate, which would be due to the fact that the highest population densities are in the Jerusalem governorate (Shadeed & Alawna, 2021). Indeed, approximately a third of all Palestinian cases were recorded in Jerusalem, that disrupted preventive initiatives, medical missions, and equipment (Hamamra et al., 2021).

2.2 Context of the Study

East Jerusalem was occupied by IOAs in 1967, and it was governed by the Military Directorate of the West Bank. East Jerusalem was rapidly conquered and included in the Israeli municipality of Jerusalem. The Security Council overwhelmingly passed Resolution 478, declaring the annexation illegal under international law (Jabareen, 2017). The majority of the people who live in the East Jerusalem area are considered permanent residents of Israel and have a Jerusalem identity card (Ilaiyan, 2012). As a result, the Israeli government is responsible for providing social and economic benefits, including health-care services, to the people in the East Jerusalem area who are also subject to the Israeli police's jurisdiction. But, Israeli police closed a COVID-19 testing center and detained the clinic's organizers, alleging that it was related to the Palestinian Authority (Lehrs, 2021).

Palestinians living on Jerusalem's outskirts, mainly in towns inside the city's municipal limits but also on the West Bank side of the barrier, are confronted with a difficult and complex circumstance. The West Bank is a contested territory embroiled in the Israeli-Palestinian conflict. The region is marked by persistent tensions, political instability, and socioeconomic challenges. Palestine, have specific conditions and atypical situation where the people face high levels of unemployment, and limited economic opportunities (Abed & Asmar, 2023; Asmar, 2018).

2.3 School in East Jerusalem

East Jerusalem's education sector is important since it confirms the Holy City's Palestinian and Arab identities, as well as its educational institutions (Hamdan, 2021). There are several types of schools in East Jerusalem, including Israeli Municipality of Jerusalem schools, Partial Governmental schools, Palestinian Authority schools, UNRWA schools, Private Schools, and Jerusalem Islamic Waqf schools (Alessa & Salhi, 2020). Although Israel, is obligated to administer and manage education via the municipal education system, the Palestinian Authority retains control over the school curriculum and examination process (O'Connor et al., 2020).

Teachers in Palestine confront several challenges in giving education to their students. Due to specific conditions and atypical situation, for teachers and students, going to school every day is a difficult and often risky task. This terrible scenario has cleared the path for Palestinians to study, interact, and exchange information via the internet and technology (Trayek et al., 2016). Moreover, globally, some institutes have used e-learning throughout the last two decades. However, most schools, colleges, and universities do not use this educational mode, and their personnel are unaware of what e-learning entails (Mahyoob, 2020).

However, due to the COVID-19 spread in East Jerusalem in March 2020, the schools and learning models were transferred to virtual classrooms in accordance with containment measures so that students retain their right to gain knowledge while

remaining secure at home. Following that, the Palestinian Ministry of Education promptly announced its National Response Plan for COVID-19, highlighting distant learning as an alternate solution for students to continue their education (UNESCO, 2020). This alternative approach, due to lockdowns in reaction to COVID-19, has disrupted traditional learning, with most schools closing for many months.

Such a new environment of e-learning is based on utilizing computer technology and the Internet, in which most students and teachers have little experience. The switch to e-learning has been rapid, sudden, and unplanned for all educational institutions. On the other hand, the parents are now shouldering a tremendous burden. There will be a big change at home, especially for parents who will have to keep an eye on their kids as they learn at home, knowing that they have to keep studying as usual (Batubara et al., 2021).

2.4 Objective of the Study

The aforementioned circumstances have an influence on individuals in almost every aspect of their lives, and the purpose of this research is to look at the impact of the COVID-19 pandemic on schools and learning in a very vulnerable area of Jerusalem. In particular, this research aims to learn more about the environmental and personal aspects that were introduced during school closures, as well as their impact on learning perspectives among children and adolescents in the extremely politically unstable area of east Jerusalem.

2.4.1 Conceptual Framework

Since the late of December 2019, the globe has witnessed coronavirus COVID-19, which has been labelled a worldwide pandemic. The epidemic has had an unavoidable influence on the nation's social and economic activities, particularly those in the education sector. According to the social cognitive theory of Bandura (1986), human behaviour is the product of a combination of personal and environmental variables. Thus, the COVID-19 Pandemic, which causes changes in the living environment and personal factors, would affect the learning behaviour of children and adolescents.

Indeed, during the last two years, several studies around the world (e.g., Angrist et al., 2021; Ariyo et al., 2022; Cappelle et al., 2021; Martin et al., 2022; Meeter, 2021; Monroy-Gómez-Franco et al., 2022; Mukuka et al., 2021; Spitzer et al., 2021; Suyadi & Selvi, 2022; Zhang et al., 2021) have investigated the impact of the COVID-19 pandemic on school and learning. For instance, Ariyo et al. (2022) have looked into the socio-demographic factors that influence home learning engagement as well as the kinds of activities that schoolchildren participate in. They indicated that family size, school communication, and parents' perceived socioeconomic status were all associated with home learning engagement, whereas household wealth was linked to

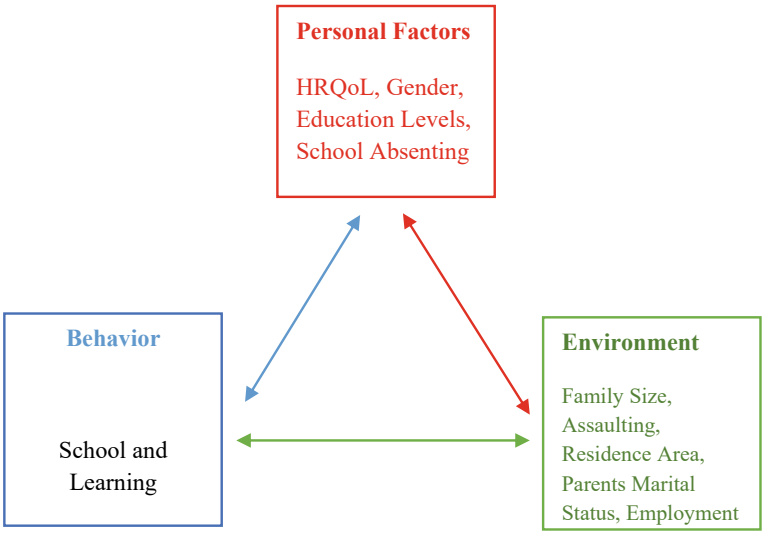

Fig. 2.1 Conceptual framework based on social cognitive theory of Bandura (1986)

all types of activity participation. Monroy-Gómez-Franco et al. (2022) have looked at the impact of the COVID-19 epidemic on education, specifically the loss of schooling as a result of the shift from in-person to online learning. Their findings reveal significant geographical variation, indicating that a set of metrics must account for at least two differences: those across families and those between areas. Several studies (e.g., Mseleku, 2020; Pokhrel & Chhetri, 2021; Pratama et al., 2020; Soltaninejad et al., 2021) have provided a literature review of school and education through the COVID-19 Pandemic.

Thus, it would be hypothesized that the environment and personal factors affect the school and learning of children and adolescents, as illustrated in Fig. 2.1, which presents the conceptual framework of the study.

2.5 Research Methodology

This part details the research methods used to carry out the current study, in order to achieve the study objectives, which are to investigate the effect of the COVID-19 epidemic on education and learning in very vulnerable areas of Jerusalem, particularly the Old City, Jabal al Mukabber, Silwan, Issawiya, Sheikh Jarrah, and Shu'fat refugee camp. It also explains the study's measurements and variables, as well as the population and the sampling, data collection, and analysis techniques and the research design.

The residence area, parents' marital status, employment status of the head of the family, family size, education levels, children, and adolescents were evaluated

based on their age and gender. Besides this demographic information, participants completed questions about whether they got infected by COVID-19 or not. In addition, they have asked about being absent from school when the school hours are regular.

The KIDSCREEN-10 was used to assess the HRQoL of children and adolescents in east Jerusalem, and the six dimensions of the KIDSCREEN-52 were used to assess school and learning for children and adolescents in east Jerusalem during the COVID-19 epidemic. This dimension includes a child's or adolescent's assessment of his or her cognitive abilities, learning and attention abilities, and sentiments towards school. It includes the youngster's or teenager's satisfaction with his or her academic abilities and achievements. It is also considered how students feel about school in general, such as whether school is a fun place to be. Furthermore, the component explores the child's impression of the teacher-student relationship. For example, whether or not the child or adolescent gets along with his or her teachers and whether or not the teachers seem to be interested in the student as a person are both significant factors to examine (The KIDSCREEN Group Europe, 2006).

KIDSCREEN instruments were created to collect data on children's and adolescents' well-being and health-related quality of life (HRQoL). They were meant to be given to children and adolescents, as well as a parent or caregiver (proxy version) who has daily contact with the kid in question (The KIDSCREEN Group Europe, 2006). KIDSCREEN was used by several studies during the COVID-19 pandemic (Albrecht et al., 2022; Ravens-Sieberer et al., 2021a, b; Vallejo Slocker et al., 2020).

In this study, the survey was developed in English before being translated and conducted in Arabic. The translation of HRQoL and school and learning measures into Arabic was adopted from (Saigh, 2017). The survey was presented to professionals, including Ph.D. psychiatrists, who looked at the questions in the survey and offered some revisions and recommendations to ensure that the test was a reliable measure of the idea being tested. Because of the COVID 19 social distance constraints and mobility restrictions, as well as a scarcity of secondary data for a representative sample, cluster purposive sampling was used to select children and adolescents from areas of the study in east Jerusalem. The sample is mostly made up of children and adolescents from families who have been infected with COVID-19, but it also includes children and adolescents who have not been affected. To insure a high response rate, the survey was administered by face-to-face interviews. The parent proxy version of the survey was administered to parents or caregivers who were asked to assess the degree of HRQoL and school learning from the perspective of the child aged 6 to 12 years old, whereas the self-assessment version of the survey was administered to children and adolescents aged 13 to 18 years old.

2.5.1 Data Analysis

The IBM SPSS version 22 program was used to analyse the data. An independent sample t-test, a paired sample t-test, and one-way ANOVA tests were performed for

variables of interest, as well as multiple regression were used in the empirical testing of the current study.

2.6 Results

Data was collected from 274 respondents in the study area of east Jerusalem from December 2021 to February 2022. After data coding and cleaning (n = 3 respondents were excluded due to missing data), the final sample elements included n = 271 respondents. Of these effective surveys, 129 were from adolescents and 142 from parents. The respondents' ages varied from 6 to 18 years old (M = 12.11, SD = 3.04). Table 2.1 shows descriptive data for the variables under this investigation. The data collected from six areas of the study showed that the highest respondent was from Silwan (26.9%) and the lowest was from Sheikh Jarrah (4%). This low number of respondents from Sheikh Jarrah has faced very difficult and challenging security and political situations, making it impossible to acquire a representative sample. Children and adolescents who live with their parents are (89.7%), and the majority of them belong to large family sizes (83.8%), and the majority of them are mail-order (69.7%), and in the 5th to 8th grades (41.0%), and the majority of them are rarely absent from school (67.2%). The majority of household heads worked (76.0%), and the majority of respondents and their parents were not infected by COVID-19 (63.8%).

The KIDSCREEN-10 was used to measure HRQoL of children and adolescents in east Jerusalem before and during the COVID-19 epidemic, which had good internal consistency before (Cronbach's = 0.853) and during (Cronbach's = 0.802) the Covid-19 pandemic; and good retest reliability before (ICC = 0.844) and during (ICC = 0.785) the Covid-19 pandemic. In addition, the KIDSCREEN-10 has good validity, as evidenced by various research (e.g., Ravens-Sieberer et al., 2008, 2010, 2014). Table 2.2 presents the mean and standard deviation statistics for the KIDSCREEN-10 and the school and learning items used in this study.

A paired sample t-test was used to assess the effect of the COVID-19 epidemic on children and adolescents' HRQoL in east Jerusalem. The result showed a significant decrease in the HRQoL before (M = 3.65, SD 0.56) to during (M = 3.08, SD 0.54) t (255) = 15.23 p 0.01 (two-tailed). The mean decrease in the test score was 0.56, with a 95% confidence interval extending from 0.49 to 0.63. These results revealed that children and adolescents in the area of study had worse HRQoL during the COVID-19 pandemic than before. Regarding the school and learning of children and adolescents, to assess the effect of the COVID-19 epidemic on children and adolescents' school and learning in east Jerusalem, a paired-sample t-test was used. The result showed a significant decrease in school and learning before (M = 3.46, SD 0.83) than during (M = 2.97, SD 0.75) t (266) = 11.16, p 0.01 (two-tailed). The mean decrease in the test score was 0.49, with a 95% confidence interval ranging from 0.40 to 0.57. These results indicate that the schooling and learning of children and adolescents in Jerusalem were worse during the COVID-19 pandemic than before. Table 2.3 shows

Table 2.1 Frequencies and percent statistics for the variables of this study

Variables	Item	Frequency	Percent
Residence area	Silwan	73	26.9
	Shu'fat refugee camp	63	23.2
	Sheikh Jarrah	11	4.1
	Jabal al Mukabber	28	10.3
	Issawiya	35	12.9
	The Old City	60	22.1
Parents marital status	Married/Living as couple /live with parents	243	89.7
	Divorced/separated/parents separated	13	4.8
	Widowed/orphan father or mother	12	4.4
	Other	2	0.7
Employment status	Not working	47	17.3
	Working	206	76.0
	Other	16	5.9
Family size	1 to 4 people	43	15.9
	More than 4 people	227	83.8
Education levels	1st grade to 4th grade	85	31.4
	5th grade to 8th grade	111	41.0
	9th grade to 12th grade	73	26.9
Gender	Male	189	69.7
	Female	81	29.9
COVID-19 infection	Yes	97	35.8
	No	173	63.8
	I don't know	23	8.5
School absenting	Never	89	32.8
	Rarely	182	67.2

the findings of a paired sample t-test of children and adolescents' HRQoL, as well as school and learning, in east Jerusalem before and during the COVID-19 outbreak.

Furthermore, school and learning during the COVID-19 pandemic for children and adolescents in east Jerusalem were measured using the six items of the KIDSCREEN-52 (The KIDSCREEN Group Europe, 2006). The school and learning measure has good internal consistency (Cronbach's = 0.81) and good retest reliability (ICC = 0.780), as well as the KIDSCREEN-52 has good validity, as evidenced by various research (e.g., Ravens-Sieberer et al., 2008, 2010, 2014).

An independent-samples t-test was used to compare school and learning among male and female children and adolescents. The results showed that there were statistically significant differences (t [266] = −2.767, p 0.01) with the mean score for males (M = 2.87, SD.69), which was lower than females (M = 3.18, SD.62). The amount

Table 2.2 Meanand standard deviation for the kidscreen-10, and the school and learning items

Variables	Item	Mean	Std. dev
KIDSCREEN-10 index health questionnaire for children and young people (HRQoL)	Have you felt fit and well?	3.65	0.730
	Have you felt full of energy?	3.92	0.715
	Have you felt sad?	3.74	1.041
	Have you felt lonely?	3.97	0.967
	Have you had enough time for yourself?	3.50	0.793
	Have you been able to do the things that you want to do in your free time?	3.53	0.786
	Have your parent(s) treated you fairly?	3.74	0.866
	Have you had fun with your friends?	3.57	0.859
	Have you got on well at school?	3.44	0.846
	Have you been able to pay attention?	3.47	0.882
School and learning	Have you been happy at school?	2.44	1.059
	Have you got on well at school?	3.10	0.865
	Have you been satisfied with your teachers?	3.06	0.947
	Have you been able to pay attention?	2.84	0.829
	Have you enjoyed going to school?	2.99	1.124
	Have you got along well with your teachers?	3.20	0.889

Table 2.3 Paired samples t-test of HRQoL and school and learning before and during Covid-19 pandemic

	Mean	Std. dev	Std. error mean	95% confidence interval of the difference		t	df	Sig. (2-tailed)
				Lower	Upper			
HRQoL before—during	0.56	0.59	0.04	0.498	0.64	15.234	255	0.0001
School and learning before—during	0.49	0.72	0.04	0.408	0.58	11.162	266	0.0001

of the differences in the means (mean difference = −0.24652 95% CI: −0.422 to −0.071) was significant. The results indicate that female children and adolescents have better school and learning outcomes than male children and adolescents.

Furthermore, to compare the schooling and learning for large families (more than 4 people live in the same house) and small families (4 people or less live in the

same house) of children and adolescents, an independent-samples t-test was used. The result showed that there were statistically significant differences (t [266] = 2.441, p 0.05) with the mean score for small families (M = 3.17, SD.70), which was higher than for big families (M = 2.9, SD.66). The amount of the difference in the means (mean difference = 0.273, 95% CI: 0.053 to 0.493) was significant. The results indicate that small families of children and adolescents have better school and learning outcomes than large families of children and adolescents.

Another independent-samples t-test was used to compare school and learning for children and adolescents who were never absent from e-learning (school) during the COVID-19 pandemic to those who were absent from e-learning (school) during the pandemic. The results showed that there were statistically significant differences (t [267] = 4.87, p 0.01) with the mean score for those who were never absent from the e-learning (school) (M = 3.22, SD.65), which was higher than the mean of those who were absent from the e-learning (school) (M = 2.80, SD.65). The amount of the differences in the means (mean difference = 0.41075; 95% CI: 0.245 to.577) was significant. The results indicate that children and adolescents who are never absent from e-learning (school) have better school and learning than those who are absent from e-learning (school).

One-way ANOVA was used to study the differences between areas in east Jerusalem in which the children and adolescents live, including the Old City, Silwan, Jabal al Mukabber, Issawiya, Sheikh Jarrah, and the Shu'fat refugee camp. According to the ANOVA results, school and learning in east Jerusalem differ significantly across different living areas of children and adolescents (F [5,262] = 3.825 p 0.01). Since the result is significant, the equal variance was not assumed, and it is worth checking for individual differences between the living areas. Thus, due to unequal area sizes, post-hoc comparisons using the Games-Howell method were conducted. The results revealed that the mean score for the Shu'fat refugee camp (M = 2.698, SD = 0.60) was significantly different (p 0.5) from that of Jabal al Mukabber (M = 3.261, SD = 0.467). However, no significant differences were detected between other areas. The results indicate that the children and adolescents living in Jabal al Mukabber have better school and learning opportunities than those in other areas. On the other hand, the study showed that schools and learning environments for children and teens in the Shu'fat refugee camp are the worst compared to other places.

Additional one-way ANOVA was used to determine whether there is a significant difference between parents' marital status of children and adolescents and better schooling and learning in east Jerusalem. Four marital status categories are supported (Cat1: Married/Living as a couple/living with parents). Separated/divorced/parents separated Widowed orphan father or mother Other (Category 4). The ANOVA results indicate that the school and learning in east Jerusalem are significantly significant within different categories of parents' marital status. However, the post hoc tests with ANOVA showed no significant differences. The results suggest that parents' marital status of children and adolescents is not a crucial factor regarding the school and learning environment in east Jerusalem.

Further one-way ANOVA was used to determine whether there is a significant difference between the family head of children and adolescents' employment status

and the school and learning environment in east Jerusalem. Three categories of employment status are assisted (Cat1: Not working, Cat 2: working Other (Category 3). The ANOVA results indicate that the quality of education in east Jerusalem does not significantly differ according to the employment status of the family head. The results suggest that school and learning are not different based on the family head's employment status in east Jerusalem.

Additional One-way ANOVA was used to study the differences between different education levels of the children and adolescents, in which the respondents were divided into three levels (Level 1: first grade to fourth grade; Level 2: fifth grade to eighth grade; and Level 3: ninth grade to twelfth grade). The ANOVA results show that school and learning in east Jerusalem differ significantly across educational levels for children and adolescents (F [2,264] = 2.624 p 0.1). Since the result is significant, the equality of variance was not assumed, and it is worth checking for individual differences between the levels. Thus, post-hoc comparisons using Dunnett's T3 were conducted. The results revealed that the mean score for level 1 (M = 3.07, SD = 0.62) was significantly different (p 0.5) from level 3 (M = 2.84, SD = 0.59). However, no significant differences were detected between level 2 (M = 2.90, SD = 0.76) and both levels 1 and level 3. Table 2.4 presents the one-way ANOVA results. The results indicate that the children in level 1 (first grade to fourth grade) have significantly better school and learning than older levels (Level 2: fifth grade to eighth grade; and Level 3: ninth grade to twelfth grade).

Above all, One Way ANOVA was used to determine whether there is a significant difference in school and learning between the children, adolescents, and their parents

Table 2.4 Present the one-way ANOVA results

Education levels	Mean	Std. dev	Test of homogeneity of variances		ANOVA	
			Levene statistic	Sig	F	Sig
Level 1	3.0725	0.62543	2.872	0.058	2.624	0.074
Level 2	2.9091	0.75778				
Level 3	2.8356	0.58575				
Levels differences						
					95% confidence interval	
Education levels	Mean difference		Sig		Lower bound	Upper bound
Level 1–Level 3	0.23690*		0.046		0.0033	0.4705
Level 1–Level 2	0.16346		0.272		−0.0752	0.4021
Level 2–Level 3	0.07344		0.845		−0.3143	0.1674

* The mean difference is significant at the 0.05 level

who get infected with COVID-19 or not in east Jerusalem. Three cases infected with COVID-19 are assisted (Case 1: Yes, Case 2: No, Case 3: I don't know). According to the ANOVA results, school and learning in east Jerusalem do not differ significantly based on the children, adolescents, and their parents' COVID-19 infection status. Table 2.3 presents the one-way ANOVA results for infection with COVID-19 status. The results suggest that children, adolescents, and their parents' infection with COVID-19, which may affect their physical health, is not an important factor regarding the school and learning environment in east Jerusalem.

The foregoing results indicate there is a significant difference in the schooling and learning of children and adolescents in east Jerusalem based on most of the environmental and personal factors. In addition, for robustness analysis, multiple regression was conducted to examine the impact of environmental and personal factors on the school and learning of children and adolescents in east Jerusalem during the COVID-19 pandemic. The regression analysis results, shown in Table 2.5, revealed that residence area, family employment status, family size, education level, gender, school absenting, and HRQoL were significantly affecting the school and learning of children and adolescents in east Jerusalem during the COVID-19 pandemic.

Table 2.5 Regression analysis of environmental and personal factors and school and learning

Variable	Unstandardized coefficients		Standardized coefficients	t	Sig
	B	Std. error	Beta		
(Constant)	1.469	0.408		3.601	0.000*
Residence area	0.057	0.017	0.166	3.328	0.001**
Parents marital status	−0.030	0.065	−0.023	−0.466	0.641
Employment status	−0.172	0.067	−0.121	−2.557	0.011**
Family size	−0.193	0.089	−0.103	−2.176	0.030**
Education level	−0.095	0.042	−0.108	−2.247	0.026**
Gender	0.249	0.068	0.174	3.662	0.000*
COVID-19 infection	0.078	0.052	0.073	1.516	0.131
School absenting	−0.134	0.070	−0.093	−1.913	0.057***
HRQoL	0.745	0.063	0.588	11.877	0.000*

Dependent Variable: school and learning *, **, and *** indicate statistical significance at the 1, 5 and 10% levels, respectively

2.7 Conclusion

The aim of the current study is to assess the influence of the COVID-19 pandemic on the schooling and learning of children and adolescents in east Jerusalem. The result of the study indicates the COVID-19 pandemic has negatively affected the HRQoL and school and learning of children and adolescents in the most vulnerable areas of Jerusalem. According to the findings, female children and adolescents have a better educational and learning environment than male children and adolescents, and that children and adolescents from small families have a better educational and learning environment than children and adolescents from large families. Furthermore, children and adolescents who never miss e-learning (school) have better school and learning than those who miss e-learning (school). Children and adolescents living in Shu'fat refugee camp have the worst access to schools and learning than in other areas of east Jerusalem. According to the findings, children in first to fourth grade have a considerably better school and learning environment than children in higher levels.

On the contrary, findings revealed that the schooling and learning of children and adolescents are not affected by the work situation of the household head. An important finding of this study is that COVID-19 infection in children, adolescents, and their parents, which might have a negative impact on physical health, is not a significant influence in the school and learning environment in east Jerusalem. In a nutshell, environmental and personal factors significantly affected the schooling and learning of children and adolescents in east Jerusalem during the COVID-19 pandemic. In addition, this public health disaster reveals major inadequacies in the political and social structures of conflict-affected areas of east Jerusalem.

2.7.1 Limitation

The research areas, such as Sheikh Jarrah, face tough security and political situations, and the refusal of family members and teenagers to participate in data collection made it extremely difficult to acquire a representative sample.

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Chapter 3
Measuring Gamification Influence on Student's Academic Behaviour: The Case of BME Elective Course

Ibrahim Hamza, Sarolta Tóvölgyi, and Renátó Raduka

Abstract Gamification is a recent notion that has been implemented in numerous fields in order to obtain better engagement and performance levels. Moreover, previous literature indicated gamification positive influence on students' academic engagement and performance. Although gamification behaviour influence has been evidenced in an educational context, the pandemic provided an excellent opportunity to assess gamification efficacy in electronic higher education. Our research is an empirical study that can precisely analyse gamification positive or possibly negative effects in E-learning on students during the pandemic. In the faculty of Economics and Social sciences (GTK), we started to improve and broaden the usability of Moodle to better organize our classes electronically. A pilot elective pilot course was developed, and students were divided into two groups, both groups studied the same course syllabus, however one course featured gamified components implemented via Moodle, while the second did not. Students' engagement, dropout rates and performance were measured and compared between the two courses. Research findings demonstrated the usefulness of gamification in higher education, particularly in an electronic learning context, by enhancing student engagement and performance. Furthermore, study results indicated the effectiveness of gamification in reducing student dropout rates.

Keywords Gamification · E-learning · Engagement · Dropout rates

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3.1 Introduction

The first wave of COVID-19, in December 2019 and the first quarter of 2020, has prompted institutions throughout the globe to develop creative teaching alternatives to face-to-face conventional learning methods. All educational activities in Hungary were halted on March 13th, and educational institutions were required to adequately manage the transition to hybrid or online education (Sobaih et al., 2021). Budapest University of Technology and Economics (BME) initiated its own coping initiatives, especially in hands on laboratory courses, to ease the transition to online education (Allen & Barker, 2021; Nesmith et al., 2021). In the faculty of Economics and Social sciences (GTK) as well, they started to improve and broaden the usability of Moodle to better organize the classes electronically. Maintaining academic engagement levels during the pandemic waves was the main challenge facing universities worldwide. The COVID pandemic impacted universities all around the globe, compelling many to explore novel techniques to virtual learning in order to maintain students' engagement and productivity levels. Gamification has caught the interest of educational researchers since its rise in popularity in early 2010 (Fui-Hoon Nah et al., 2014; Swacha, 2021). Educational gamification is a technique for improving engagement in an educational setting by introducing gaming elements (Dichev & Dicheva, 2017; Kam & Umar, 2018). In recent years 'gamification' has been perceived as a solution for increasing engagement in many fields and aspects such as in business organizations, academic engagement and in promoting sustainable behaviours (Koivisto & Hamari, 2014; Najjar & Salhab, 2022; Xiao et al., 2021). Previous literature also suggests that demonstrated accomplishments by affordances are most typically used in gamification in education and learning (Majuri et al., 2018). Several research have been conducted to investigate the negative impact of pandemics on academic engagement (Babu et al., 2020; Farooq et al., 2020) however literature offers no clear solution for retaining students' engagement and decreasing dropout rates. Our research is a comparative experimental study that investigates the differences between students' engagement, dropout rates and performance in two courses in which one is gamified. Research findings also measured students' satisfaction levels after the successful completion of the courses combined. The courses are of an elective nature and were introduced by the university during the COVID-19 pandemic.

3.2 Literature Review

The rapid growth of internet technologies and the continuous revolution of computer software over the last decade have transformed higher education practices (Hanson, 2009; Tayebinik & Puteh, 2012). E-learning is a subset of technology-based learning that includes websites, learning portals, video conferencing, YouTube, mobile apps and a plethora of other free websites for blended learning tools (Shahzad et al., 2021). Following the suspension of in-person education, worldwide academic institutions

used various types of E-learning (Bao, 2020; Abdullah & Abdulla, 2021). Students' engagement in distance education via e-learning continues to be an intriguing research topic (Kew & Tasir, 2021; Yang et al., 2021) as according to literature research, students of the twenty-first century are considered digital natives (Sharma & Gupta, 2021). Engagement entails students devoting their time and efforts to the study materials displaying learning improvements and interacting meaningfully with others in the class (Dixson, 2015). Students' engagement is a vital component of high-quality e-learning since it refers to students' attempt to foster a psychologically committed attitude toward remaining involved in the learning process, especially in obtaining new information and improving critical thinking abilities (Rajabalee & Santally, 2021). Low student engagement levels and high dropout rates are the two major challenges facing e-learning in higher education (Palani et al., 2021; Smaili et al., 2021). Despite the fact that it has been the subject of several studies, dropout rates in e-learning are often greater than those in face-to-face education (Queiroga et al., 2020). In terms of data prediction and analysis, machine learning has improved considerably over the years. This process proved its importance in the educational sphere for monitoring student performance and identifying early disengagement factors (Ciolacu et al., 2017). Many authors examined the educational benefits of gamification (Duggal et al., 2021; Raju et al., 2021) and the emphasis of gamification procedures, which often focus on two goals: Educational learning objectives relating to the content, and fun learning goals connected to the user experiences they produce, such as happiness and fulfilment (Sailer et al., 2017). Game mechanics, often known as game elements, are the components used in and generated from games. The frequently used game elements are as follows: points, badges, leader boards, challenges, levels, rewards, virtual goods, feedback and progress bars (Dichev & Dicheva, 2017; Hamari et al., 2014; Werbach & Hunter, 2012). Game mechanics are fundamental components of gamification that primarily reflect the application aspects found in games (Huotari & Hamari, 2012; Kalogiannakis et al., 2021; Mekler et al., 2013). Over the years and especially during the pandemic, gamification proved its significance in minimizing students' dropout rates and influencing higher engagement levels (Bouchrika et al., 2021; de la Peña et al., 2021). Moreover, students' satisfaction level is also a fundamental factor in analysing the efficiency of gamification implementations. Satisfaction has long been researched and defined in literature, and it is most commonly characterized as a comparison between expectations and perceived service quality (Oliver, 1980). Students' satisfaction has a major influence on the overall success of the e-learning process and contribute to its improvement (Cidral et al., 2018; Yekefallah et al., 2021). Nevertheless, previous literature lacks practical case empirical analysis on students' behaviour during the pandemic, as literature investigated and focused on one of the gamification effects and neglected others. Our research aims to analyse students' educational behaviour which will encompass their engagement levels, dropout rates and performance throughout the semester. The research was conducted via Moodle platform which is the e-learning platform chosen by BME. Moodle provides an evolving platform for virtual learning management systems and in consequence Moodle became the logical choice for

researchers interested in theories for improving learning and teaching; particularly those related to the controversial concepts of learning styles (Campo et al., 2021).

3.3 Research Methodology

Gamification is a process that intend to change users' behaviour (Hamari et al., 2014). Almost in all games, points and levels are frequently used. When a players' game points exceed a certain threshold, the game level increases (Hu, 2020). In order to statistically quantify gamification effects, we chose to include the following gamification aspects in our course: constructive elements (points, levels, leader boards, feedback, time pressure, progress bar and reminders). Furthermore, we included gamification dynamics by incorporating competition between students as well as challenges before passing every level. Our motivational elements included ownership and social recognitions after students passed their levels (Schöbel et al., 2020). The gamified course was divided into different levels and followed a scaffolding mechanism in which learners weren't granted full access to the course. The aforementioned process emphasized scarcity and unpredictability as physiological motivation tools. Following each level, students were given accomplishment incentives in the form of additional interactive games created using H5P on Moodle. H5P is a free HTML5 Markup Language that facilitates the structuring and presentation of different content on the internet, e.g. videos and interactive elements-based plugin which allows richer content creation in Moodle. Our intention was to improve students' engagement by granting them ownership of their achievements. The elective course was divided into 13 lessons, 10 of which were theoretical while lessons 11, 12 and 13 were practical. The final practical lesson content enabled us to clearly follow students' accumulative knowledge during the course. Level completion required students to watch the lecture and then complete a 5-question revision test. Students got tailored feedback based on their performance on the revision assessments. Students received one point for each accurate response (total 5 per test) and were also required to earn a minimum of 3 points in order to progress to the following subject/level. In case of a failed attempt, student had the possibility to repeat the test. To be eligible for the final test, students had to successfully complete all 13 stages/lessons. The final exam consisted of 20 questions, with one point awarded for each correct answer, and the final test passing grade was 9. Although 9 was sufficient to pass the course, students in the gamified course demonstrated higher motivation to achieve higher scores. After successfully finishing the course students were awarded with a personalized certificate. As for the non-gamified course, it was way much simpler to create, as game elements were removed, such as the H5P games, points, progress bar and road map. The course contained the same learning material, same 13 lessons in the same length, order and layout. Both courses contained the exact same teaching syllabus, videos, test questions and optional learning materials (except for the games). The implemented research methodology is experimental, and the collected data was analysed using SPSS to further validate our research hypotheses cited below:

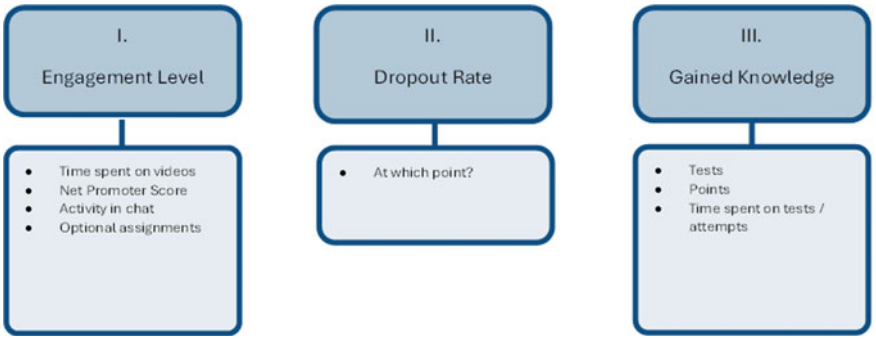

Fig. 3.1 Learning experience indicators model

Hypothesis 1: Did gamification improve students' engagement levels?
Hypothesis 2: Did gamification minimize students' dropout rates?
Hypothesis 3: Did gamification improve students' academic performance?

Since there were no appropriate measurement methods described in the literature, we required a more concise understanding by formulating our own measurement tool which was give the name: 'the learning experience indicator model (Lexi)'. Lexis' three main indicators: engagement levels, dropout rates and gained knowledge enabled us to fully compare the differences between the two courses (Fig. 3.1).

Lexis' main advantage is that it provides a wholesome approach to measure users' engagement, drop-out rates and gained knowledge. Moreover, the Lexi model can be customized to provide empirical measurement of different types of online courses. Engagement Level is the indicator that determines how active, how involved and interested a student is, and Moodle successfully provided detailed data on students' active participation. Learning habits were also recorded and illustrated using the E-learning platform. Engagement Level is calculated based on students' clicks on activities such as watching the course videos, Net Promoter Score (NPS) and their activity in the chat field. Students also had access to optional extra assignments, interactive extra learning materials and essays, which are not required for the successful completion of the course. In terms of dropout rates, we had to contend with the prospect that students might abandon the course entirely since it was an elective course and not tied to their curriculum. Moodle provided accurate time stamped data that gave us insight on which particular level students dropped the course from and drop-out was measured on a Dichotomous scale (0/1). If the Dropout Rate is 0, then the student has dropped the course at a certain level and in this case the student's level of engagement will likewise decrease, and if the Dropout Rate is 1, that means that the student has successfully completed the courses' mandatory parts (the 13 lessons). Exam results are used to compute the student's gained Knowledge, which is an indication of how much a student has learnt over the course.

Fig. 3.2 Road map

Figure 3.2 illustrated above indicates one of gamification visualization implemented in the course. The road map was personalized and indicated each players' progress in the course.

3.3.1 Participants and Procedures

The students from all around the world registered for this elective course, which implies that our sample size was not limited to BME students. The total number of participants in our research was N = 97. The number refers to the number of students who successfully completed the registration form and clicked the 'Enrol me' button on either of the two courses listed above. The course was promoted on the faculty webpage and on the faculty's social media accounts on Facebook and Instagram. As previously stated, students were given the choice to choose from one of the two courses to complete. Students were informed about the various teaching approaches, but they were not informed of which course had been gamified until the end of the semester (Table 3.1).

The majority of students were between the ages of 19 and 24 and between the ages of 25 and 30. A large proportion of which were, as expected, university students interested in the course. Moreover 77% of our students were males and 16% were females. Most of our sample population reported working full time. Students were also questioned in regards of their digital skill sets. The Fig. 3.3 illustrates their answers.

Almost all the students had their own computer or laptop, and almost 85% of them were able to instal software and update the operating system. Net promoter scores (NPS) were incorporated after the third lesson in both courses. The number of respondents in the gamified course was 19, however the number of respondents in the non-gamified course was limited to 11. Although the participation in this

Table 3.1 Courses participation

The sample size of the gamified course (BMEM_EN_A)	59 students
The sample size of the non-gamified course (BMEM_EN_B)	38 students
The total number of students who completed the courses	23 students

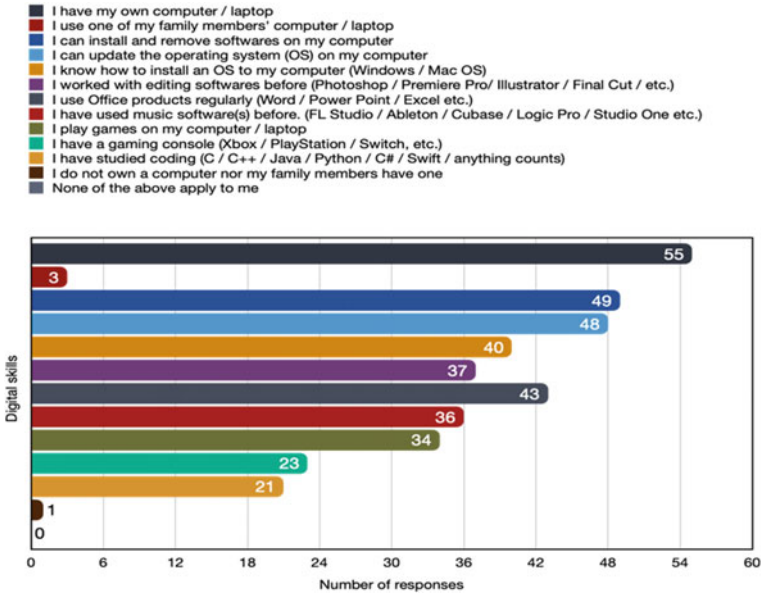

Fig. 3.3 Students' digital skills

questionnaire was voluntary only one student which was enrolled in the gamified course skipped it. Most students' overall happiness was on the upper half of the chart, and their average happiness score was 7.

3.4 Analysis and Results

3.4.1 Engagement Levels

We calculated the levels of engagement among students in both courses. Students who did not finish the course, i.e. dropped out at a given point in the course, had a substantially lower level of engagement. Comparing time spent learning on both courses, the results were significantly different. Completion data was the only relevant data in this measurement. The students enrolled in the gamified course have spent an average of 56.75 h (fifty-six hours and forty-five minutes) on the course which equates to two days, eight hours and 45 min. By contrast, the total duration of the video materials for the whole course is two hours and eight minutes. Analysing the non-gamified course data informed us that the average hours spent on the course is 22.7 h (twenty-two hours and forty-two minutes). The radar chart indicated below illustrates our research results transformed into percentages (Fig. 3.4).

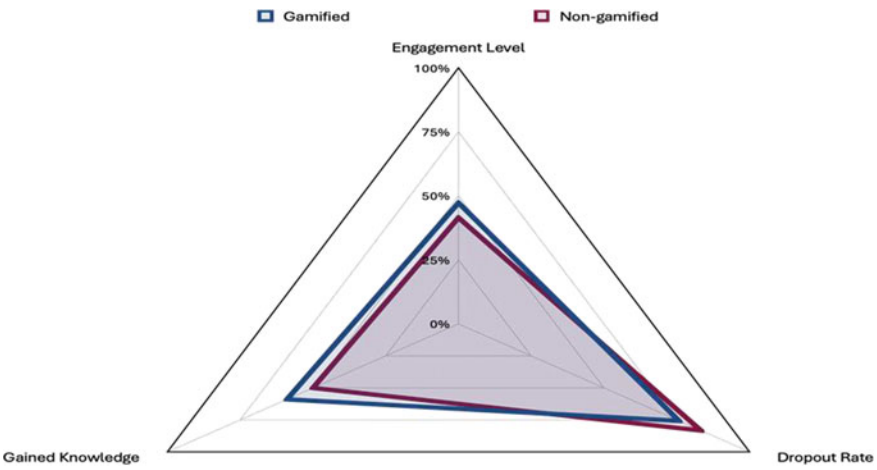

Fig. 3.4 Results radar chart

To further verify our second hypothesis, we analysed our courses engagement levels data using SPSS. Firstly, we conducted Kolmogorov–Smirnov and Shapiro–Wilk normality tests to better address our sample distribution. Kolmogorov–Smirnov test indicated a value of $0.00 < 0.05$, moreover Shapiro–Wilk normality test indicated a value of $0.03 < 0.05$ and therefore our sample is not normally distributed. Consequently, Mann–Whitney U tests were conducted on our engagement metric (Pallant, 2016). Test results indicated a moderate to strong differences between students registered in courses A and B in terms of courses' engagement levels. P. value: $0.033 < 0.05$, and Mann–Whitney U value of 345.0. Mean rank of the non-gamified course group was also smaller than the mean rank of the gamified group $26.78 < 36.68$. By carefully examining our findings, we can conclude the validity of our first hypothesis: H1. gamification improved students' engagement levels. The optional chat module illustrated in both courses was not used by any of the courses' participants.

3.4.2 Dropout Rate

If a student relinquished the course at any point and did not reach the final lesson/level, they were considered as 'dropped out'. Analyses of drop-out rates in both courses the results were as follows:

Gamified course dropout rate: 75.8%
Non-gamified course dropout rate: 83.3%.

The previously reported statistics did not exhibit a significant difference between the two courses; however, it does indicate that students enrolled in the gamified course were less likely to drop out. Another intriguing observation was that several

non-gamified course dropouts reregistered again for the gamified course, but none of the gamified course dropouts reregistered for the non-gamified course. In order to properly address our sample distribution, we performed Kolmogorov–Smirnov and Shapiro–Wilk normality tests on this variable as well. The tests indicated our dropout rate data is normally distributed $0.518 > 0.05$ and $0.400 > 0.05$ respectively. Therefore, we conducted an independent T test to validate our second hypothesis. Test results indicate a sig value of $0.008 < 0.05$, t value of 7.631 and a degree of freedom df of 95 which empirically validates our second hypothesis H2, i.e. gamification decreased students' dropout rates.

3.4.3 Academic Performance

Student progress has typically been measured via the use of standardized tests, and academic scores. We filtered students' data, especially the ones that relinquished the course shortly after registering. Secondly, we examined Moodle logs and determined the points students have accumulated and averaged their results. The variation in the number of course participants had no influence on the outcome. The conclusion was determined by 11 revision exams placed at the end of each Lesson/Level, including the final examination. The average number of points obtained by students in the gamified course was 44.2, whereas this number was 37.98 in the non-gamified course.

We implemented the same research methodology on our third research variable (academic performance) and analysed our data on SPSS. After conducting Kolmogorov–Smirnov and Shapiro–Wilk normality tests, our findings indicated that our sample is not normally distributed $0.01 < 0.05$ and $0.00 < 0.05$, respectively. Similarly, to our engagement levels' analysis, we performed Mann–Whitney U tests on our academic performance variable. Data analysis demonstrated a P value of $0.128 > 0.05$, and Mann–Whitney U value of 390. The mean rank of the non-gamified course group was smaller than the mean rank of the gamified group $28.44 < 35.46$. Based on our findings, we can infer that although our experimental methods and analyses revealed differences in averages between the two courses, that may be attributable to the gamification impact, our statistical data indicates that academic achievement is independent from gamification.

3.4.4 Satisfaction Levels

We evaluated students' satisfaction levels in both courses; however, we were unable to compare students' satisfaction levels across the two courses due to technical limitations. Students' satisfaction was measured using a five points Likert type response scale where responses ranged between 1 (Strongly Disagree) and 5 (Strongly Agree). Questionnaire statements included: 'The course did not meet my learning needs', 'I am satisfied with this online course', 'I would recommend this course to others'. Our

students were overwhelmingly satisfied with the course, with 91% expressing their contentment in both courses. Approximately 90% of those who have enrolled in our courses have stated that they would recommend this course to others.

3.5 Discussion and Conclusion

Gamification educational advantages has been thoroughly addressed in previous literature; however, the pandemic presented the opportunity to empirically investigate those advantages in E-learning and distant education in maintaining students' engagement levels and minimizing dropout rates. At BME GTK, we implemented a research analysis to evaluate gamification educational potential in a higher education context. Research results proved gamification advantages in influencing higher academic engagement and decreasing students' dropout rates. In terms of performance levels, research findings revealed variations in students' mean test scores, although this conclusion was not statistically supported. The courses' elective nature represented a hurdle in retaining students' enrolment which was clearly featured in our dropout rates data. Students' commitment to the course has also been influenced by their genuine interest in the course content. Our research recommends implementing the same research methodology on a fundamental university course to reduce bias. The game features included in this research demonstrated their academic psychological influence. Our research also recommends informing the students of the gamified nature of the course which can increase academic competition; however, competition levels should be assessed as well in order to avoid creating extra stress that might jeopardize the overall implementation. The chat module implemented in both courses was not utilized by any student. Moodle' chat module is archaic compared to newer communication tools; however, the lecturer did not utilize the chat feature as his primary method of communication. Using this feature might lead to a deeper sense of community in distance learning classes if it was initiated by the course lecturer. According to Moodle logs our interactive games and progress bar were clicked and visited more than 200 times. As a result, the mentioned components became one of the most frequently visited sections of the course. Despite the fact that the deployed interactive games had no major instructional value, they enhanced the students' learning experience and increased the amount of time they spent on the course overall. In order to improve the learning experience, it is beneficial to include a game that is related to the course subject. Even though Moodle only has a limited capacity to handle gamified components utilizing H5P at this time, it continues to be a viable option for universities throughout the world, particularly when compared to alternative learning systems that do not support gamified features. The instructional videos utilized in this course were pre-recorded, and students received no assistance other than what was included in their learning material. Time was also a significant technical disadvantage, as the entire course curriculum, including learning materials and videos, had to be created from scratch. This course was not limited to BME students and therefore we received and welcomed students from all over the world.

Students had varying equipment, internet speeds and English literacy, which may have contributed to our higher dropout rates. There are likely to be additional significant differences between the two courses, which may be detected if the two groups of students were compared using a larger sample size.

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Chapter 4
Learners' Experiences with Emergency Remote Learning at the Palestinian University During COVID-19 in Light of the INEE Minimum Standards

Kefah A. Barham

Abstract Emergency remote learning has been adopted widely by educational institutions worldwide to provide students with ongoing education during the COVID-19 pandemic. This study examines and interprets the lived experiences of Palestinian university students who took part in emergency remote learning (ERL) during COVID-19. We can help ensure the success of ongoing ERL and better include similar programs in the future by examining how university students learned during COVID-19. The study used a qualitative phenomenological approach to answer the research question. Forty students from An-Najah National University were asked to write an essay about their experiences. The researcher employed thematic analysis in light of the five INEE emergency domains in education (Foundational standards, access and learning environment, teaching and learning, teachers and other educational personnel, and education policy). The study showed that access and learning environments and teaching and learning domains were the most prevalent among other categories. Online learning was hard for students because they had to be connected to the Internet all the time. On the other hand, it gave them access to a lot of information. Students described their emergency remote learning experience as "interesting and exhausting."

Keywords Emergency remote learning · Higher education · COVID-19 · INEE · Minimum standards

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4.1 Introduction and Background

4.1.1 Introduction

The pandemic of COVID-19 devastated academia (Cahapay, 2020; Ismaili, 2021; Rahiem, 2020; Tulaskar & Turunen, 2022; Yan et al., 2021). The United Nations Educational, Scientific, and Cultural Organization (UNESCO) indicated that over 1.37 billion students, or 80% of all students in the world, have been affected by the crisis (UNESCO, 2020). The COVID-19 threat prompted educational institutions to declare an emergency and hastened to transition courses to virtual classrooms. Many institutions of higher learning have decided to discontinue all in-person activities, including labs and other learning opportunities (Rahiem, 2020). To stop the virus that spreads COVID-19, they have mandated that teachers move their courses online (Hodges et al., 2020), and learners must adjust to the shift from in-person instruction to fully remote online instruction, where synchronous video conferences, social media, and asynchronous discussion forums become their primary venues for knowledge creation and peer communication (Yan et al., 2021).

Due to this crisis, learning environments were frequently chaotic, with teachers hastily transferring course material to an online setting using learning management systems (LMS). Faculty then started to record entire lectures for learners to listen to and watch, post assignments online, and grade them digitally rather than by hand (Schultz and DeMers, 2020). The best way to describe this paradigm shift in online education is Emergency Remote Teaching (ERT) (Hodges et al., 2020), also known as pandemic pedagogy (Milman, 2020).

When it came to putting those measures into effect, Palestine was not an exception. Palestinian educational institutions closed their doors on March 9, 2020. Higher education institutions were compelled to implement remote learning to accommodate learners' needs and make up for lost academic semesters. Teachers and learners both encountered a variety of challenges as a result of the quick and extreme transformation. For the benefit of their learners, teachers had to undergo an overnight digital transformation, get over their technological anxiety, and work incredibly hard (Bordoloi et al., 2021; Serhan, 2020).

In Palestinian higher education institutions, the shift to remote learning was implemented using both synchronous and asynchronous learning techniques. The closest thing to a live experience in the e-environment is synchronous learning. Asynchronous learning happens when the teacher and learners can communicate online without having to do so in real time. They are divided into separate locations and periods. The system used for assessment is called Moodle. On the other hand, the synchronous mode necessitates that the instructor and learners communicate via online tools like Zoom at a specific time. According to Khan et al. (2021), these lessons need to be structured to keep learners interested at all times.

4.1.2 Research Questions, Objectives, and Significance

The purpose of this study is to better understand Palestinian university students' experiences with emergency remote learning during the COVID-19 crisis by addressing the following primary question: "How did Palestinian university students experience emergency remote learning as a result of the COVID-19 crisis?" Because it is unknown how long ERL will persist or what additional issues may arise in the future, educational institutions and students must be better prepared. We could enhance current practice by understanding what university students learned during the COVID-19 emergency. Students' feedback is also critical for future improvement of the learning process if a similar situation occurs. Additionally, this study addressed a practical gap in implementing ERL successfully in higher education while meeting the demands of learners.

Numerous scholars worldwide have already undertaken studies on higher education in the aftermath of the COVID-19 disaster. However, all of them relied on quantitative data analysis to get their results. Few research has examined more authentic findings from qualitative methodologies in this singular setting. In the Palestinian context, little research on home learning during COVID-19 used the term "emergency remote learning" (Khlaif & Salha, 2020), and none of those papers referred to the INEE minimum standards as emergency remote learning.

These research findings addressed a knowledge (theoretical) gap in ERT and emergency education at the university level and a practical gap in implementing ERT successfully in higher education to fulfill the needs of learners.

4.1.3 Conceptualizing Remote Teaching

Over the years, educational technology researchers and practitioners have coined terminology to describe the widely varied design solutions produced and implemented: distance learning, distributed learning, blended learning, online learning, mobile learning, and e-learning (Hodges et al., 2020). The researcher in this study used the term "Emergency Remote Learning (ERL)" to refer to the pressing need to transition from face-to-face course delivery to an online hybrid approach (Lorenza & Carter, 2021). The ERL is sometimes used to refer to education that occurs during academic institutions' shutdown rather than online or virtual learning because well-planned online learning experiences are qualitatively different from those offered online in reaction to a crisis or disaster (Rahiem, 2020).

Hodges et al. (2020) distinguished between Emergency Remote Teaching (ERT) and online learning; they defined ERT as a temporary shift away from traditional instruction delivery in response to crisis conditions. It necessitates the employment of totally remote teaching methodologies that take little time to convert to remote learning, a lack of preparation, and students' and instructors' unfamiliarity with new online resources. They will return to that model once the crisis or emergency

has passed. The primary goal in this context is not to recreate a stable educational environment but rather to provide quick access to education and training in a quickly developed and immediately accessible way during an emergency or crisis (Rahiem, 2020). It is not the case with well-planned and structured online education, which many have spent years mastering (Milman, 2020).

4.1.4 Conceptual Framework

The Inter-agency Network for Education in Emergencies (INEE) defines Education in Emergencies (EiE) as "qualitative learning opportunities for all ages in crises, including early childhood development, primary, secondary, non-formal, technical, vocational, higher, and adult education." It provides physical, psychosocial, and cognitive protection to sustain and save lives (INEE, 2010, 117).

Even though the main goal of EiE is to help rebuild after a conflict (Versmesse et al., 2017), research shows that the goals apply to most, if not all, emergency situations. This includes enhanced education response quality, strengthened educational sector resilience, more outstanding educational sector contributions to improved emergency prediction, preparedness, and prevention, and the creation of evidence-based policies and efficient operational procedures (UNICEF, 2011, 7). In 2010, the UN General Assembly passed a resolution recognizing the right to education in times of emergency and urging member nations to follow the minimum requirements of the INEE (UN General Assembly, 2010).

The INEE Minimum Standards for Education assure education readiness, response, and recovery; they are the only global tool that articulates the minimum educational quality and access during emergencies and recovery and development. The INEE Minimum Standards aim to improve the quality of education planning, response, and recovery. They also aim to make sure that all learners, regardless of age, gender, or ability, have equal access to safe, relevant learning opportunities, and those education providers are held accountable and work well together during emergencies and recovery (INEE, 2013).

As depicted in Fig. 4.1, the INEE minimum requirements encompass 19 domains: Foundational Standards, Access and Learning Environment, Teaching and Learning, Teachers and Other Education Personnel, and Education Policy. The guidelines are intended to "provide guidance on how to prepare for and respond to acute events in ways that minimize risk, promote future preparation, and lay the groundwork for a high-quality education" (INEE, 2010, 5).

Numerous countries have used the INEE minimum guidelines to address specific concerns during pandemics. Uganda, for example, set up an education consortium and made a plan of action based on what people thought they needed to do to keep studying while COVID-19 was spreading (Corbishley, 2020). The European Commission (2020a, b) did a survey to find out the problems and possible ways to keep the learning going during COVID-19, with a focus on technical vocational programs. The results showed that most of the people who answered the survey wanted a central

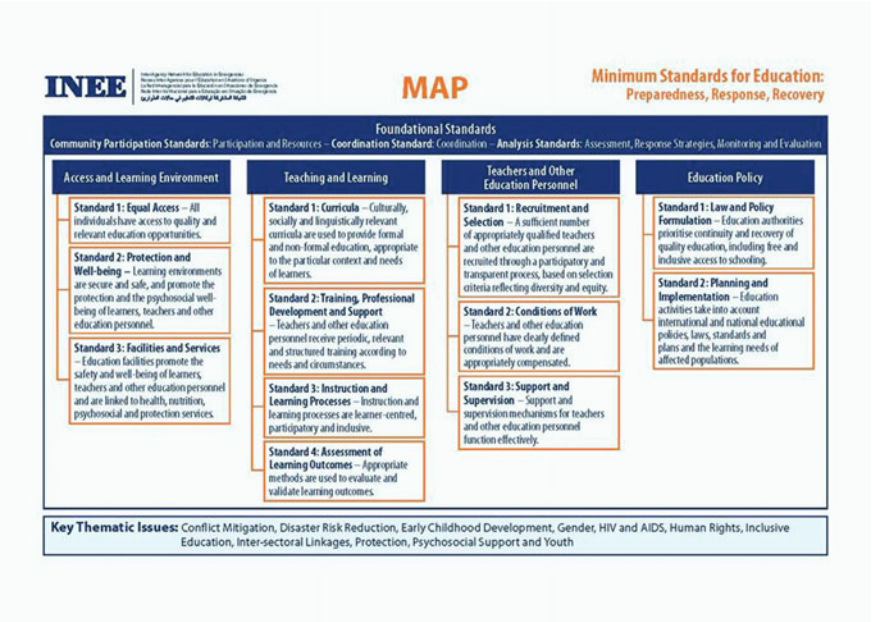

Fig. 4.1 INEE minimum standards[1]

platform for online education that would let people access and share free educational resources made by experts and available in many languages. Fontanos et al. (2021) used INEE minimum standards domains to look at the Philippine education policy framework.

4.2 Research Design and Method

4.2.1 Research Design

This study aims to gain a better understanding of Palestinian university students' experiences with Emergency Remote Leaching (ERL) during COVID-19 by comparing their experiences to INEE's minimum standards. The research used a qualitative phenomenological approach. This phenomenological analysis aims to gather and examine the lived experiences of university students who were obliged to learn from home because of the COVID-19 epidemic. These experiences provided a fresh light on the implementation of ERL following the aftermath of the COVID-19 epidemic (Alase, 2017; Rahiem, 2020).

[1] This diagram is adapted from Minimum Educational Standards in Palestine's Occupied Territories. (INEE, 2010, P. 25).

Table 4.1 Science Table 4.1

Gender	Male	2	40
	Female	38	
Major	English methodology	19	40
	English literature	2	
	Chemistry	4	
	Elementary teacher	10	
	Physics	3	
	Math	2	
Year of study	Senior	5	40
	Junior	3	
	Sophomore	12	
	Freshman	20	

In phenomenology research, the researcher seeks to present a direct description of an individual's experience regardless of the individual's psychological background or the causal explanations that the scientist may be able to supply (Alase, 2017). According to Rahiem (2020), phenomenology can comprehend participants' subjective interpretations of the study's central object by shedding light on the significance of their lived experience and delving into the specific meanings underlying the empiric variants of a given phenomenon, rather than simply applying the technique.

This study enrolled forty undergraduate students from An-Najah National University, pursuing a unique primary and academic year. Additional information on their demographics is found in Table 4.1.

4.2.2 Data Collection

The researcher employed a purposive sampling technique, selecting individuals depending on their accessibility. Participants were informed of the study's scope and purpose, and they were free to leave at any moment if they were dissatisfied. The data collection method was novel: participants were asked to write a reflection essay about their experience with ERL during COVID-19. The researcher instructed them and encouraged them to comment on their experiences. The questions were about how they felt about how quickly remote learning was becoming popular, how ready and why they wanted to learn in this new way, and if they had access to the Internet, hardware, electricity, and learning materials. Additionally, the researcher questioned participants regarding instructor-student and student–student relationships and exchanges in distance education. Finally, participants were asked to select their favorite learning mode once the pandemic was over.

Prior to completing the actual study, the researcher piloted the research instrument with ten non-participants. Participants were given one week to complete their reflection essays, which they submitted electronically via email and other forms of social media. Each reflective essay has a word count of around 1000 words. All reflective essays were written in Arabic as it is their first language and coded in Arabic and then relevant quotations were translated to English according to the research aim and questions. The translation was based on the meaning, as it is hard to have full meaning using verbatim translation.

4.2.3 Data Analysis

To make sense of the data, the researcher used thematic analysis. Thematic analysis (TA) is frequently employed in qualitative research due to its adaptability. It is a technique for categorizing, assessing, and comprehending patterns, frequently referred to as themes (Braun & Clarke, 2016). The researcher adhered to Braun and Clarke's six phases of thematic analysis (2006). To begin, (1) familiarize and acquaint yourself with the facts. Following that, (2) writing codes and (3) investigating possible themes while adhering to INEE's fundamental principles. Following that, (4) going over them and (5) giving them names and definitions, and finally, (6) exploring the findings.

Several steps were taken to ensure confidentiality and anonymity, upon receiving the reflective essays from the participants, all essays were grouped in a whole one-word document with the names of the study participants were anonymous and used pseudonyms in all written text.

4.3 Research Findings

This study aims to examine how university students perceived ERL during the COVID-19 crisis. The data indicated those students' experiences were paradoxical, "both engaging and challenging." The following paragraphs will address each of the students' arguments regarding the benefits and drawbacks of online learning.

Participants cited the simplicity and adaptability of online education as the most frequently expressed positive attributes. The participants discussed the numerous benefits that online education had brought them in this broad sense.

> One of the main advantages of distance learning is that it allows the student to choose the time, place, and manner of learning. This implies that the student can choose the approach that best suits her. (Asma)

> Students may communicate with teachers via social media platforms easily. Since the beginning of electronic instruction, this has been recognized and popular. We (students and instructors) agree on a specific time to meet electronically and take the lesson, which is impossible to do in a traditional classroom setting. (Haitham)

> The student attends her lectures from home in a comfortable environment, as this may be encouraging and have a positive impact on the student's motivation to focus and learn (Basima)

> Many students were aided by the availability of instructional materials 24 hours and on all days of the week. It allowed them to do other things besides study, so anyone who wanted to work or join training classes or sports clubs could do so without interfering with their studies. (Mohamad)

In comparison to the degree of flexibility, participants said that instructors overburdened them with work, making time management difficult.

> E-learning doubles the amount of work; it creates physical, psychological, social, and intellectual issues for both student and teacher. The teacher must first prepare the information, then load it onto PowerPoint slides, record it (audio or video), and share it with the students via social media. You can only imagine how long these procedures take! E-learning requires students to rely more on themselves, look for more material, and complete more assignments, just as it did for students. (Manal)

Additionally, numerous participants expressed mental exhaustion from being overburdened with multiple academic duties for their online classes. These students reported considerable dissatisfaction with the kinds and methods of online education currently available. "I feel drained. The workload of my lecturers is too great for me to endure" (Lana). Students are unhappy and primarily upset because their academic workload has increased significantly, and their Internet access has become inconsistent, preventing them from participating in online classes.

Along with quarantining, the extreme strain that students endured in online learning under COVID-19 substantially influenced their mental health. In their current circumstances, most students reported feeling pressured, anxious, frustrated, and depressed. "During online learning, I felt alone because I spent hours sitting in my bed, staring at my laptop screen, or doing exercises and homework that our professors gave us," says Shahd.

The second most positive thing that our participants said about learning was that they didn't have to pay for transportation or wait in traffic. Because online education doesn't require students to travel to their schools, they don't have to think about or worry about transportation costs or traffic delays during their daily learning. They don't have to travel to their universities to study and avoid being late for their classes. Because online education does not require students to travel to their respective institutions, they do not have to consider or worry about transportation costs or traffic delays during their daily learning; they do not have to travel to their universities to study and avoid being late for their classes. "The benefit is that you don't have to go to school, pay for transportation, or sit in traffic all day." (Hala). Bayan agreed with Hala and said, "e-learning is perfect for a student with a low income because it saves money on books and transportation." As she elaborated, Inas concurs with Hala and Bayan

> Distance education saves both students' and teachers' time and effort. They are not concerned with making it to class on time or determining the best transportation method to take to attend lectures, which saves them time, effort, and money.

At this point, the dilemma resurfaces. At the same time, online education saves time and money, and financial constraints have resulted in a shortage of resources (e.g., updated software, mobile phones, personal computers, teaching materials, and audio equipment) required for online education. Tasneem added the following to this notion:

> While the idea of e-learning seems accessible to everyone, many people lack smartphones, laptops, or internet access. We found ourselves in this position because our family consisted of six brothers and sisters, and we occasionally lacked technical equipment and could not afford to purchase six machines in this situation.
>
> E-learning requires the student to use technology to follow along with the lessons; as a result, the student must have a computer and a stable Internet connection, which are not always available to all students. Some children with multiple siblings will find it difficult to organize their computer usage so that each of them attends his classes. (Zainab)

According to student responses, recording lectures has also resulted in a paradoxical experience; as Iman put it, "lectures are recorded, which means learning is not limited to sync class." Iman went on to say, "Even though this has some benefits for kids, especially those with certain disabilities, it made students less likely to go to sync classes and gave them a reason to rebel and ignore their schoolwork."

Another interesting conclusion from the participants' essays is about the learning environment and what it's like to be at home. Participants said that online education lets them spend more time at home with their families and study in a comfortable, quiet place. However, they also said that their siblings and other noises in the house got in the way of their work. "With all family members at home, all rooms are crammed with people, noises, and talk, and resolving this issue proved incredibly tough." (Zain). "When the microphone is turned on, our families' shouts and the screaming of street vendors, combined with some sibling clashes, cause us to feel quite embarrassed by our colleagues and teachers." (Rania).

Tasneem also shared her story with us during one of the COVID sync seminars, stating:

> During one of the lectures, my younger sister listened to music on her phone while the professor and students talked about a certain topic. I talked to them while my microphone was on. I was scared and couldn't turn off the microphone quickly. The professor heard the songs and told me I wasn't paying attention. I tried to explain the situation several times, but he didn't believe me. He didn't believe me because he had heard from other students, among other things. He pleaded with me to exit the lecture. Your teacher did not believe you because it was such a horrible sensation. I'm sure that if this situation had happened in a face-to-face classroom, the teacher would have done something very different.

Tasneem's story makes us want to learn more about one of the most important themes that almost every participant brings up in their reflections. It is about social relationships, interactions between students and teachers, and relationships between students.

Participants say that students and professors don't turn on their cameras during synchronized classes for a variety of reasons, which affects their relationships negatively. Dana emphasized the critical nature of the visual connection between teacher and pupils when she stated:

> Visual contact between teachers and students contributes to the strengthening of their bond. Additionally, it enables the teacher to ascertain how the students comprehend her explanation. Unfortunately, this component is missing from e-learning, which has resulted in some students departing the class and becoming preoccupied with other matters. Due to the increased distance between students and teachers, e-learning may affect classroom interactions.
>
> The downsides of distance education include attending lectures using Zoom software, a lack of social interaction, opportunities for students to meet and exchange personal experiences, and a sense of isolation. (Rama)
>
> Students enrolled in online education do not have access to the educational process's social components, as students' inability to see their colleagues and faculty members causes fear, tension, anxiety, and lack of attention, all of which can result in poor academic performance, and as the social environment of the university or school stimulates students to participate and do better. (Zainab)

One of the obstacles students encountered was a lack of Internet access and technological difficulties. Not all students have reliable Internet access at home, and not all students have the necessary devices. According to Wafa:

> For distance learning, you need a computer, a way to connect to the Internet, and, in some cases, a camera. Because these technologies are essential to the distance learning process, without which information cannot be transmitted, and learning cannot be completed.
>
> There were some problems, like the audio cutting out and, on rare occasions, the whole system going down because of a power or Internet outage. Due to these complications, instructors were forced to resume the course and reclaim students' attention. Naturally, all of this is done during class time. (Leena)
>
> Once, the Internet was down during an exam, and before I could turn it in, I was forced to call the instructor and explain the issue. This entire exercise undermined my instructor's trust and credibility until he was convinced of my point of view (Dana)

4.4 Discussion

This study aims to analyze and make sense of what Palestinian university students went through while taking part in emergency remote learning (ERL) during COVID-19. The results showed that students saw both the pros and cons of online learning, which is similar to what other studies have found. In particular, the benefits of convenience are similar to the benefits of online learning that have been talked about in the past (Hashish et al., 2022; Yan et al., 2021). The students all agreed that online learning gave them more freedom and helped them get better at managing their time by letting them prepare and study materials, finish assignments, record and review lectures, and learn on their own. Also, online classes save time, which is important to students because the time they spend alone on the bus or car could be used to do their homework or spend time with their families and friends. These results are similar to what Sadeghi (2019) and Hashish et al. (2022) found. They showed that online learning gives students more freedom over where they study, saving them time and money because they don't have to drive to and from campus.

The current study adds to what they already know about the pedagogical, logistical, socioeconomic, technological, and psychological problems that students face when learning online in the context of COVID. Overall, the results show that each student had different problems and different ways to deal with them. So, they should be seen as the result of how many different things work together. Students' essays suggest that their online learning challenges and strategies were influenced by the resources they had access to, their interactions with their teachers and peers, and the school's online learning policies and rules.

The most common problems that students had were not being able to connect to the internet, not being motivated, having trouble focusing because of distractions around them, and not understanding what they were learning. Students sometimes didn't talk to each other, and group discussions didn't always work with the virtual learning method. Most online learners may feel stressed because of these problems, and there are some bad things about them. Amir et al. (2020), Chung et al. (2020), and Almendingen et al. (2021) all found similar problems with online learning. These problems include more distractions, more difficult technology, less social interaction, and more trouble staying in touch with instructors. In this way, Chung et al. (2020) suggested that universities hold more training sessions to better prepare professors to teach online learning content and interactive strategies and improve the subject matter.

4.5 Conclusion and Implications

The goal of this study was to find out how students in Palestine experienced emergency remote learning during the COVID-19 pandemic. The results showed that learners who took part in online education had contradictory feelings and experiences. The participants emphasized the advantages of online learning, including more flexibility, convenience, and availability of instructional resources. In addition, they highlighted the significance of social contacts and proficient communication with educators and classmates. These findings indicate that online learning can be a feasible and efficient method to facilitate education in emergency situations.

In the Palestinian context, there have been many arguments and discussions about what online learning is and whether or not it can work. Several things can be learned from this research. First, it emphasized how important it is for colleges and universities to be ready and able to respond to emergencies. Policies, protocols, rules, technological infrastructure and resources, instructional delivery, staff development, possible differences, and cooperation between key stakeholders are all very important (i.e., parents, students, teachers, school leaders, industry, government education agencies, and the community). Second, the results have made us more aware of the problems learners may face if we switch to all online learning, especially those from places like Palestine that have few resources, bad Internet connections, and bad places to learn at home. Educational institutions that teach similarly should use these data to make and improve plans for learning continuity that will lessen the effects of

the crisis. This study also gave learners a chance to think about different problems, which is important for making policy, making decisions, and putting online learning into place. Third, teachers can use the data to come up with effective ways to deal with problems, especially in important areas. The results taught us a lot about how learning tools, learners, and learning outcomes work together in an online learning environment.

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Chapter 5
Digital Literacy in the Palestinian Public Schools: The Influence of Gamification-Based Learning

Kifaya Sabbah and Yousef Sabbah

Abstract Digital literacy refers to a set of attitudes, knowledge, and skills, which assist individuals to access digital information effectively and ethically. Moreover, it refers to the use of ICT tools that enable learners to communicate with each other and to prepare and assess digital educational resources. Both teachers and students should employ different learning methods to improve their digital skills and acquire an acceptable level of digital literacy. Game-based learning offers a good means to achieve this objective. The present research paper investigates the impact of gamification on digital literacy among students in public schools. A combined quantitative and qualitative research method was used based on quasi-experimental pre/post-test as well as semi-structured interviews. The researchers used Minetest game as an intervention to develop ICT skills on a sample of students who were underwent the suggested program developed by Alnayzak non-profit organization specialized in education in collaboration with the Palestinian Ministry of Education (MoE).

Keywords Game-based learning · Digital literacy · Gamification · Minetest game

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5.1 Introduction

Information and communication technology (ICT) has been increasingly used in teaching and learning, which points at ICT skills as essential tools in the current digital era (Ananiadou & Claro, 2009; European Commission, 2013). Therefore, schools should maintain sufficient ICT infrastructure to ensure an effective use of technology in education. The importance of the ICT tools lies in offering efficient tools for students' learning, mainly visualization, simulation, and gamification for developing digital educational resources, which can be used in interactive learning, intelligent tutoring, collaboration, assessment, and feedback (Ferrari, 2013). The teachers' need for ICT tools points that teachers should receive professional training to improve their skills to best use ICT in their teaching and to enable them to overcome obstacles facing their use (Law et al., 2008). Furthermore, digital skills are considered as prerequisites for innovation and creativity in many industries. Therefore, educational institutions need to prepare their curricula based on these skills to have the needed outcomes for their students (Coskun, 2015).

Researchers interested in ICT skills for the different educational players started to talk about digital literacy. Laanpere (2019) reported it as an alternative concept to competences in using ICT, media, and digital devices, and Ferrari (2013) discussed the relationship between those concepts. Law et al. (2009) described digital literacy as the ability to perform processes related to ICT, such as managing and producing information through digital technologies. Nascimbeni and Vosloo (2019) said that digital literacy refers to the knowledge, skills and attitudes that allow the individual and community to flourish and thrive in a digital world, as appropriate to age, context, and local culture.

Palestine started to pay attention to issues of digital literacy in the classroom, where its attempts have met challenges to integration. Despite these challenges and due to COVID pandemic, Palestine continues its efforts to facilitate teaching and learning in distance learning. In the context of these efforts, educational institutions suggest programs that involve gamification in digital literacy. Al Nayzak developed Digital Entrepreneurship Adolescence Leaders (DEAL) program, which uses gamification of learning and coding to develop crucial life skills that would facilitate the transition from school to life and work. It employs Minetest and coding tools into creating innovative educational opportunities and improving students' life skills. Moreover, the DEAL program intended to develop active citizenship learning employability personal empowerment. To do so, the program adopted life skills and citizenship education initiative that was developed by the UNICEF (Al Nayzak, 2018).

5.1.1 Problem Statement

In 2019, the households who own a computer (e.g., desktop, laptop, or tablet) in Palestine reached 33% compared to 44% of households with children enrolled in education (10–17 years old). In addition, the households who have access to the Internet at home reached 80% compared to 86% of households with children enrolled in education (10–17 years old). There is no significant gap between urban and rural areas, whereas a large gap exists between female-headed and male-headed households in terms of available ICT tools. For instance, 38% of female-headed households compared to 11% of male-headed households do not have a smartphone. Related to digital literacy, about 73% of individuals (10 years and above) have basic skills compared to 46% who have standard skills and 10% who have advanced skills. Basic skills include copying files, folders or using copy and paste tools, and sending emails with attachments. Standard skills include installing or configuring software or using computational formulas on spreadsheets. Advanced skills include purchasing goods through the Internet as stated in the Household Survey on Information and Communications Technology, 2019 (PCBS, 2020).

Jones-Kavalier and Flannigan (2008) describe digital literacy as knowledge, skills, and the ability to use ICT to accomplish daily tasks. Lee (2014) says that digital literacy includes the required ICT skills to obtain information and communicate with others. Moreover, it includes skills to acquire jobs, succeed economically, and participate in citizenship and collaborative platforms actively (Iordache et al., 2017). There is clearly a gap between what is provided by educational policies and what is needed by the community. Traxler (2018) says that existing models and practices give a general outline of what might fill this gap whereas the specifics are local and contingent. This indicates the need for interventions that contribute to bridging the gap between what is provided and what is needed. One such intervention is a gamification-based program.

Peled (2020) refers that teachers provide students with literacy needs to acquire the required skills and competencies to engage with their society. Alexander et al (2016) argue that the current generation of students needs to understand how to publish content in various digital formats, where being a scientist means being able to communicate complex information in visual manners, and being an entrepreneur involves sharing the collective mission across the community.

In the present experiment, teams of students design, program, and produce digital projects using gamification. It is expected that these digital projects develop the students' digital literacy. The present research will investigate the impact of designing and programming digital projects on the students' digital literacy.

5.1.2 Research Rationale

The adoption of ICT at schools has several benefits. For instance, digital technologies ensure that students acquire the twenty-first-century skills, including computer information literacy (CIL), which is essential to life. This enables to access educational resources and rich learning materials, to enhance their engagement and interest, and to support teachers in planning and design of effective lessons (Kozma & McGhee, 2003).

Developing digital literacy as part of the curriculum is not related to modernity or just trying to engage students in the educational process. It addresses the changing nature of knowledge and recognizing that students need different types of skills and knowledge to improve their experience. This means that developing digital literacy in teaching prepares students to be effective, competent, and critical in the digital era (Hauge & Payton, 2010, p. 12). Therefore, ICT is necessary to be integrated throughout the curriculum, where students can improve their digital literacy along with content in the subject area (Frei, Gammill & Irons, 2009). In other words, they share digital-literacy concept.

Laanpere (2019) called to carry out several attempts in order to adapt to technological innovations. These attempts include redesign of outdated curricula and improving professional development programs. Moreover, educational policy indicators, recruitment of teachers and monitoring tools for digital literacy should be developed. This argument indicated the importance of an ultimate goal of developing digital literacy for both teachers and students. Similarly, Lee (2014) supported this argument by his recommendation to provide students with opportunities to improve their digital literacy through education to facilitate digital inclusion and connection.

In addition, Bruce (2002) and Nawaz and Kundi (2010) considered digital literacy a cultural product with social, economic, and political aspects. It has a significant impact on the ongoing strategies of digital transformation and related development of the cultural, educational, and societal system. This perspective highlights why individuals need to develop their digital literacy in a step forward toward digital citizenship and participation in the digital society (Junge & Hadjivassiliou, 2010). The present research intends to examine the impact of a suggested game on developing students' digital literacy, and conclude the affected domains.

5.1.3 Research Questions

1. Are there any significant differences in the means of digital literacy between experimental and control groups of students in public schools?
2. What are the students' viewpoints toward the impact of gamification on digital literacy in the public schools?

5.2 Literature Review

Lee (2014) argues that digital literacy is functional in digital inclusion and citizenship, which means that digitally illiterate persons are excluded from the digital culture (Orrick, 2011). On the other hand, digitally literate persons have the ability to develop their critical, creative, cognitive, and social capabilities to use ICT in their personal and social life (Junge & Hadjivassiliou, 2010). Therefore, students need to develop their digital literacy that supports in performing their tasks and assignments at home and at the school. To do so, it is necessary to investigate their level of digital literacy at the schools. Alexander et al (2016) say that students need to learn how to use technology to solve problems. Digital literacy is related to information literacy as it involves finding, assessing, and making use of information in a networked environment.

Nelson et al. (2011) point at the ambiguity of the digital literacy concept due to the challenges facing teachers in curricula and course design while developing digital literacy. The authors mentioned some of these challenges, such as:

- Lack of expected learning outcomes or a common list of digital literacy skills.
- The gap between schools and students' expectations regarding their knowledge and skills.
- Many ICT skills such as students' computer and Internet proficiency depend on various factors such as personal innovativeness and concerns as well as their socio-economic background.

The ambiguity of the digital literacy concepts no consensus on a framework for digital literacy that meets the demands of a global society. Spires (2018) says that digital literacies are shaped and defined according to the sociocultural context in which they occur, and are continuously expanding as new technologies are introduced. Several frameworks were developed for digital literacy in two or more of nine dimensions, as shown in Table 5.1.

Calvani's framework covered two of the acquired skills including technological and cognitive competences (Calvani, et al, 2012). The maximum competences were covered by Ala-Mutka (2011) with eight skills. Černochová and Selcuk (2019) and Zhao et al. (2018) pointed at digital learning environments as an important factor in enriching students' digital literacy. This is due to the role of digital technologies in developing digital literacy in the classroom. Specifically, researchers studied video games and gamification as means to develop digital literacy.

Watt (2019) says that the Internet transformed the way of reading, writing, and video communication. The practices of digital literacy expand continuously with the advancement in digital technologies, where students and teachers, as well as literacy researchers struggle to keep pace. In general, students show high level of interest and enjoyment of using ICT in learning. In knowledge development, schools are keen to create a stimulating educational environment in which students become enthusiastic (Fraiilon et al., 2014).

Table 5.1 Digital literacy frameworks

Skills and competences	Technological	Information	Communication	Collaboration	Creation	Cognitive	Safety	Social	Critical thinking
Eshet (2004)		√	√		√	√		√	
Hargittai (2007)	√	√	√	√		√	√		√
Calvani, et al. (2012)	√					√			
(Hobbs, 2010)		√	√		√	√			
Ng (2012)	√					√		√	
Ala-Mutka (2011)	√	√	√	√	√	√	√	√	
Van Deursen et al. (2014)		√		√		√		√	
Ferrari (2013)		√	√	√	√	√	√		√
Belshaw (2012)			√	√	√	√			
Jisc (2014)		√	√			√			
Son et al. (2017)		√	√		√		√		
Rodríguez-de-Dios et al. (2016a, b)	√	√	√				√		√
Peled (2020)	√	√		√		√	√	√	√

Gamified-based applications are suggested as a tool to develop digital literacy using creative games. Alt and Raichel (2020) say that gamification makes technology more fascinating for learners, which helps inspire them to adopt desired behaviors and be autonomous in their learning. Gamification is the "use of game elements in contexts that are not games" in order to increase learners' involvement and motivation to perform activities (Dubois & Tamburrelli, 2013). In addition, Koravuna and Surepally (2020) describe the gamification environment as converting the conventional classroom experience into a competitive multi-player gaming and learning platform, which points at the potentiality of gamification to promote digital literacy among students.

Digital Literacy and Computer Science (DLCS) knowledge and skills are important for student preparation for the labor market and to inspire them to pursue innovative and creative careers. The twenty-first century focuses on the essential literacy skills that enable communities and individuals to use technology effectively to solve complex problems (Massachusetts Department of Elementary & Secondary Education, 2016).

According to Kuo and others (2012), national vision regarding digital literacy guarantees a specific level of knowledge in digital technologies behavior and consequences. This facilitates educational programs to enable students to engage in critical thinking when they design and develop solutions to practical problems. The twenty-first century witnessed emerging types of literacy such as digital, media and information literacy. With digital technologies, learning has become independent of time and space, especially, during the Covid-19 pandemic, which has speeded up digital transformation in educational institutions mainly in three dimensions: administration, education, and infrastructure (Coskun, 2015).

5.3 Research Design and Procedure

The researchers used a mixed-methods research design, which integrates both qualitative and quantitative data collection and analysis from multiple sources to approach complex research issues in one single study (Creswell & Plano Clark, 2011). The researchers employed quantitative experimental study based on ICILS scale (Fraillon et al, 2014) and semi-structured interviews for deep understanding.

The experiment includes developing a final project by the sample students, in which they designed a smart city using the following criteria: modern design of smart homes (at least 15 homes), pacing the owners' names, layout of streets with sidewalks, lighting, vegetable farms, irrigation, factories, transportation, solar energy, fortification, public gardens, direction panels, public facilities, historical places, cultural heritage, and urban areas. Figure 5.1 illustrates a sample of students work on Minetest, and Fig. 5.2 shows pictures of the students while developing their projects during training in the DEAL program activities.

After an introductory workshop on a competition for technology and the science teachers as well as psychological advisers, their roles were identified. Al-Nayzak

Fig. 5.1 Project development using minetest game

Fig. 5.2 DEAL training program activities

foundation created accounts for both students and their teacher and conducted a training course, which covered such skills as resource collection, building facilities with their identification boards, labeling the home owner's name, establishing railways and installing the trains, creating production lines in factories, creating shops, exchanging goods, installing agricultural robots, programming them, and delivering automatic irrigation systems.

Then, a meeting was held for the students to introduce them to the competition, and each teacher were assigned to conduct training for a group of students. The teams were selected based on students' commitment and their skills and creativity in design. The students were provided with computers from the school.

The teachers supervised the students during the planning and design of the city's outline on papers. Each student was assigned a one-week task to be accomplished at home or at school during arts and sports classes and breaks. The students collaborated in their assigned tasks with the help of their teachers and the training resources and videos on the Al-Nayzak website.

Table 5.2 Demographic characteristics of the sample

Group	Total	Male	Female
Experimental	33	17	16
Control	31	14	17

5.4 The Sample

This research targets a sample of four classes from the Palestinian public schools at the Directorate of Education of Ramallah and Al-Bireh, which consists of 128 students aged between 14 and 15 years during the second semester of the academic year 2020–2021. This sample was selected based on purposive sampling and targets students who enrolled the DEAL training program. Table 5.2 illustrates the demographic characteristics of the sample. In addition, 96.9% of the sample have internet at home, 83.1% have smartphones, and 72.3% with moderate economic level.

5.5 Instruments

The researcher used a research instrument based on the International Computer and Information Literacy Study (ICILS) (Fraillon et al., 2014), which was used to measure constructs of computer and information literacy. It consists of nine domains; Students' use of specific ICT applications with seven items, Students' use of ICT for social communication with four items, Students' use of ICT for exchanging information with four items, Students' use of ICT for recreation with five items, Students' use of ICT for study purposes with nine items, Students' learning of ICT tasks at school with eight items, Students' ICT self-efficacy basic skills with six items, Students' ICT self-efficacy advanced skills with seven items, and Students' ICT interest and enjoyment with six items. Four-point Likert scale were used ("strongly agree," "agree," "disagree," and "strongly disagree"), but sometimes two-point or three-point scales were used (e.g., "Yes" and "No;" or "never," "sometimes," and "often"). The higher the scores, the more positive attitudes or higher frequencies.

5.6 Reliability and Validity

Reliability refers to the consistency of assessment scores. The researchers used Cronbach's Alpha to measure reliability, as shown in Table 5.3. The total value of the coefficient of Cronbach for the research scale was 0.880, and ranges between (0.610–0.831) for all dimensions, which are considered acceptable for the conceptual construction of the investigated scale (Anastasiadou, 2011). This means that the used scale is reliable.

Table 5.3 Cronbach's alpha coefficients of ICILS dimensions and total score

Measure	Cronbach's alpha
Students' use of specific ICT applications	0.720
Students' use of ICT for social communication	0.675
Students' use of ICT for exchanging information	0.721
Students' use of ICT for recreation	0.776
Students' use of ICT for study purposes	0.713
Students' learning of ICT tasks at school	0.610
Students' ICT self-efficacy basic skills	0.764
Students' ICT self-efficacy advanced skills	0.799
Students' ICT interest and enjoyment	0.831
Total	**0.880**

Validity refers to the process of accumulating evidence that supports the appropriateness of the inferences that are made of responses to an assessment instrument for specified assessment (Moskal et al., 2002). The researchers computed Pearson's correlation between all dimensions and the total score to measure construct validity, as shown in Table 5.4. It shows that all values of Pearson's correlation are significantly positive at 0.01 or 0.05 levels except for a few values, which means that the scale is valid for the study.

Table 5.4 Pearson's correlation between all dimensions and the total score

Measure	2	3	4	5	6	7	8	9
Specific ICT applications	0.707**	0.644**	0.586**	0.562**	0.692**	0.344**	0.623**	0.606**
Social communication		0.221	0.322**	0.276*	0.347**	0.136	0.390**	0.448**
Exchanging information			0.434**	0.447**	0.314*	0.113	0.322**	0.398**
Recreation				0.220	0.358**	0.024	0.280*	0.076
Study purposes					0.279*	0.096	0.137	0.233
Learning of ICT at school						0.127	0.373**	0.321**
Self-efficacy basic							0.289*	0.345**
Self-efficacy advanced								0.332**
Interest and enjoyment								

* Correlation is significant at the 0.05 level. ** Correlation is significant at the 0.01 level

5.7 Results and Discussion

To answer the first question, which states "Are there any significant differences in the means of digital literacy between experimental and control groups of students in public schools?" The researcher followed the quantitative approach. Before intervention, independent sample t-test was conducted on pre-test scores collected from the experimental group and the control group, for both male and female Pre-treatment Measure of Equivalence, as shown in Tables 5.5 and 5.6. Results show statistically non-significant values at $p < 0.05$ level.

Results in Table 5.5 indicate no significant differences between experiment and control groups (t-value = 0.67, p = 0.995). This shows that both groups were similar in their skills and abilities before the intervention was conducted.

Similarly, scores in Table 5.6 show no significant differences between male and female students (t-value = 1.042, p = 0.443), implying that the groups had comparable characteristics and therefore suitable for the study. In addition, means and standard deviations were calculated for the group and gender variables on pre- and post-tests for digital literacy ICILS scale and its dimensions.

Moreover, means and standard deviations for study variables on pre-test and post-test for ICILS scale and its dimensions, as shown in Table 5.7. Results show apparent differences between means on total score of ICILS scale and its dimensions due to study variables.

Figure 5.3 illustrates a comparison between the results of pre-test and post-test for the experiment group on all dimensions of the ICILS scale. It shows that the percentage means of the post-test exceed those of the pre-test for all dimensions, with maximal variance of 20% in favor of post-test for the third and the seventh dimensions (i.e., Exchanging Information and Basic Self-Efficacy respectively). On the other hand, the minimal variance was found in the ninth dimension (i.e., Interest and Enjoyment) with 1% in favor of the post-test. In general, this result indicates

Table 5.5 Independent sample t-test of pre-test scores based on group

Group	N	Mean	SD	t-value	p-value
Experiment	33	2.7578	0.38310	0.670	0.995 (ns)
Control	31	2.6938	0.38127		

ns = not significance at $p < 0.05$ level

Table 5.6 Independent sample t-test of pre-test scores based on gender

Gender	N	Mean	SD	t-value	p-value
Male	34	2.7659	0.34645	1.042	0.443 (ns)
Female	30	2.6670	0.41222		

ns = not significance at $p < 0.05$ level

Table 5.7 Means and standard deviations for study variables on pre-test and post-test for ICILS scale and its dimensions

	Group	N	Pre-test		Post-test	
			M	SD	M	SD
Total	Experiment	33	2.7578	0.38310	3.1206	0.28606
	Control	31	2.6938	0.38127	2.7373	0.40562
Specific ICT applications	Experiment	33	2.7107	0.86160	3.0952	0.72046
	Control	31	2.5169	0.94443	2.6700	0.70251
Social communication	Experiment	33	3.9318	1.01025	4.3611	0.60786
	Control	31	3.9113	0.92319	3.6034	0.96431
Exchanging information	Experiment	33	2.4394	1.30209	3.4306	0.53513
	Control	31	2.7419	1.12080	2.5474	0.98504
Recreation	Experiment	33	4.1091	0.67099	4.1852	0.69048
	Control	31	3.7613	0.92148	3.5000	1.10199
Study purposes	Experiment	33	2.7416	0.68592	2.8683	0.44501
	Control	31	2.7267	0.59404	2.7663	0.60811
Learning of ICT tasks at school	Experiment	33	1.6402	0.27379	1.7778	0.23375
	Control	31	1.6129	0.25074	1.5194	0.27685
Basic self-efficacy	Experiment	33	2.0909	0.52223	2.6975	0.26317
	Control	31	2.1336	0.41721	2.6207	0.50802
Advanced self-efficacy	Experiment	33	2.0909	0.52223	2.3915	0.63536
	Control	31	2.1336	0.41721	2.0887	0.54239
Interest and enjoyment	Experiment	33	3.4199	0.50120	3.4497	0.36332
	Control	31	3.2535	0.39848	3.1601	0.68070

that gamification has a positive impact on digital literacy improvement. Basic self-efficacy obtained the best score with 70% for pre-test and 90% for post-test, which agrees with the results of Banfield and Wilkerson (2014). Learning of ICT tasks at school came next with 82% for pre-test against 89% for post-test, which agrees with Wadhwa and Prabu (2021). The least influenced dimension, but still acceptable, was specific ICT applications with 54% for pre-test to 62% for post-test. The researchers consider this result normal since Minetest might improve students' ICT skills in general but not in specific applications that are not related to the game.

Finally, paired t-test was conducted between pre-test and post-test to evaluate the impact of gamification on digital literacy, as shown in Table 5.8. Results show a statistically significant difference between pre-test and post-test, $t\ (32) = 5.091$, $p < 0.05$. Hence, this evidence indicates that gamification was able to enhance the students' digital literacy effectively based on ICILS scale.

In order to answer the second research question, which states "what are the students' viewpoints toward the impact of gamification on digital literacy in the public schools?", a qualitative approach was followed. The qualitative study was based on

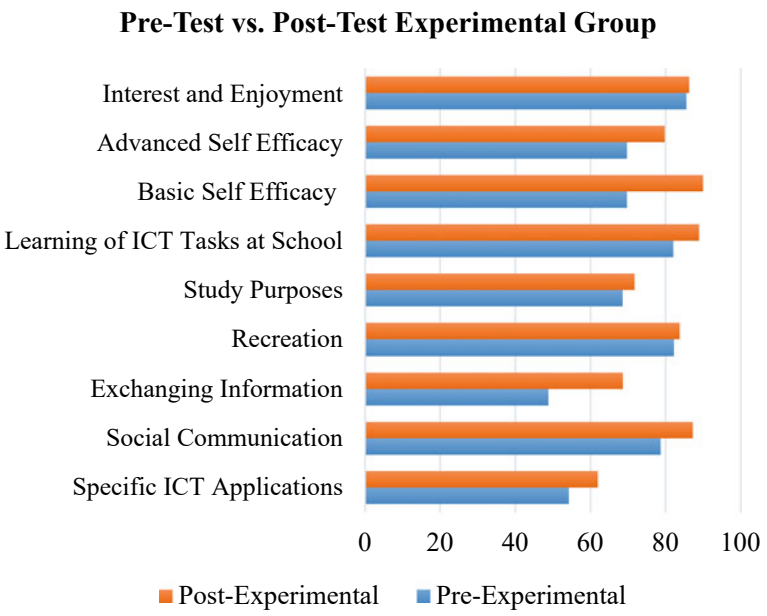

Fig. 5.3 Experimental group pre- and post-test percentage means

Table 5.8 Paired samples t-test for ICILS scale for total post-experimental and pre-experimental group

		Mean	Std. deviation	T-value	Df	Sig
	Post-test	3.138	0.294004	5.091	32	0.000
	Pre-test	2.757	0.382453			

interviews with a sample of six female and four male students who participated in the experiment. The students expressed their experiences in simple expressive words. The inductive content analysis method was used to analyze data, which included open coding, creating categories, and using abstraction to generalize themes based on the categories (Elo & Kyngäs, 2008). The researchers read the data, highlighted the relevant segments of data, exported them to Excel, summarized the meanings, and labeled them with a set of codes to reduce the data size. Finally, we grouped the data segments with similar codes into categories, on which the following themes were generalized:

- **Creation:** Students expressed the creation skills they acquired during their training, such as planning, organization, and design. Before they started implementing their project, they designed the idea that reflects their vision. One of the students said, "*At the first glance, I thought that this project requires a specialized person, but I discovered that I could be a small engineer who masters planning and design and put forward practical ideas in the real world.*" Another student

added, *"This project improved our imaginative skills."* She said, "*We used to meet together and imagine that we live in this city, so we tried to design it in the form we wish.*"

- **Collaboration:** To implement the project, the students collaborated and worked in teams according to inclination, willingness, and commitment. At the same time, students collaborated to accomplish the assigned tasks and expressed positive attitudes toward teamwork, as one of the students said, "*In fact, I used to do all the school tasks individually because I feel more comfortable to work, but after participating in the project, my attitudes changed towards team work and found everyone working hard and doing his best to get the work done.*" In addition, roles were distributed among students to reduce work pressure and to exchange experience. In other words, each team member took the responsibility of his assignment in the team. One of the students said, "*At the beginning, each of us preferred independent achievement to be distinguished from her colleagues without exchange of experience, but at the end of the project we understood the importance of collaborative work and respecting others' opinions.*"
- **ICT skills:** Students have the basic skills in information and communication technologies such as Microsoft office, computers and the Internet. During training in this project, they acquired advanced skills, such as web design, programming languages, client–server concepts, and presentation skills. Some students said, "*With the frequent use of the Minetest game, I acquired multiple skills, such as file compression, programming and problem solving.*"

  In addition, students formed special programming clubs in their schools and carried out various activities and events. One of the students said, *"We formed a programming club consisting of 12 students. We conducted several activities, including training courses on basic computer skills and workshops on cybersecurity, Internet frauds and cyber-bullying. We also conducted creative activities at the school to promote digital literacy among students, teachers and the local community."*
- **Critical Thinking:** Through their experience in Minetest, students expressed their critical thinking and future vision related to study or job, as one of the students said, "*I am convinced now that I should join the scientific branch, because I want to study graphic design.*" Another student added, "*I want to specialize in robotics engineering, as it is a new and advanced branch of engineering I love.*"

  Moreover, the participants of this project received a diploma scholarship in Artificial Intelligence (AI) at the Digital Academy for Scientific Innovation as an incentive. Some students added, "*We were accepted into a one-year diploma scholarship, which is specialized in artificial intelligence (AI) and Internet of Things (IoT). This diploma leads to an accredited certificate that may help in my future job.*"

  In addition, this project promoted fun enhanced learning, perseverance, and time utilization in useful activities. One of the students said, "*By playing the Minetest game and doing various tasks, I spent a good time full of fun and motivation.*" The students also employed their ICT skills in other activities such as social networking, which increased their self-confidence and critical thinking.

- **Challenges and Obstacles:** Students faced difficulties in frequent logout of Minetest, weak internet connection and the limited playing hours. One of the students said, "*while working, we faced some obstacles such as frequent logout of the game using smart phones. Therefore, we used our own computers at school. Also, the amount of the resources for building the cities was limited. There was sometimes difficulty in meeting and communication among the team members.*"

5.8 Conclusion

This research aimed at investigating the influence of gamification-based learning on digital literacy in the Palestinian public schools. Based on the results of this mixed quantitative–qualitative study, the researchers concluded the following:

- Results show that gamified learning has a positive impact on digital literacy in the Palestinian public schools. Before the intervention, both experiment and control groups were similar in their skills and abilities. It was shown that the groups had comparable characteristics, and therefore suitable for the study. Paired T-test indicated a statistically significant difference between pre-test and post-test; evidence that gamification was able to enhance the students' digital literacy effectively based on ICILS scale.
- The comparison between percentage means of pre-test and post-test for the experiment group indicated better results in favor of the post-test for all dimensions of the ICILS scale.
- The qualitative results agreed with the previous frameworks, in which students acquired digital literacy skills such as Information, Technological, Communication, Collaboration, Creation and Critical Thinking skills, while they did not mention the acquisition of Cognitive, Safety and Social skills.
- Students faced some obstacles and difficulties during the implementation, such as frequent logout of Minetest, weak internet connection, limited playing hours, limited amount of the resources for building, and some difficulties in meeting and communication among the team members.

Finally, the researchers recommend that the Palestinian government should conduct a comprehensive survey for all teachers and students on digital literacy compared with other countries at the regional and the international levels. Moreover, the Palestinian Ministry of Education should encourage schools to promote gamification-based learning to enhance the teachers' and students' digital literacy. In addition, it is necessary to investigate other factors such as virtual and augmented reality and their impact on digital literacy, which is considered the cornerstone for a modernized education system.

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Chapter 6
Effectiveness and Dark Sides of E-Learning in EFL Classrooms

Laila Dawoud, Zuwati Hasim, Mohd Rashid Bin Mohd Saad, and Islam Ismail

Abstract Policymakers have tried to control the new situation by integrating technology into education, but the infrastructure was not well prepared for such an event. For the current work, it is sufficient to point out whether technology integration in e-learning was beneficial during the schools' shutdown. The authors also aimed to study the demographic variables' effect on technology integration in e-learning. Another main aim of the paper was to shed light on the dark sides of e-learning. There are critical challenges in teaching during the coronavirus pandemic. Subsequently, a quasi-experimental questionnaire was used to elicit further data. The sample was heterogeneous concerning their specialisation. The selection of respondents included sixty-seven teachers. The main controversial finding of the paper, technology integration in online e-learning is beneficial during the coronavirus pandemic, but several dark sides need to be addressed. Another novel finding, the demographic variables of teachers, such as gender, academic qualification, years of experience, current teaching position and class size, do not affect student achievement or engagement. The result casts a new light on the massive lack of proper training for students and teachers. Another promising finding, students' attendance and motivation for online classes were low. Future studies could further explore this issue by offering the Ministry of Education guidelines on how to enforce school infrastructure to ensure the success of online learning. Moreover, a particular website or software is also required to

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encourage students to interact with teachers, so they can submit homework, answer questions and participate effectively.

Keywords EFL classrooms · e-learning · Learning during COVID-19 · Online teaching and learning · Technology integration

6.1 Introduction

Globalisation resulted in the rapid growth of the internet and technology worldwide in the previous decades. Many educational institutions inserted technology into education. However, it was restricted to partial use in schools. While most teachers still use chalkboards in their classes worldwide, technological devices are increasingly employed in language education classrooms to provide additional practice (Akyuz & Yavuz, 2015). According to Abunowara (2016), technology is becoming increasingly crucial in ELT practice for presenting authentic materials, and it will become a standard feature of ELT practice in the coming years.

Moreover, Yoon (2021) said that in the last 20 years, technological gadgets have played an increasingly important part in English as a Foreign Language (EFL) and English as a Second Language (ESL) instruction. However, technology implementation varies from one country to another. In developed countries, teachers have access to modern technologies and tools; the opposite situation is in developing countries (Al-Wasy, 2020).

The current global pandemic crisis resulting from the coronavirus disease (Covid-19) outbreak has changed people's everyday lives. Governments forced social and physical distancing in public spaces to avoid this contagious disease. The education era has also been affected by the switch to online teaching. According to Li (2014), the elements that promote techno-led language learning should be appropriately considered and addressed collectively, individually and contextually.

This pandemic has significantly affected education as it has compelled academic organisations to close their doors, commencing in China in early February 2020 and subsequently in other harmed countries (Celik et al., 2020; Muthuprasad et al., 2021). According to the World Bank Education COVID-19 School Closures Map (2021), seventy-three countries show school closures at different levels. Likewise, schools and other educational institutions in Palestine stopped formal teaching and converted to synchronous instruction via Microsoft Office Teams. This abrupt shift has several challenges. These challenges prevented teachers from achieving their educational goals effectively.

New technological tools are widely used in the academic industry to enhance the learning process in various subjects, including English (Adnan et al., 2019). Online learning can benefit advanced countries (Basilaia & Kvavadze, 2020). In Palestine, the situation differs; initially, both teachers and students were unfamiliar with online teaching. Despite many studies' positive comments and advantages, a few issues must be addressed. One of the challenges is the learners' and parents' poor skills and

technology awareness (Au-Yong-Oliveira et al., 2018). Most of them neglect virtual classrooms and consider them useless and difficult (Musa et al., 2012). Poor internet access, availability and a lack of cutting-edge technology hampered organisational responsiveness. Another important challenge was the student's ability to participate in digital learning (Zhong, 2020). Transitioning from an indoor to an outdoor language classroom presents several difficulties, especially for teachers (Ali, 2020; Satar & Akcan, 2018).

Studies of online language learning conducted during a pandemic are scarce, especially in the school environment in English as a Foreign Language (EFL). Most online language learning studies have been conducted at the tertiary level (Atmojo & Nugroho, 2020). Based on the short review above, this study mainly aimed at studying the dark sides of online learning by exploring the challenges that EFL teachers face during the online teaching process. It also checked whether technology integration is beneficial or not. Furthermore, it investigated the effect of demographic variables on online classes during the virus pandemic. These goals are illustrated in the following questions:

Q1: Is technology integration beneficial in online EFL classrooms during the coronavirus pandemic?
Q2: Do the demographic variables of teachers (gender, years of experience, current teaching position and class size) affect the results?
Q3: What are the dark sides of e-learning during the coronavirus pandemic regarding technology integration?

6.2 Literature Review

Today's style of learning, processing and interacting with new information has substantial modifications when compared to how learners responded to an identical piece of information a decade ago. Moreover, it is undergoing a continual transformation and adjustment to meet the needs of a new generation of knowledge creators. Students' roles have shifted, and they are now taking the lead in their learning processes (Wu et al., 2020).

From the beginning to the present, adopting new approaches to teaching English has been a struggle (Patil, 2020). Technology has advanced; thereupon, traditional teaching and learning methods can no longer push students and teachers to their most significant potential. Teaching and learning are strengthened and given a new dimension when technology is used (Patil, 2020).

According to Chun et al. (2016), remote learning is a type of education in which students are separated from their teachers. The learning process uses various resources via information and communication technology (ICT). Online learning is a distance education type that incorporates electronic and internet-based technology (ICT) into the learning process (Efriana, 2021).

Currently, not just mobile but also other technical tools are employed to aid learning as part of information and communication technology (ICT) applications.

WhatsApp, Telegram, Zoom Meetings, Google Meets, Google Classroom, Edmodo, and other tools and platforms can be used. The virtual device required to facilitate this online learning is a computer or an Android connected to the internet network. Moreover, due to digital disruption in educational methods, where teachers and students are now members of virtual classrooms, this has become the new normal in the COVID-19 epidemic (Ryn & Sandaran, 2020).

Many authors have studied this topic worldwide. According to Patil (2020), it is the most effective approach to language learning, particularly in emergencies. Another advantage of modern technologies in language learning is that they encourage students to actively participate in their learning environment's (co)construction (Bonner & Reinders, 2018). Students can improve their language skills by connecting with the real world. According to Albashtawi and Al Bataineh (2020), EFL online classrooms have improved reading and writing skills among Syrian university students in Jordan.

Gillett-Swan (2017) confirmed that online surroundings could influence how a foreign language is learnt. Language evaluation processes are frequently poor regarding the allotted range and time. As a result, e-learning techniques can be considered to provide foreign language learners with interactive exercises that engage them at every level of language acquisition and evaluation. For example, instead of solo tasks, the students may be given group presentations, which will help them with group assessments.

Wahab and Iskandar (2020) declared that online EFL faces many challenges. The first is digital equity, where parents cannot offer their children mobile phones or laptops to attend daily classes. Moreover, the poor internet quota makes the number of attendees low. They added that the sudden transition to the online system without adequate ICT training confused EFL teachers since they felt unprepared to use ICT skills in their lessons. As a result, EFL teachers face several challenges in introducing different linguistic skills. For example, teachers find it tough to train students to speak correctly in speaking lessons. They also find difficulty controlling the assessment process, especially in listening evaluations (Ahmad, 2016).

In addition, some researchers examined and linked technology integration with modern educational techniques and the English language. Zhaksylykova and Kalieyva (2020) were one of these scholars who implemented online EFL teaching via various dramatic activities in Slovakia during the Covid-19 pandemic. They revealed the positive impact of the two disciplines on Learners' language in online classrooms, where students became motivated and excited to join their virtual lessons. In their article, Wongsa and Son (2022) connected drama-based activities with Facebook and studied their influence on Thai EFL speaking skills. The findings assured their impact on improving EFL speaking skills among Thai secondary learners and increasing motivation and positive attitudes towards learning the target language. They also created a comfortable and cooperative atmosphere where learners freely communicate with teachers and peers. Some other researchers supported technology integration and suggested designing and introducing dramatic-based e-learning materials in EFL classrooms to improve speaking skills among elementary pupils (Minh et al., 2021). This trend of linking technology integration and educational drama in

EFL/ESL classrooms by scholars confirms the flexibility of technology integration to adapt various modern instructional techniques in English instruction.

Despite the positive effects of online EFL classrooms and the flexibility shown to combine educational trends like drama, some researchers revealed the opposite. Rachmah (2020) claimed that online EFL classrooms were ineffective for several reasons, like the absence of direct discussion between students and their teachers, leading to data misunderstanding or poor understanding among students in Indonesia.

6.3 Method

6.3.1 Research Design

This study is an interpretive paradigm. Based on the goals of this study, the explanatory research design fits with the perspectives of the paper. This design gathers both qualitative and quantitative data equally. It is considered significant to follow up the quantitative data with the qualitative one (Edmonds & Kennedy, 2017). Abuhamda et al. (2021) stated, "Quantitative and qualitative methods are the engines behind evidence-based outcomes." The researchers aim to collect the data comprehensively to offer in-depth results for the target readers. Thereupon, the researchers built this paper based on the explanatory research design.

6.3.2 Tools

The researchers used an online ICT questionnaire. The questionnaire was adapted and developed from a previous study conducted by the Center for the Study of Learning and Performance (CSLP). The researchers obtained the necessary permit from the CSLP to edit and reuse the questionnaire before conducting the study. It is a quasi-experimental questionnaire that includes three sections. The first section contains data in a multiple-choice form to collect demographic information like academic qualification, years of experience, current teaching position and class size. Quantitative data is collected via a five-item Likert form, including twenty items, in addition to two open-ended questions that aim to collect qualitative data for researchers' reference to develop their understanding of teachers' perspectives.

There are different reasons beyond using an online questionnaire for data collection. First, it was common among researchers during the era of COVID-19. Furthermore, the Palestinian Ministries of Education and Higher Education do not allow researchers to collect data physically from schools due to the vast number of Master's and Ph.D. candidates conducting their studies there and to avoid burdening teachers with a tremendous amount of work. The last reason is the researchers' belief in the importance of implementing green instruments to protect the environment. The

researcher collected 67 respondents from English teachers from different parts of Palestine to answer the questionnaire.

6.3.3 Sample

The participants of this paper were selected by researchers regardless of their age, gender, classes they teach, and years of experience from all different parts of Palestine, the West Bank and the Gaza Strip. To achieve the goal of this study, the researchers addressed the questionnaire to a total number of (67) teachers. All of the participants of this study are in-service English teachers.

6.4 Results

6.4.1 Questionnaire Reliability

To measure the degree of the questionnaire's reliability, it was tested using the Cronbach Alpha formula to calculate the consistency of the questionnaire. Table 6.1 shows this result.

6.4.2 Demographic

In this section, the researcher analyses the characteristics of the sample of the study; the demographic variables were divided into ten topics as follows.

6.4.2.1 Distribution of Sample Concerning Gender

A descriptive frequency analysis of the demographic data for the research sample showed that concerning gender (sex), males from (n = 23, 34.3%) and females from (n = 44, 65.7%) of the research sample, as shown in Table 6.2.

Table 6.1 Cronbach alpha

No. of items	Cronbach's alpha
20	0.791

Table 6.2 Distribution of the sample concerning gender (sex)

Variable	Variable level	Frequency	Percentage (%)
Gender	Male	23	34.3
	Female	44	65.7
	Total	**67**	**100**

6.4.2.2 Distribution of the Sample Concerning Academic Qualifications

A descriptive frequency analysis of the demographic data for the research sample showed that concerning academic qualification, the largest group had a bachelor's degree (n = 50, 74.6%), followed by individuals holding a master's degree (n = 15, 22.4%). The smallest group was individuals holding a Ph.D. (n = 2, 3%), as shown in Table 6.3.

6.4.2.3 Distribution of the Sample Concerning years of Experience

A descriptive frequency analysis of the demographic data for the research sample showed that concerning years of experience, the largest group had more than ten years of experience (n = 37, 55.2%). The other group had less than ten years of experience (n = 30, 44.8%), as shown in Table 6.4.

6.4.2.4 Distribution of the Sample Concerning the Current Teaching Position

A descriptive frequency analysis of the demographic data for the research sample showed that concerning job title, the most significant group position teaching grades

Table 6.3 Distribution of the sample concerning academic qualification

Variable	Variable level	Frequency	Percentage (%)
Academic qualifications	Bachelor	50	74.6
	Master	15	22.4
	Ph.D.	2	3
	Total	**67**	**100**

Table 6.4 Distribution of the sample concerning years of experience

Variable	Variable level	Frequency	Percentage (%)
Experience	More than 10 years	37	55.2
	Less than 10 years	30	44.8
	Total	**67**	**100**

Table 6.5 Distribution of the sample concerning the current teaching position

Variable	Variable level	Frequency	Percentage (%)
Current teaching position	Grades 1–5	15	22.4
	Grades 5–10	33	49.3
	Grades 11–12	19	28.4
	Total	**67**	**100**

from 5 to 10 (n = 33, 49.3%), and the second group was teaching grades from 11 to 12 (n = 19, 28.4%), and the smallest group were teaching grades from 1 to 5 (n = 15, 22.4%) as shown in Table 6.5.

6.4.2.5 Distribution of the Sample Concerning the Average Class Size

A descriptive frequency analysis of the demographic data for the research sample showed the average class size. Most of the teachers had 21–30 students (37.3%), followed by classes that had 31–40 students (35.8%) and both classes that had 10–20 students and the ones that had more than 41 students had the same number of respondents at (13.4%) each as shown in Table 6.6.

6.5 Results of the Research Questions

A One-Sample T-test was conducted to answer the first research question, as shown in Table 6.7.

6.5.1 Q1: Is Technology Integration Beneficial in Online EFL Classrooms During the Coronavirus Pandemic?

According to the One-sample T-test shown in Table 6.7, all responses were statistically significant. The mean for technology integration and online EFL was (3.51)

Table 6.6 Distribution of the sample concerning the average class size

Variable	Variable level	Frequency	Percentage (%)
Average class size	10–20 students	9	13.4
	21–30 students	25	37.3
	31–40 students	24	35.8
	Total	**67**	**100**

Table 6.7 One-sample T-test results for technology integration and online EFL classrooms

	Paragraph	Mean	Std. deviation	t-value	Sig.
1	The use of computer technology in the classroom increases academic achievement	3.85	0.909	34.684	0.000
2	The use of computer technology in the classroom is effective because I believe I can implement it successfully	3.93	0.841	38.227	0.000
3	The use of computer technology in the classroom promotes student collaboration	3.55	1.132	25.687	0.000
4	The use of computer technology in the classroom makes classroom management more difficult	2.78	1.139	19.948	0.000
5	The use of computer technology in the classroom promotes the development of communication skills	3.51	1.185	24.219	0.000
6	The use of computer technology in the classroom is a valuable instructional tool	3.67	1.006	29.879	0.000
7	The use of computer technology in the classroom is too costly in terms of resources, time and effort	3.39	1.029	26.946	0.000
8	The use of computer technology in the classroom is successful only if teachers have access to a computer at home	3.31	1.018	26.638	0.000
9	The use of computer technology in the classroom makes teachers feel more competent as educators	3.64	0.883	33.778	0.000
10	The use of computer technology in the classroom is successful only if there is adequate teacher training in the uses of technology for learning	3.70	0.985	30.761	0.000

(continued)

Table 6.7 (continued)

	Paragraph	Mean	Std. deviation	t-value	Sig.
11	The use of computer technology in the classroom gives teachers the opportunity to be learning facilitators instead of information providers	3.76	0.872	35.308	0.000
12	The use of computer technology in the classroom is successful only if technical staff regularly maintain computers	3.42	0.972	28.796	0.000
13	The use of computer technology in the classroom demands that too much time be spent on technical problems	3.18	0.984	26.456	0.000
14	The use of computer technology in the classroom is successful only if there is the support of parents	3.24	1.016	26.084	0.000
15	The use of computer technology in the classroom eases the pressure on me as a teacher	3.64	0.811	36.759	0.000
16	The use of computer technology in the classroom is effective if teachers participate in the selection of computer technologies to be integrated	3.60	0.871	33.787	0.000
17	The use of computer technology in the classroom helps accommodate students' personal learning styles	3.64	0.792	37.636	0.000
18	The use of computer technology in the classroom motivates students to get more involved in learning activities	3.73	1.053	29.009	0.000
19	The use of computer technology in the classroom could reduce the number of teachers employed in the future	3.15	1.209	21.318	0.000

(continued)

Table 6.7 (continued)

	Paragraph	Mean	Std. deviation	t-value	Sig.
20	The use of computer technology in the classroom requires software-skills training that is too time-consuming	3.51	0.943	30.431	0.000
	Technology integration and online EFL classrooms	**3.51**	**0.4434**	**64.790**	**0.000**

which is a moderate value with a standard deviation of (0.4434), with most of the responders agreeing that the use of computer technology in the classroom is effective because they believe they can implement it successfully with a mean of (3.93) which is high. The second highest issue that the respondents agree on is that using computer technology in the classroom increases academic achievement, with a mean of (3.85). Unsurprisingly, most teachers disagree with a mean of (2.78) that using computer technology in the classroom makes classroom management more difficult.

6.5.2 Q2: Do the Demographic Variables of Teachers (Gender, Academic Qualification, Years of Experience, Current Teaching Position and Class Size) Affect the Results?

6.5.2.1 Gender

An independent sample T-test was carried out to test if there were no significant differences among the teachers' results regarding gender, and the results were as follows (Table 6.8).

The Independent Sample T-test shows no significant differences between male and female respondents regarding how they perceive technology integration and online EFL classrooms as $p = 0.1q89 \geq 0.05$ at t-value (−0.157).

Table 6.8 Independent sample T-test

Group	N	Mean	SD	t	P
Male	23	3.4978	0.49760	−0.157	0.189
Female	44	3.5159	0.41830		

Table 6.9 Independent sample T-test

Group	N	Mean	SD	t	P
Less than 10 years	30	3.5650	0.39176	1.231	0.223
More than 10 years	37	3.4324	0.47247		

6.5.2.2 Years of Experience

An independent sample T-test was carried out to test if there were no significant differences among the teachers' results regarding years of experience. The results are shown in Table 6.9 as follows.

The independent sample T-test shows no significant differences between respondents regarding how they perceive technology integration and online EFL classrooms depending on their years of experience as $p = 0.1q89 \geq 0.05$ at t-value (−0.223).

6.5.2.3 Current Teaching Position

A One-way ANOVA test was carried out to test if there were no significant differences among the teachers' results regarding their current teaching position, and the results are shown in Table 6.10 as follows.

The One-way ANOVA test shows that there are no significant differences between respondents regarding the way they perceive technology integration and online EFL classrooms depending on their current teaching position as $p = 0.368 \geq 0.05$ at F-value = 1.016.

6.5.2.4 Average Class Size

A One-way ANOVA test was carried out to test if there were no significant differences among the teachers' results regarding average class size, and the results were shown in Table 6.11 as follows.

The One-way ANOVA test shows that there are no significant differences between respondents regarding the way they perceive technology integration and online EFL classrooms depending on the average class size as $p = 0.383 \geq 0.05$ at F-value = 1.037.

Table 6.10 One-way ANOVA

	Sum of squares	df	Mean square	F	Sig.
Between groups	0.399	2	0.200	1.016	0.368
Within groups	12.577	64	0.197		
Total	12.976	66			

Table 6.11 One-way ANOVA

	Sum of squares	df	Mean Square	F	Sig.
Between groups	0.610	3	0.203	1.037	0.383
Within groups	12.366	63	0.196		
Total	12.976	66			

6.5.3 Q3: What Are the Dark Sides of E-Learning During the Coronavirus Pandemic Regarding Technology Integration?

The challenges, according to the respondents, varied. However, they can be summarised in the following points:

1. Digital equity among students and teachers. Some students do not have computers at home in addition to problems with poor internet connection.
2. The teachers state that the percentage of students attending is low.
3. Students and teachers lack face-to-face training to cope with the new tools, such as online platforms.
4. Students were unmotivated to learn through online learning platforms. They are not willing to use them.
5. The learning programmes need more development and planning. Students and teachers complained that the content of learning programmes is not flexible enough to be presented via online platforms.
6. It was hard to communicate with students after class.
7. Teaching some English skills like speaking and writing is not easy via online platforms.

6.6 Discussion and Conclusion

The results revealed the effectiveness of e-learning in EFL classrooms. The findings on using technology in EFL classes at least hint that it can be implemented successfully. Most teachers could achieve their goals through the e-learning mode since they were able to establish valuable topics to attract students' attention and engage them in critical thinking activities. Besides, it offered authentic learning. The implications of these findings again confirmed that teachers feel more competent as educators. They got various options like sending videos or recordings, presenting PowerPoint and creating interactive classes through online learning. The results confirmed that technology integration is a good choice because it allows teachers to be learning facilitators instead of information providers.

Moreover, the results demonstrated that technology is a valuable instructional tool. The focus of class would not be only on teachers but also on students. The use of computer technology in the classroom increases academic achievement. The

computer literacy of teachers and successful engagement for students can improve students' results. Students and teachers quickly access many learning resources that enrich their learning and practice.

This paper also confirmed a few findings regarding demographic variables regarding using online learning. Both genders showed similar results in their responses. Another promising finding was that academic qualification does not affect their attitudes. Teachers with bachelor's, master's and Ph. D. were found to have similar opinions towards online learning. The results demonstrated that teachers' years of experience do not differ in their views. Regardless of their expertise, teachers agreed that online learning is somehow beneficial during the coronavirus pandemic, but they showed a few concerns about ensuring its effectiveness. The results of this second question clearly state that the class size does not affect students' results during e-learning. The online class allows tens of students to attend one class from different parts of the country without worrying about having enough space for all students in the physical classroom. The findings confirm that the current teaching position among respondents affects their attitudes.

The results of the questionnaire found clear support for the argument that there are critical challenges of teaching during the coronavirus. The analysis found that students' lack of computers was the main problem. Not all families get enough income to offer their children a new desktop or smartphone. Since Palestine is a developing country, teachers and students complained about the poor network and slow internet. As a result, they faced tremendous problems during their online classes. Planned comparisons revealed that students are not yet open to shifting from the traditional teaching style to online learning. Their minds are still stuck in the grammar-translation method. The grammar-translation method is based on traditional teaching methods, focusing on teachers talking time. The result casts a new light on the massive lack of proper training for students and teachers. They both were not yet prepared for this sudden shift; therefore, the efficiency of online learning was not satisfactory. The experimental results showed that students' attendance in online classes was low. Not all students were committed to being online on time. Some students were playing outside, leaving phones logged in to the class while not listening to what was happening in their class. This is important to interpret the results correctly. Students' motivation was low at home since they lost the classroom-affect learning environment. It is worth discussing these exciting facts revealed by the results of some apps used in online learning. These apps need more planning and development. The options that teachers had were limited.

Similarly, some teachers complained about ongoing technical problems during online teaching. They still believe that technology is the key to developing the educational process, but teachers were not well prepared for a sudden shift. They think that online learning is appropriate for flipped learning since this gives the chance to utilise the class time in the best way for communication, i. e. learning a language, not only about language. These sides are essential findings in understanding the actual situation of online learning.

6.7 Implementation of the Study

Good command of the computer is required to be a well-performing teacher. The paper also suggests a soft copy of the required curriculum. The soft copy has to be available on the computer, and interactive software is needed to enable teachers to comment and add to the book pages. Moreover, particular websites, platforms or software are also required to let students interact with teachers so they can submit homework, answer questions and participate. Additionally, each class must have a computer connected to the internet to use it directly. This paper also assumes that there is an urgent need for the Ministry to increase the number of online learning developers to create a rich platform and clear guidelines for teachers regarding online learning.

Furthermore, international organisations working in Palestine are encouraged to offer intensive training for teachers to enrich their skills in online learning. The careful selection and preparation of the teaching materials and apps are crucial. Future studies could further explore this issue by offering the Ministry of Education guidelines on how to enforce school infrastructure to ensure the success of online learning. Interesting questions for future research that can be derived from the proper usage of technology by students and teachers. Other studies can conduct this kind of study again by interviewing more teachers to obtain more perspectives. Some researchers may integrate technology with educational drama to introduce receptive and productive skills.

6.8 Limitations

This kind of study usually has several limitations. This study may be considered a snapshot of the effectiveness of online EFL learning in Palestine. However, when comparing these results with older studies' findings, it must be pointed out that this paper studied both the effectiveness and the dark sides of e-learning during the pandemic. The results of this paper are a baseline and reference to further studies and policymakers. They may help develop online education in Palestine.

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Chapter 7
"Why Do We Learn?" Children's Perceptions and Future Insights

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Abstract This study explores students' awareness of their learning in light of educators' growing interest in "The learner's voice". This is a collaborative semi-structured research paper conducted by Ph.D. students enrolled in An-Najah University's "Contemporary Issues & Trends in Teaching & Learning" course. This interest stems from

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educators' efforts to have a better understanding of students' perceptions and attitudes regarding their education to assist students, instructors, and parents in receiving a better education. This research relies on semi-structured interviews with 875 K-12 students (of both genders). The sample was taken randomly from many private and public schools in different locations in Palestine (North occupied territories, Jerusalem, and the West Bank). Students were mainly asked the question "why do you learn?" to understand their perception of learning goal. The findings show that the learning goals of students can be divided into two categories. First, internal motivations and goals that symbolize inner self-fulfilment, such as "growing up" and "reaching future desires," must be achieved. External causes, on the other hand, are usually social, financial, cultural, and other justifications that are considered as more opposing commitments in the second pillar. Results indicate that awareness of the goal of learning and education becomes more lucid gradually as the grade level rises. All age groups, however, agree on linking "learning skills of something" with education and projecting their education to their future aims and desires.

Keywords Students' perception · Intrinsic motivation · Extrinsic motivation · Learning goals

7.1 Introduction

As learning theories developed and expanded rapidly in the late twentieth century, much attention has been paid to students' roles and involvement in the learning process. This led to the recognition of the importance of understanding pupils' perceptions (Hofman et al., 2001; Wittrock, 1980). Whilst it is impossible to match pupils' perceptions to those of teachers', thus a consistent difference between the two perceptions exists (Könings et al., 2014). However, since our main concern as educators is to enhance the teaching–learning process, then this leads to the necessity for investigating pupils' perceptions about their learning and an urgent hearkening to their voices. Understanding pupils' perception would explain their cognitive outcomes as it will lead teachers to correlate their pupils' attitudes, pupils' perceptions, achievements, and teachers' own instructional methods (Hofman et al., 2001; Fraser, 1986). It is self-evident from a variety of research findings that listening to learners' voices has many benefits such as increasing pupils' engagement, strengthening the pupils-teacher relationship, and furnishing a healthier learning milieu

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(Ruddick & Demetriou, 2003). In addition, a practical example at the West Park Primary School, allowing pupils to share their voice 'strongly' to the point of involvement in decision-making, has led to leverage most pupils to keen to take part in 'pupil voice' groups and contribute to school life (West Park Primary School, 2020).

What this study adds to previous studies, in addition to being a first of its kind for Palestinian pupils, is that it surfs a wide range of regions in Palestinian areas (West Bank, Jerusalem, and Northern parts of Palestine), covering all levels of schooling (K-12) from different school structures (Public Schools under Palestinian Authority, Private Schools, Public Schools under Israeli Authority and UNRWA schools) of both genders. Researchers believe that looking closely at students' perception of learning, taken from a large sample out of a diverse area makes the observant variables better understood.

7.1.1 Research Questions

How do Palestinian pupils in K-12 schooling perceive the purpose of their learning?

7.2 Literature Review

In his paper (Valeriu, 2015) emphasizes the fact that pupils' success or lack of success is due to their attitude towards learning. These attitudes, according to his findings, are consequences of the school's role and contribution as one of the primordial factors. Moreover, he sustains the value of the professor to direct pupils' interest in a certain discipline that he/she teaches them. He hypothesizes seven trends that lead to an increase in motivation to learn. These trends consist of the existence of the human model, the family attitudes, the awareness of the personal needs and objectives of learning, the involvement in extracurricular activities, the didactical style, the organizational culture of the school, and the involvement of the parents. Viewing the attitude by its manifestation by observing that the attitude towards education as a portion of the pupils' personality shaped their moral side. However, when they get older, at a pre-adolescence and in adolescence, their attitude is furnished with consistency and durability resulting from the combination of emotions with cognitive-intellectual elements. Thus, attitude (towards an object) is linked with other psychological variables such as needs, interests, feelings, beliefs (intrinsic motives), and the manifestation of attitudes depends on the compatibility among those internal variables and the value of that object which has a variety of perspectives of intellectual, moral, aesthetic, economic and pragmatic. Therefore, according to the researcher, the attitudes–relationship makes two reversible sides of the same process in which each represents the other. In adolescence, pupils' attitude towards learning is initiated by the teacher creating a positive attitude towards a certain subject (and to be considered as a future profession). Implying a strong indicator of pupils' awareness of the

relationship between education and their future profession (which is not straightforward). Finally, reaching the conclusion that motivation is positively affected by the factors mentioned in the research hypothesis.

Another study by (Widdowson et al., 2015) investigates students', parents', and teachers' beliefs about the reasons behind going to school within the socio-economic status of participants. Researchers find two main themes: the learning purpose of schools and personal reasons for going to school. Researchers' analysis reveals that the three groups share common beliefs in the learning purpose of schooling, among which students' beliefs had the broadest views on school purposes. These purposes fit in four categories: to learn and develop self-knowledge, to develop life skills and social skills, to optimize life chances and quality of life, and to enable future employment and economic wellbeing. On the other hand, results concerning personal reasons (from students' perspectives, and beyond legal requirements); researchers categorize personal reasons for middle and high decile school students in four categories: to acquire learning, develop life and social skills, optimize life chances, enable future employment and economic wellbeing. Low decile school students show all but life/social skills as personal reasons, whilst personal fulfillment and enjoyment are featured among the reasons for high and low decile school students.

A similar study was carried out in Istanbul–Turkey exploring pupils' perceptions of learning and its importance to them (Sahin Taskin, 2012). Researchers carried out a qualitative study by interviewing 55 primary school pupils (grades 4 and 5) from 3 private and 30 public schools. Their findings reveal two main outcomes; the first, low-socioeconomic background pupils state that learning is a reason for employability. The second is that many pupils associated learning with memorization and listening (an indication of their perception of learning as being a passive transmission). Zooming in on the findings of the research, it is noted that the majority of pupils conceive learning as the acquisition of life skills and knowledge to be used in the future while some linked learning to skills and knowledge to be used for examinations and in getting a job in the future.

Setting goals for learning is a significant step to accomplish satisfying learning. In his study, Dishon-Berkovits (2014) contends for the effect of the learners' awareness of the purpose of their learning on accomplishing these objectives. He refers to the need to raise students' knowledge of their learning goals since it has been a gap in the educational system. Dishon-Berkovits explains that awareness-raising for students in this field would enhance their engagement and appreciation of the educational content and goals. Another study by Lončarić and Peklaj (2008) also stressed the importance of students' awareness of their learning goals. They argue that students' self-awareness and regulation of the learning would be reflected in their achievement would increase intrinsic motivation and, in turn, intention to acquire skills and practices.

Goals that people set are normally driven by two types of motivations: intrinsic and extrinsic (Kasser & Ryan, 1996). Kassar and Ryan highlight that motivation and setting goals enhance students' engagement and promote self-regulation, which in turn, allows students to develop self-belief and enhance their achievement. Vansteenkiste et al. (2004) explained both intrinsic and extrinsic motivation. They

described intrinsic goals as those that tackle money, fame, and community. As for the intrinsic goals, they relate them to inner interest in future goals, wellbeing, and personal development.

Other trends that have recently become interested in studying the connection between the learners' self-view and future goals. Mclnerney and Van Etten (2004) has stated that learners' future views and ambition goals influence effect instant motivation and as a result academic achievement especially for high school students and university students. Research in this area extended to various theoretical aspects and introduced new concepts such as "utility value", "future-oriented extrinsic goals" and others (Miller et al., 1996). Studies referred to future goals of students as those that reflect their future goals to enhance their employment, economic status, and success. Older research by Nuttin and Lens (1985) focused on the effect of future perspectives and ambition of learners on their goals set. It linked the tendency of students and their strive to achieve goals with their ambition and plans for both the near and distant future.

In addition to future ambition, studies have expanded to examine the relationship between social goals and learners' motivation. Learning environments are considered social places where learners usually build their social interaction skills (Urdan & Maehr, 1995). Spera and Wentzel (2003) have discussed that social goals, which students set when they grow older, aim to match their need to share and collaborate, their skills to comply and regulate the requirements and social expectations. They also classified students' social goals into a range of purposes: "prosocial goals", "approval attaining goals", "welfare goals", and "relationship goals". Each type of goal serves a social need that learners aim at achieving from their learning.

Another study by Hofmann (2008) focuses on students' willingness to learn for the sake of learning. The researcher stresses the importance of the goal to cope with the changeable circumstances of life. He refers to the basic needs of learning that are represented in literacy, numeracy, and other basic technical skills that are considered vital to allow for future learning. Such skills are usually acquired at the beginning of the learning cycle in the primary stages. Hofmann stated that individuals would not be able to advance in/her learning without achieving the minimum skills that are identified as "learning for learning" sake.

7.3 Research Methodology

With the growing interest in the "learners' voice", this study aims at exploring the students' awareness of the goals of their learning in the three stages of education.

7.3.1 Research Design

The researchers used the "qualitative approach", within the framework of a multiple case study (Yin, 2003); in order to explore the awareness of students in the three Educational Stages.

This method was chosen to allow researchers to expand the sample to search for the different or similar opinions of students from different school environments in the three educational stages. The first stage is from the first to the sixth grade, the second stage is from the seventh to the ninth grade and the third one is from the tenth to the twelfth grade. Meanwhile, this approach allows the respondents to list their opinions about the reasons that make them learn (Vannoni, 2014).

7.3.2 Participants

The study sample consisted of students studying in the first to twelfth grades of 21 Palestinian schools in different geographical areas (6 schools from the first stage, 8 schools from the second stage, and 8 schools from the third stage). In the scholastic year 2021/2022, 875 students (290 first stage, 366 s stage, 219 third stage).

7.3.3 Instrument and Interview Question

Data were collected through semi-structured interviews. In light of framing an open-ended question to allow participants to elaborate and expound their beliefs about their learning and to express their awareness, the interviews consist of only one question: "**Why do you learn?**". The question was addressed to students of the three educational stages. Thus exploring the awareness of students in the three educational stages through reasons that motivate them to learn in light of teachers' growing interest in (the students' voice).

7.3.4 Data Analysis

Qualitative analysis of data collection from interviews based on an objective analysis according to (Barun & Clarke, 2006), in order to answer the interview's question: "Why do you learn?", according to the following steps:

1. Inductive analysis was used on the collected data based on the ground theory. Using "Excel" for data coding and analysis (descriptive analysis).
2. Familiarization: repeated reading of the data: Data analyzed by reading the interviews several times in order to get information and ideas that are included. Then,

a list of comments is developed. More rereading to reclassify the responses into groups and summarize those classifications.
3. Generating initial codes: Data coded (words/phrases/sentences) by writing a word or phrase that indicates it; in order to answer the research questions (vertical reading).
4. Searching for themes: Similar answers categorized into appropriate groups.
5. Reviewing themes: the categories and their relevance to the interview axes (by finding logical connections between the symbols) examined and related to the three axes: The first pillar: future goals, developing personal characteristics, learning for the sake of learning, acquiring life and social skills. The second pillar: economic reasons, social reasons (for parents and society), religious reasons, compulsory education, changing society. Finally, the third pillar: unexpected answers.
6. Defining and naming themes.
7. Quantifying the themes: Since counting merges objects as with their representations, such that objects are brought into existence and can, thus, be discussed as discrete entities (Martin, 2004). Therefore, themes are counted by their frequency of occurrence in order to observe and compare the weight of every themes' impact.
8. Producing the report: writing results according to the determined axes.

7.3.5 Validity of Interviews

In order to ensure the reliability of the data, it has been triangulated (Validity, Dependability, Trustworthiness), and checked by researchers. They also discussed the way in which results were viewed that made sense with experts from the field. This cross-checking of interpretations helped to ensure that the different axes of the subject matter were checked for accuracy, that the results were trustworthy and ultimately led to the formation of a set of related categories (Marshall & Rossman, 2012).

7.3.6 Inner Validity

Causal and logical relationships were found between the notations in order to find the categories that combine them, so that internal validity was used in the case study to find an explanation for the students' understanding of the reasons that motivate them to learn.

7.3.7 Interview Stability

In order to verify the stability of both types of interviews, two experimental interviews were chosen, transcribed, and presented to the interviewed respondents, and their consent was obtained on the text of the written interview. Pseudonyms were used for the participants.

7.4 Results Analysis and Discussion

7.4.1 Results

Results are analysed by the grounded theory using Excel for coding and analysis. Texts were repeatedly read to increase their familiarity with researchers. In addition, data are combined, revised, coded, and analyzed through thematic analysis to allow for the introduction of different themes.

The analytical data and coding stage showed differences in the students' points of view concerning the aim of learning. Results are affected by personal experiences, satisfaction, and environment. While analysing the results, the aims of learning (from students' perspective) can be divided into two main pillars. The first being intrinsic motivations (future aims, personal characteristics' development, learning for education, living, and social skills acquisition). While the second pillar is extrinsic motivations (social, economic, religious reasons, learning obligation, and changing reality). Main results with some examples are presented here:

7.4.2 The First Pillar (Intrinsic Motivation)

In this section, researchers address the views of students at different educational stages about learning goals that can be attributed to internal motives such as future goals, developing personality traits, learning for learning, and acquiring life and social skills.

Table 7.1 shows the total percentage of learning reasons emanating from the internal motives of the students participating in the research constitutes approximately three-quarters of the total percentage of all reasons (75%). By comparing the different internal motives, we see that in all educational stages there is agreement on the importance of future causes (30%), the students addressed, in their answers in this pillar, three sub-themes: achieving the goal, the future profession, and ensuring the future. Thus, the future goals obtained the highest percentage among the students' answers, with a difference in the results in favor of the third stage among the age groups, which reached 38%, and so, it seems clear that the older the students, the more they look forward to the future and their future goals related to completing

Table 7.1 Frequency and percentage for learning goals related to the intrinsic motivations

Total (all stages)		Third stage		Secondary stage		First stage		Theme
% of FRQ	FRQ	% of FRQ	FRQ	% of FRQ	FRQ	% of FRQ	FRQ	
30	512	38	191	29.6	235	21.8	86	Future goals
17	281	15.1	76	16.5	131	18.7	74	Learning for learning
16	266	11.9	60	17.5	139	17	67	Develop personal characters
12	210	14.9	75	12.2	97	9.6	38	Acquiring social and life skills
75	1269	79.9	402	75.9	602	67.1	265	Total

their education, and get jobs. For example, the students' answers in the first stage had short-term future aspirations at the school level. One of the students said: "*I want to be superior*" Another said: "*So that I learn and study*," and a female student mentioned: "*To succeed*." The students' answers in the second and third stages have risen to the level of future goals after school, which were often centered on the future profession and ensuring the future, one of the female students in the second age group said: "*So that I can grow up and become a teacher*". Another said, "*I want to be a doctor*".

There is a similarity in the answers between the second stage and the third stage, which often focused on the issue of future goals for work and future profession. One of the students expressed the reason for learning: "*so that we achieve our goals and ambitions in the future and be able to obtain a respectable profession*". Observing the reasons for learning being 'for learning' of 16%. We notice from the table a small difference in the ratios between the three age stages in favor of the first age stage, which in turn reflects the desire of primary school students to learn in order to acquire knowledge. One of the third-grade students said: "*I learn because I love to learn*". The students of the first stage also focused on the necessity of learning to acquire basic skills such as reading and writing, as a third-grade student said: "*By learning, learn to read*". Preparatory and secondary students considered learning as an important way to acquire knowledge and improve their culture, as indicated by one of the seventh-grade students: "*I am learning to increase (improve) my culture more*". In addition, one of the ninth-grade students mentioned that: "*I am learning because I love education and because I love school…*".

According to the development of personal traits, 16%, as the results showed that this theme takes the third place as the table shows in the results, with a difference of no more than 1% compared with the theme of learning for learning, and the percentages is close between the different academic levels with a small difference in favor of the first stage. The answers of the first stage students were short and focused on the trait of knowledge, excellence, self-confidence, and awareness of life matters,

and on imitating some close people whom the students see as role models and have developed personal traits. Most of the answers were as a student said: "*So that to be smart and be like my dad*". Another student replied: "*To be excellent and to be like my brother, and to know how to do everything*". While another student in the second stage answered: "*I want to learn in order to develop my life and achieve my ambition*". Therefore, many students' answers at this stage are repetitive, especially in the axis of learning to develop the personal traits of students and close to the answers of students in the first stage. As for the third stage, it is noticed from the results that the students are more conscious and more aware of what is going on around them, and from this aspect, the students' answers had the least repetition. The students' answers and statements also centered on self-esteem, self-development, and efficiency. One of the students said: "*I want to learn how to have confidence in myself, be free, face society with my knowledge, and be strong in society*". Another student from another school in the eleventh grade said: "*I would like to learn because in the future I will have competence and experience in everything and to become an important figure in society*".

To acquire life and social skills, students participating in this theme talked about four categories: social engagement and communication, understanding life and protection from its challenges, helping others, and keeping pace with modernization. The results of the table showed a slight discrepancy in the percentages and frequency in the three educational stages: In the first stage 9.6%, in the second 12.2%, and the third 14.9%. Many students in the first stage have stated that the reason for their learning is their love to help others. One of the students at this stage said: "*To teach the children everything I have learned*". Another student mentioned her intention to help others in various aspects of life: "*And in order to help others*". Another student from the second stage stated that the learning came to give her skills of communication and social interaction with others: "*that we can communicate with others*". One student from the same stage stated that learning came to continue living and deal with life issues in the best possible way, and to have an impact on others: "*To continue living in this life, and deal with life in the best possible way, and to set an example for a new generation with knowledge and education*". A student at the same stage believes that her learning stems from an understanding of life and that she has an impact on society, and that she seeks for development: "To *understand life more and to know more and become someone important in society and so that we won't be ignorant and to develop our society"*. Whereas another student believes that students should keep pace with the development of modern life and adapt with all the advantages and disadvantages in their learning: "*Learning let us know how to deal with life and problems*". Others believe that correct learning is what the student can do to better engage in social reality, achieve the desired effect, and learn about different cultures: "*We deal with the outside world after school, learn new cultures, and develop ourselves in our lives*".

7.4.3 The Second Pillar (Extrinsic Motivations)

In this chapter, the researchers address students' different stages perspectives of learning objectives that might be caused by extrinsic motivations (social, economic, religious reasons, learning obligations, and changing reality).

Table 7.2 shows that the overall percentage of learning objectives that arise from the extrinsic motivations for learners is about a quarter compared with other extrinsic motivations (23%). Moreover, comparing the different intrinsic sub-themes across the stages, it is noted that there is an agreement on the importance of economic factors (9%) with no significant differences among stages. Students view education as a tool to improve the economic situation and ensure a good future without any financial problems, poverty…etc. A student commented by stating that: "*To guarantee my future financially, education is the most important*".

Another aspect that is considered as extrinsic motivation is the impact of social reasons (6%) on students' attitudes towards the objectives of Education; we notice that there is a reduction in the percentage moving to a higher stage. Since the first stage has the highest percentage of (7.1%). The focus of this component is on the family since it is considered the main factor affecting students' willingness to learn. A student said: "*I want to make my family satisfied and proud of me*" which shows that students are affected by their parents' opinions and desires, either as a kind of upbringing or to being obedient to family.

With a slight difference, comes the second stage (6.7%) and then the third stage with a percentage of (4.8%). These two generations' answers indicated the students' influence on society's culture that led to their feeling of being different and shy compared to others. A student in the eighth grade expressed his interest in completing his education for fear of being ashamed of society's view of him. He said: "*If someone is not educated he/she remains rejected because education is an essential thing in the country because if you don't learn, you have no value*". Obviously, for females, they say that they want to get educated to change the society's view towards them

Table 7.2 Frequency and percentage for learning goals related to extrinsic motivations

Total (all stages)		Third stage		Secondary stage		First stage		Theme
% of FRQ	FRQ	% of FRQ	FRQ	% of FRQ	FRQ	% of FRQ	FRQ	
9	153	8,9	45	9.1	72	9.1	36	Economic reasons
6	105	4.8	24	6.7	53	7.1	28	Social society and family
3	57	4.4	22	3	24	2.8	11	Religious
2	35	0.6	3	1.9	15	4.3	17	Obligatory education
2	38	0.6	3	2.1	17	4.6	36	Changing reality
23	388	19.3	97	22.8	181	27.8	110	

since most of the society's view of females is narrowed to cooking, cleaning, and washing. One girl added: "*I am learning to change society's view of us that we only cook and wash as women, but maybe I want to learn, and I want to make a change so that they are convinced and change the way they look at us*".

As for the third stage, students were mostly concerned with the impact of education on their social life, as one of them said: "*I study to support and guarantee my life in the future, mainly when I want to marry for example*".

While the religious impact, it is noticeable that it does have a high effect on students' perception of about (3%), but the more we go higher in the education stage, it moves on to be a bit more influential. Students quoted the Holy Quran as a must-learning factor, as one student said: "*I study because Allah and the Prophet Mohammad encourage learning; therefore, I want to learn and become an engineer, and achieve my goals in life*".

The least two reasons affecting the extrinsic motivations are educational obligation and changing reality with a percentage of (2%) which decreases significantly with the progression of the educational stage in both of them. As for Educational Obligation, students think that they are obligated to do so by parents in compliance with the laws of the country until the age of 18 years. This view was confirmed by one of the students who said: "*It is a must for me to do this". While* another said: "*I study because I am forced to do so because mom sends us to school".*

Concerning "changing reality", which includes life difficulties, it is noticed that there are motivations for students to study to face life, stand against life problems and difficulties, and learn how to live. This was demonstrated by several students, one said: "*I study, to confront this life and its suffering, and change the current situation, to avoid negative acts and the bad habits like thefts and violence*".

7.4.4 The Third Pillar (Unexpected Answers)

The researchers discuss the students' perception at different educational stages about learning objectives, but in this section, the students' answers were unexpected.

Table 7.3 shows that the total percentage of unexpected learning reasons for students participating in the research is the lowest among the other previous reasons (2%). We see that the first age stage has the highest repetition with a percentage of (5.1%), while on the average, the repetition decreases to a rate of (1.3%), and it decreases more in the third stage with a rate of (0.8%).

Table 7.3 Frequency and percentage for learning goals related to unexpected answers

Total (all stages)		Third stage		Secondary stage		First stage		Theme
% of FRQ	FRQ	% of FRQ	FRQ	% of FRQ	FRQ	% of FRQ	FRQ	
2	34	0.8	4	1.3	10	5.1	20	Unexpected answers

7.5 Discussion and Conclusion

7.5.1 Intrinsic Motivation

The results indicate that students' interest in achieving their future goals increases as they grow in age and progress through educational levels. This interest increases in order to obtain suitable professions that would insure a shining future with good social status. This is consistent with a study conducted by (Valeriu, 2015) where the results showed that pupils' at the adolescence attitude toward learning is initiated by creating a positive attitude toward a certain subject which considered a future profession, and this implies a strong indicator of pupils' awareness about the relationship between education and their future profession, and this agrees with previous studies (Mclnerney & Van Etten, 2004).

It is also noticed that the percentage of students' interest in learning for the sake of learning varies among the three stages. As the age group increases, the percentage decreases. This reversed flow could be interpreted as students' interest during their early years is focused on acquiring and learning basic skills of reading, writing, and arithmetic. These skills form the nucleus for the launch of their future academic life afterwards. These skills, which are the minimum skills that are identified as "learning for learning sake", are usually acquired at the beginning of the learning cycle in primary schooling because advancement in individuals' learning will not be accomplished without achieving these skills (Hofmann, 2008).

The results have also shown that the interest of students to learning in order to acquisition of life and social skills increases with age and along with educational stages development. This indicates the existence of a varying quality of the categories that the participants see as reflecting the reasons behind their learning, such as social involvement, understanding life, helping others, and keeping pace with time. In contrast, the first stage was limited to provide reasons from the concrete reality of their daily lives, providing assistance, and learning basic skills such as reading, writing, that help them integrate into and interact with society. This result is in agreement with (Tasken, 2012) whose findings indicate that the majority of pupils conceive learning as acquisition of life skills and knowledge to be used in the future (Sahin Taskin, 2012).

As for the learning in order to develop personality traits, it was apparent that the pupils' answers were different, and the percentages of those similar answers were not similar among the three stages. While focusing on some personality traits such

as self-esteem, confidence, self-development, efficiency, awareness, knowledge and perception, these traits have a high percentage of appearance among students in the early learning ages compared to higher classes (McCrae et al., 2002).

7.5.2 Extrinsic Motivations

According to our findings, economic reasons have the greatest impact on students' attitudes compared to other external motivations (social, religious, compulsory education and changing reality), indicating that life requirements require essentials as a basis for building a comfortable lifestyle that can give more positivity than any other area (Sahin Taskin, 2012). At all levels of education, there was a compatibility between the proportions that considered this area as a major reason for learning, which demonstrates students' preoccupation with looking for tools to ensure their future, and which is centered at their belief that learning gives them a preference in finding a job with a good income that guarantees a better social standing compared to that of the uneducated. This, in turn, leads us to the next goal in importance for students, which is the social reasons as a motive for education. Social reasons' percentage decreases with the progression of the educational stage. In this respect, we have seen a splitting of views between the first and the other two phases, where the first graders' orientation as a high-impact social worker motivated them to learn. In the second and third phases, students' answers show that they are looking for their value as learners through their community perception. This may be directly related to the culture of society (where a society that sacred learners, creates a generation that believes in the importance of its education) and it is related to the age-nature, where students at this age begin to become independent as well as to form their personal identity that does not stain from society (Spera & Wentzel, 2003).

Comparing internal and external goals' motives, we see that internal motives play the biggest role in motivating students to learn, since it is three times more than internal ones. This indicates that students' motivation towards learning is inspired by internal motives, which may be formed mainly by the existence of values generated from external motives (Lončarić & Peklaj, 2008).

7.5.3 Unexpected Answers

The results show that students in the first stage do not have sufficient awareness of the goal of learning, while their awareness increases as they are in an advanced stage and define their learning goal more clearly. These results are consistent with (Midgley et al., 1995) study in which they have shown that sixth and seventh graders in middle schools adopted personal achievement goals more than fourth and fifth graders in primary schools (Midgley et al., 1995).

7.5.4 Recommendations for Further Research

In order to achieve a quality education, we should listen more closely to pupils' voice. As our findings have shown some differences in certain themes among the three schooling levels, this urges further investigations to be conducted taking into considerations each level separately. Moreover, since our findings have shown that intrinsic motivations are about three times more than external motivations are. This suggests that further research ought to consider methods of how to stimulate these motivations at early schooling years. Finally, we see that it is worth studying parents' views of their children's purpose for learning in parallel to that of their children's perception.

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Chapter 8
Protecting the Virtual Classroom and Ensuring the Right to Quality Education as One of the Sustainable Development Goals

Noor Adas and Ghassan Khaled

Abstract This research examined and analysed the issue of protecting the virtual classroom by the provisions of the laws in force in Palestine, whether within the constitutional rules in the amended Palestinian Basic Law of 2003 or the penal rules by the provisions of the Penal Code or the decision by law on cybercrime or civil rules in the Journal of Judicial Provisions, because Protecting this class from being exposed to it by intrusive individuals prevents it from achieving its goal as it is a sophisticated educational method that gives the student skills, experience and knowledge, and thus the inability to reach the fourth sustainable development goal of ensuring the right to quality education. Thus, the research focused on clarifying the meaning of the virtual classroom, knowing the concept of the right of modern education as a goal of sustainable development, and linking all of this to clarifying the forms of criminalization of violations that occur in this classroom and impede its functioning, such as penetration and intrusion, infringement on educational materials or sending materials that violate values or reduce the dignity of the parties to the educational process, as well as the clarification of the criminal penalties prescribed for them in the applicable legislation, and the civil liability imposed on the perpetrators of these violations, to shed light on the importance of the legislative protection provided by the State of Palestine to achieve the required goal of ensuring the right to quality education.

Keywords The fourth goal of sustainable development · Quality education · Virtual classroom · Penal protection · Civil liability

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8.1 Introduction

This research focuses on demonstrating the adequacy of the legislative rules in Palestine to provide criminal and civil legal protection for virtual classrooms. In view of the behaviors that these classes may be exposed to that are forms of abuse and abuse of the same type, teacher and student, including electronic penetration and intrusion into the course by persons who do not have the authority to enter it or as well as belittling it and the parties of the educational process, which may threaten to offend the teacher or students Or even illegal control of the class, leading to the possibility of publishing materials bearing a kind of ridicule or sarcasm or any other material that violates values and morals, which impedes the performance and goal of the virtual class, and thus this matter negatively affects the right to access quality education for students, which is a goal of the sustainable development goals; The reason for this is that these classes are a significant pillar in the E-learning process, as well as an alternative or a supportive means for face-to-face learning, so that sometimes they may be the only available means of knowledge, and this is what happened with the start of the Corona pandemic, in which face-to-face classes were closed and education in school and university was transformed. To virtual classes over the Internet. But if that legal protection is available, the legislator will help achieve deterrence when everyone who is tempted to attack the virtual classrooms and threaten their security and the security of the teacher and the learner, which contributes to spreading security and stability to all corners of the educational process and thus achieving its goal. Although educational institutions use technical means to prevent these attacks, legal texts remain an essential means of protection.

In their research, the research team seeks to answer the following central question: Did the Palestinian legislature provide adequate legal protection for the virtual classroom to ensure access to quality and use education as the fourth goal of the sustainable development goals?

This research aims to: clarify the concept of the virtual classroom, clarify the idea of the right to quality education and its basis, and clarify the penal protection for the virtual classroom, the crimes that may occur in it and the penalties prescribed for it, as well as the civil liability that may arise from the damages resulting from these acts, by the legislation in force in Palestine.

Methodology:

The researchers mainly followed the descriptive and analytical approach of the relevant legal texts in the legislation in force in Palestine: such as the amended Palestinian Basic Law of 2003, Penal law No. 16 of 1960, Decree-Law on Cybercrime No. 10 of 2018, and the Code of Judicial Judgments with guidance from some other legislation, in light of the relevant jurisprudential references and literature.

8.2 Conceptual Framework for Research

To achieve an accurate and correct understanding of the research topic, it was necessary to clarify the following concepts:

8.2.1 Virtual Classroom

A virtual classroom means: an electronic environment that enables students and lecturers to interact with each other as if they were in a traditional face-to-face class, using audio, image, and video, and to share content and applications (Parker & Martin, 2010).

The virtual class may be synchronous, and it means: that a virtual school brings together learners from different countries via the Internet and at the same time determined according to a specific schedule, and this school brings together learners around one particular academic interest to communicate and exchange lessons and topics between the teacher and the learner or between The learners themselves, and the other form corresponding to this class is the asynchronous class that gathers the learners at different times and depends mainly on teaching materials and media stored and sent to them at the time specified by the teacher (Khalifa, 2012).

The simultaneous virtual class forms the basis of this research, wherein this class, the teacher and student meet in an audio or video electronic lesson in which the teacher delivers the educational material and everything related to it and shares it before the students in their hearing and vision using the relevant devices such as cameras and others, this lecture includes a discussion by the parties to the educational process, and the teacher can present assignments, activities, and tests (Qasim Al-Obaidi), and from here appear cases of assault on this class by intruders and illegal entry into it, which leads to obstruction and disruption of its course.

This class appears when virtual education is used as an alternative to or in support of face-to-face or traditional education. Virtual education is defined as: "A form of distance education, through which technology and communication means, and media are used to deliver information to the learner and to communicate between the teacher and the learner at any time and any place, and it is one of the patterns of E-learning" (Sharaf, 2006).

The virtual classroom needs to perform its role better by making efforts to overcome the difficulties that arise during the use of virtual education, and among these efforts: is the need to provide the infrastructure and technological support necessary for this classroom, as well as the use of reliable systems, technologies, software and classroom management programs, and spreading awareness in the community about this type of education and its importance, and conducting advanced training courses for the parties to the educational process, including teachers and students, to provide them with the necessary experiences to use virtual education, Likewise, legislation and regulations must support this type of education (Qasim al-Obaidi).

This requires the State of Palestine to develop its structure and legislation and make efforts to serve the development of virtual education, which is considered a responsibility on it to improve the level of education in it. During the Corona pandemic and even before it, private and governmental educational institutions in Palestine played an essential role in adopting and developing virtual classes, despite the limited capabilities in some locations.

8.2.2 Sustainable Development Goals

It is a set of global goals unanimously agreed upon by the members of the General Assembly at the United Nations in 2015 in order to seek prosperity and development, the eradication of poverty and the existence of all countries in peace by 2030, is to achieve sustainable development. This group consists of seventeen goals: (Published on the United Nations Development Program in the Arab States website) As follows:

- The first goal: The Eradication of Poverty
- The second goal: The Complete Eradication of Hunger
- The third goal: Good Health and Well-Being
- The fourth goal: Quality Education
- The fifth goal: Gender Equality
- The sixth goal: Clean Water and Sanitation
- The seventh goal: Clean and Affordable Energy
- The eighth goal: Decent Work and Economic Growth
- The ninth goal: Industry, Innovation and Infrastructure
- The tenth goal: Reduce Inequality
- The eleventh goals: Sustainable Cities and Communities
- The twelfth goal: Responsible Consumption and Production
- The thirteenth goal: Climate Action
- The fourteenth goal: Underwater Life
- The fifteenth goal: Life on Land
- The sixteenth goal: peace, Justice and Strong Institutions
- The seventeenth goal: Partnerships to achieve the goals.

Sustainable development means: "It's a continuous, equitable, balanced and integrated development, which takes into account the environmental dimension in all its projects, and which does not reap the fruits for the current generations at the expense of future generations" (Abu Al-Nasr & Muhammad, 2017).

Therefore, development is the continuous comprehensive development of all areas of life and for an unlimited period. It is noted from the seventeen sustainable development goals issued by the United Nations General Assembly, the focus of this development until it reaches the achievement of sustainable development on a large number of areas, which may be separate or overlapping significantly, whether on the health, security, environmental, peace, equality or economic aspects freedom, natural

resources, or the prevention of poverty and crime, as well as an essential focus of this research, which is quality education.

8.2.3 The Right to a Good Education

The right to education is on leading the main human rights and one of the sustainable development goals, which is the fourth goal among them, which focuses based on ensuring access to education because it contributes mainly to sustainable development, and it is the responsibility of the United Nations Educational, Scientific and Cultural Organization—UNESCO—to support countries in developing A comprehensive framework for access to quality education, and states must guarantee this right to all citizens and set rules for this, in compliance with their legal and political duty (published on the website of the United Nations Educational, Scientific and Cultural Organization UNESCO).

This right includes the right of all individuals to ensure that they complete their primary and secondary education free of charge, equitably and in good quality, and that all have opportunities for development and quality care to qualify them for education at every stage and that there are good and equal opportunities for men and women to enroll in vocational and higher education at appropriate fees, without disparity. Providing a safe and secure learning environment to be effective (Organization UNESCO, 2020). Providing individuals with appropriate skills to find suitable job opportunities or to be able to engage in self-employment, and ensuring opportunities for vulnerable groups, including people with disabilities, people and children living in vulnerable situations, achieving literacy and numeracy for all youth and many older persons, (Incheon Declaration and Framework for Action to Achieve the Fourth Sustainable Development Goal, 2016).

Quality education also requires strengthening educational inputs, developing evaluation and progress mechanisms, qualifying teachers and ensuring forms of support for them, developing skills and values for students to face challenges and assisting development, as well as harnessing technological means to build education systems (Incheon Declaration and Framework for Action to achieve the fourth goal of sustainable development goals, 2016).

Many human rights declarations and international agreements emphasized the importance of ensuring the right to quality education, including the Universal Declaration of Human Rights issued by the United Nations in 1948 or, for example, the Convention on the Rights of the Child issued by the United Nations in 1989, and others.

The amended Palestinian Basic Law of 2003, in its capacity as the Palestinian Constitution, affirmed the right to education in Article 24 when it stipulated: "1—Education is a right for every citizen, compulsory until the end of the primary stage at most minor and free in schools, institutes and public institutions. 3—The law guarantees the independence of universities, higher institutes and scientific research centers, and ensures the freedom of scientific research and literary, cultural and artistic

creativity, and the National Authority works to encourage and support them 4—Schools and private educational institutions are committed to the curricula that they provide. It is approved by the National Authority and is subject to its supervision."

The previous article considers the constitutional basis for the right to education for all citizens in Palestine, and it is the responsibility of the state to provide opportunities to exercise this right, as well as the duty to supervise its provision to citizens in a manner that ensures access to the appropriate quality education stage.

Article (2) of Decree-Law No. (6) of 2018 on Higher Education states: "Higher education is a right for every individual when he fulfils enrollment conditions determined by the Ministry and the Institution in a manner that does not stand in the way of the exercise of the individual's right to higher education."

It can be said that access to quality education requires several requirements, including providing an appropriate educational environment for learning and acquiring different skills and knowledge, and this applies whether education is school or university, because this environment constitutes a link between the teacher and the student. The students with each other, which is what Through it, the interaction between them, discussion, supervision and information exchange takes place, and this environment must be safe. This environment must indeed be free of violence and any aggression that disturbs its peace. This applies to the case in which education is electronic and that environment is virtual across the world—The Internet. Attacking the virtual classroom, its security, it's functioning, the teacher, the student, or the presented material constitute obstacles to accessing quality education and achieving a school environment rich in knowledge and skills.

8.3 Penally Protects the Virtual Classroom:

In compliance with the international duties that fall on the responsibility of the State of Palestine and believing in the role of the state in achieving quality education for all its citizens, the legislation in force in Palestine works to protect educational environments, such as schools, universities and others. In addition, because E-learning has become a stage parallel to traditional education, it also has legal protection to fulfill the role entrusted to it, and one of the forms of this protection is the criminalization of attacks that occur on one of the methods of E-learning, which is the virtual classroom.

By examining the legislation in force in Palestine and the West Bank, in particular, we find that this penal protection takes several forms, including:

3.1 Criminalizing hacking the virtual classroom by a person who is not authorized to enter, or exceeding the limits that he was authorised to, as stipulated in Article (4/1) of Decree-Law No. (10) of 2018 regarding cybercrime, where stated in this article: Whoever intentionally, without right, by any means, enters a website, system, electronic network, or information technology means or part of it, or bypasses the authorized try, or continues to be there after being aware of this,

shall be punished by imprisonment or a fine of no less than two hundred Jordanian dinars, and no more than One thousand Jordanian dinars, or its equivalent in the legally circulated currency, or with both penalties. Penetration means: "unauthorised or illegal entry into information technology systems or the electronic network" (the text of Article 1 of the law as mentioned above decree). It is also defined as: “unauthorised access to any of the electronic systems, whether the system of an individual or a public or private institution, whether this access resulted in harm or did not result, whether intentionally or unintentionally” (Ahmed, 2020).

Accordingly, according to the Article 1, every person who enters in bad faith and without authorized persons—without the parties to the educational process—a virtual class organized through various websites or any electronic system or network shall be punished by imprisonment or a fine. The same punishment also includes those who were authorized to enter and exceed the limits of the permit granted to them. For example, the student who exceeded the boundaries of the authority given to him began to intrude into the class and try to influence it by controlling educational presentations.

This crime takes place regardless of the perpetrator’s goal as long as he has bad intentions, and he knows that it is not permissible for him to enter this class. Yet, he entered it, or he may have entered it by mistake, and when he became aware of the matter, he continued to enter it, which disturbed that classroom and violated privacy in it. This crime is considered a dangerous crime because the punishment is based on a mere risky behavior that constitutes an attack on the privacy of the virtual class without the legislator requiring a specific harmful result to occur.

The legislator stipulated an aggravating circumstance for punishment in this crime so that the penalty becomes imprisonment for a period of no less than one year, or a fine of no less than one thousand Jordanian dinars and not more than three thousand Jordanian dinars, or its equivalent in the legal currency, or both penalties in the event of an impact. This access to the data or information raised in this class, whether by cancelling, destroying, disclosing, changing, transferring, capturing, publishing, making copies of them, or harming the parties to the educational process (Article 4/3 of the same decree by law).

3.2 Criminalizing sending materials that violate values and morals by publishing them through the virtual classroom before of the educational process, which leads to an outrage of modesty in this classroom, which is the focus of education’ or sending to them, as this crime stipulates Article (16/1 and 2) from the decision by law on cybercrime, saying: “1. Whoever intentionally sends through the electronic network or information technology means everything audible, readable, or visual that includes pornographic acts for those over eighteen years of age without their consent, shall be punished with imprisonment for a period of no less than For three months and not more than two years, or a fine of no less than two hundred Jordanian dinars, and not more than one thousand Jordanian dinars, or its equivalent in the legal currency of circulation, or with

both penalties. 2. Whoever intentionally sends or publishes through the electronic network or information technology means everything audible, readable or visual that includes pornographic acts for persons under the age of eighteen or related to their sexual exploitation shall be punished by imprisonment for a period of no less than one year, or a fine of no less than one year. Less than one thousand Jordanian dinars, and not more than three thousand Jordanian dinars, its equivalent in the legally circulated currency, or both penalties."

3.3 Criminalizing disabling the start or progress of the virtual class, deleting or changing it through any means that hinder work in this class, such as a person inserting an electronic virus or an application that prevents access to the virtual course by the person authorized to do so, and this crime stipulates Article (6) of the Law by Decree on Cybercrime, stating: "Anyone who produces or introduces through the electronic network or information technology means what would stop it from working, disable it, destroy, delete or modify programs, shall be punished with imprisonment for a period not exceeding five years. And a fine of no less than three thousand Jordanian dinars and not more than five thousand Jordanian dinars, or it's equivalent in the legal currency of circulation".

3.4 Criminalizing the publication of materials containing racism towards individuals, If the offender publishes information or data containing manifestations of racism, whether on race, religion, disability, colour, or others, through the virtual classroom, he shall be punished by imprisonment for a period not exceeding one year, or a fine of no less than two hundred Jordanian dinars, and not more than a thousand Jordanian dinars. Or its equivalent in the legally circulated currency, or with both penalties (Article 24 of the Decree-Law on Cybercrime, states:

"Whoever creates a website, application, or electronic account, or publishes information on the electronic network or an information technology means, to display any written words or behaviours that would lead to inciting racial hatred." Religious, religious, or racial discrimination against a particular group because of its ethnic or sectarian affiliation, colour or shape, or because of disability shall be punished by imprisonment for a period not exceeding one year or a fine of no less than two hundred Jordanian dinars, and not more than a thousand Jordanian dinars, or its equivalent in the currency of circulation. legally, or with both penalties." And if the publication of materials that fall within the privacy of the parties to the educational process, such as publishing audio recordings, private photos, or personal news, he shall be punished by imprisonment for a period of no less than one year or a fine of no less than one thousand Jordanian dinars, and not more than three thousand Jordanian dinars. Or its equivalent in the legal currency of circulation, or with both penalties (Article 22 of the Decree-Law on Electronic Crimes).

3.5 Criminalization of slander and humiliation, which can be published through the virtual classroom, such as the offender insulting the teacher or the student or assigning them material that degrades their value and dignity, whether in writing, sign, drawing, etc., he shall be punished by Article (358) with imprisonment from two months to a year.

Defamation means: "It is the attribution of a certain substance to a person—even in the face of doubt and questioning—that would affect his honour and dignity or expose him to people's hatred and contempt, whether that article is a crime that requires punishment or not" (Article 188/1 of the Penal law).

As if the offender says that someone is a fraud. Likewise, whoever defames or degrades another person shall be punished according to Article (359) of imprisonment from one week to three months or a fine of five to twenty-five dinars. By slander means: "It is an attack on the dignity, honour, or consideration of others—even in the face of doubt and questioning—without specifying a specific article" (Article 188/2 of the Penal law) as if the offender says that a person is a criminal. As for humiliation: "It is any humiliation or cursing—other than slander—directed at the victim face to face with words, movements, writing, or drawings that were not made public, or by telegram or telephone communication, or by harsh treatment" (Article 190 of the Penal law). The offender was using harsh nicknames or making gestures or gestures that demeaned the teacher, the student, or the class itself.

3.6. Any party that has been subjected to such attacks—whether he is a teacher, student or educational institution—may resort to the competent authorities such as the Cybercrime Unit in the Palestinian Police or the Anti-Cybercrime Prosecution to follow up the case, search for the criminal and refer him to the judiciary to inflict appropriate punishment on him. These competent authorities may initiate the issue on their own, by the decision by law on cybercrime and the rule of Criminal Procedure No. (3) Of 2003.

In cooperation with the Police's Cybercrime Unit, the Anti-Cybercrime Prosecution follows up on cases related to cybercrime that come to its knowledge or file a complaint by individuals, entities, or their agents. These issues are prompt and confidential (The Public Prosecution website of the State of Palestine).

It is clear from the previous examples and forms that the legislator worked to protect the virtual classroom as an electronic system, as well as worked to protect the educational material that was raised and presented in this classroom, and provided protection for the parties to the educational process, all to ensure the smooth running of the virtual classroom and to prevent the possibility of disturbing its class and impede the learning opportunity for students and their acquisition of skills and knowledge.

8.4 Elements of Civil Liability When the Privacy of the Virtual Class System is Violated

Modern electronic communication devices represented a significant transformation in the lives of the world's population in all directions. The importance of this doubled when the possibility of connecting these devices to the Internet appeared, which caused the annihilation of work regulations that were followed for many years, and in turn the emergence of work systems that did not exist before. The result was in

general, tremendous developments have taken place in all aspects of life, economic, cultural, social, educational and others.

Naturally, that march was accompanied by obstacles, difficulties and challenges, including the violation of privacy in general and the breach of the confidentiality of the meeting or the virtual hall in particular.

Despite the almost innumerable positive effects of modern technology on all aspects of life, such as ease of communication, speeding up transactions, reducing costs, mitigating actions harmful to the environment, and many other positive effects of modern electronic commercetions, this does not change the fact that these the duplicate transactions from a second angle have some adverse effects on many aspects of life, including the private lives of individuals, as the negative impact of some practices in the field of electronic transactions may extend to include the infringement of human rights and fundamental freedoms, including the right to privacy and the right to Feeling safe in his work and his business, and keeping those works and business from the infringement of the aggressors, these rights are among the highest requests for any human being because they are closely related to the freedom of the person and his sense of security and safety, and perhaps this adaptation in particular is what made many international conventions talk about the necessity of preserving the human right to privacy For example, what was stated in the preamble to the Universal Declaration of Human Rights issued by the General Assembly of the United Nations on October 12, 1948, and nationally, the same reason B is the one who made the legislator single out a number of legislative texts for this topic, which criminalized the attack on privacy as was previously discussed in Decree Law No. (10) of (2018) regarding cybercrime, including Article 22 and Article (4) from him. And since the infringement of the sanctity of the virtual classroom is a form of infringing the right to privacy and the right to keep works and works protected from the breach of the aggressors and the intrusion of intruders, this offense, if it occurs, entails criminal and civil liability, and since this part of the research focuses on responsibility The civil consequences of that course, the research team sees, and because of the specificity of this study in terms of size, to go directly, and away from generalities, to the issue in question by addressing the pillars on which civil liability is based in the event of committing an act of infringement on the virtual class, which is the harmful act and damage Which results from the dangerous act and the causal link between the act committed and the harm that occurred.

8.4.1 Harmful Act in Liability Arising from Infringement of the Virtual Class by Violating Its Privacy

The harm is the harm that befalls a person in his money, body, honour or affection, and it may be material or moral. The material harm is the harm that inflicts the financial liability of the person. In contrast, moral harm is the harm that does not affect the person in one of his economic rights, but in his feelings and emotions

or his honour, dignity, reputation, or social position (Al-Hakim, 1977). Since the features of material damage are often apparent, the harm that afflicts a person when his privacy is violated—including the violation of the privacy and sanctity of the virtual classroom—is often moral damage, the research team saw the focus in this part on it.

At the outset, we point out regarding the legality of compensation for moral damage that the Jordanian Civil Law No. (43) Of 1976—the law of Judicial Provisions represents the historical source of this law—stipulated in Article (267) of it that: "1—The right to security deals with moral damage as well. Every infringement on others in their freedom, honour, reputation, social status, or financial consideration makes the aggressor responsible for the guarantee—2, and it is permissible to order the proof for spouses and those close to the family for the moral damage they suffer as a result of the death of the injured person.

The guarantee for moral damage shall not be transferred to third parties unless its value is determined by an agreement or a final judicial ruling." The explanatory note to the Jordanian Civil Law has been mentioned regarding rooting the idea of accepting financial compensation for moral damage based on the following arguments:

The jurisprudential rule states: "There is no harm or remorse." This is a general text that cannot be limited to material damage only because that is a specification without a specification. 2—The purpose of compensation is not only to replace money with money, but sometimes the meaning of it is sympathy if it is not similar. The most important applications of this rule are blood money and compensation. To proceed with their actions.

It is well established among civil law jurists that the pain caused by moral damage can result from an infringement of a non-financial right, such as rights attached to personality; Acts that constitute a violation of the right to honour, respect, private life, and professional considerations, such as libel, slander, cursing, defamation, and degrading a good reputation, cause moral damage that allows the injured party to claim compensation for it.

The same applies to the impersonation of the name, breach of private life, and illegal disclosure of secrets, and that the source of the pain may not be in prejudice to a specific right but in prejudice to the feelings of the injured, such as harming his honour, professional reputation, ideas or beliefs, or assaulting his feelings of tenderness (Yaqout, 1985).

As for the forms of moral damage, we refer to what was mentioned by Al-Sanhouri: "Moral damage does not affect a person in his money, but rather acts him in a non-financial interest, and that his conditions can be traced back to the following cases:

- Moral damage to the body, such as pain resulting from wounds and disfigurement that the harmful act leaves in the victim's body.
- Moral damage to honour, consideration honour, such as slander, insults, indecent assault, harm to reputation by sayings and outrages upon dignity.
- Moral damage to affection, feeling, tenderness and moral feeling (Abdel Razzaq Al-Sanhouri).

- The diversity of sources of moral damage prompted the jurists to distinguish between two types of this damage, namely:
- Moral damage related to material damage, for example, the deformation that befell the injured due to the accident that caused him injuries and fractures. Rarely, moral damage does not result in material damage as well. The wound, for example, causes pain to the victim, and this is the moral damage. But it also causes material harm to her, which is represented in treatment expenses and work disruption. Examples of moral damages associated with material damage include injuries that affect the so-called social part of the moral liability, such as an attack on honour and reputation.

Pure moral damage, for example, prejudice to feelings of tenderness and affection, religious feelings, and moral damage resulting from the death of a precious person (Saleh, 2006).

It is noted that the proof of moral damage is the responsibility of the person who claims that it has occurred. He has to prove it by all legitimate methods of evidence, considering it a material fact, and he must prove the error on the part of the debtor and that the damage he claims is caused by the debtor's mistake.

If the pillars of responsibility are available and proven, its ruling is followed, which is the right of the injured to compensation. Compensation represents the judicial means to redress the damage by erasing or mitigating it. It is not permissible to exceed the amount of the damage so that it does not turn into a punishment, and the compensation is either in kind or in cash. The original compensation in kind is intended to restore the situation to the way it was before the harmful act, and since the subject of experience is related to moral damage, compensation in kind accordingly is impossible. There is no other way than to follow the path of monetary compensation.

As for the amount of compensation for moral damage, the following is noted:

- Article (19) of the law of Judicial Judgments—as the legislation in force in the Palestinian territories as it represents the historical source of civil laws in the countries of Jordan, the United Arab Emirates, Iraq and Yemen—states that "there is no harm, no foul." and Article (20) of the same legislation, However, "the damage is removed." It is understood from the text of Articles (282) and (292) of the UAE Civil Transactions Law promulgated by Federal Law No. (5) of 1985, as well as from Article (266) of Jordanian Civil Law No. (43) Of the year 1976 the guarantee is assessed in all cases in proportion to the damage caused to the injured party and the loss of earnings, provided that this is a natural result of the harmful act.
- Judicial jurisprudence in most Arab countries has settled that the trial court may not assess compensation and determine its amount itself, given that this is within the jurisdiction of technical experts, without this ever implying compromising the judge's authority to weigh the evidence and for that he may not take the outcome of a determination experience. The jurisprudence considers that the judge, in taking it or not taking it with the expert report estimated for moral damage, must take into account that it is not permissible to take moral damage as a pretext for

enrichment at the expense of the perpetrator but rather the compensation must be sufficient to redress the harm, no more. Then the judge must take into account the specificity of each case. And that there is no fixed price for each type of moral damage because the specificity of each case differs from the other.

In moral harm resulting from bodily pain or injury from disfigurement, some jurisprudence has tried to set standards, including classifying the harm resulting from physical pain into several degrees according to hardship and the impact of each degree. For example, in aesthetic damages, consideration should be given when estimating the compensation necessary to redress the harm, the gender and age of the victim, as there is no doubt that the impact of aesthetic distortion is more severe on a woman than on a man, and that its severity on a young woman is more powerful than on an older woman, and therefore it is The nature of the moral damage must be taken into consideration, whether it is permanent, such as the aesthetic damage represented by disfiguring the victim's body, or is it temporary damage and will disappear by time automatically or through a specific treatment.

The jurisprudence has agreed that aesthetic damage is included in permanent moral damage. It results from material damage to the victim, such as someone who suffers permanent disfigurement in his body. Noting that there is a difference between a disability being visible and apparent to people, like someone who has a permanent wound on his face, which may mean to some that he may be a deviant, as this differs from the case in which the disability is hidden, such as if it does not appear to the public because it is within an area usually covered by clothing, where the amount of compensation inevitably differs in both cases. Its purpose in the first case is reparation for the moral damage to the person himself and the reparation of the harm that he is exposed to when dealing with people and the nature of their view of him.

The time spent and will be paid by the victim under distress, pain and confusion, as well as the type, nature and severity of the assault causing the damage, in addition to the magnitude of the adverse effects arising from it, are taken into consideration in the estimation of compensation for moral damage.

– The most common criterion in Palestine and the neighboring Arab countries is the criterion of fair compensation, which is undoubtedly less than the amount of total compensation, but in return, it exceeds the limits of symbolic settlement, so the matter is done by estimating reasonable and balanced payment sufficient to achieve the purpose of payment for moral damage, which is precisely Reducing the psychological trauma of the victim.

The correct view of the civil law jurists is that resorting to the above criterion achieves justice—despite its relativity—better than the method adopted by some countries by setting a ceiling on the amount of compensation for moral damage. Also, it certainly achieves more justice than the method in which the state sets ready tables for assessing moral damage, as this contradicts the idea of the privacy of every harm and the privacy of every harmed person.

Civil law jurists consider that it is a condition for moral damage that the victim deserves compensation to be accurate, and this does not mean that the damage is

necessarily pre; means ns actual, but it can be in the future, provided that it occurs personally.

If the damage is probable, it cannot be compensated. The damage that occurred is the damage whose cause and effects are all determined. While the future damage is harm whose cause is specified, all or some of its products have been delayed to the future. It is also required that the moral damage be personal, which means that the damage has been caused to the person claiming compensation for it. The apostasy damage is considered personal harm for the one who apostates on it. The moral damage is also required to be direct. Direct damage is the one that is a natural result of non-fulfillment of the obligation or delay in fulfilling it. The damage is considered a natural result if the creditor was not able to prevent it by making a reasonable effort, according to Article/222/of the Syrian Civil Law No. (84) of 1949 (Saleh, 2006).

If the above regarding the sanctity and immunity of the virtual class and the assault on it and the compensation due to the injured because of that infringement is dropped.

We will note without any doubt that the right to legal protection exists and that the conditions for entitlement to compensation due to the assault are available, for a person to enter a computer belonging to another without his permission or to hack an electronic communication system such as the virtual classroom without a legitimate ground and attack him by tampering with it and jamming it or otherwise Illegal acts inevitably cause severe damage to the owner of that device or that system, It should be noted here that the occurrence of moral injury is assumed in such a case. For the injured party, these acts of transgression will surely mean—even if the matter varies in terms of gravity according to the specifics of each case—a prejudice to his right to reputation and high honour, which includes his right not to be practiced or practiced against him. Things are broadcast or announced about him that would degrade his dignity, his reputation, or confidence in his professional abilities or lead to his hatred, contempt, or mockery by his students or by others (Yaqout, 1985). Accordingly, the injured person is inevitably entitled to fair and adequate compensation to redress the damage he has suffered, in proportion to the size, nature and impact of that damage, and so that the specifics of each case are taken into consideration based on the rules governing the determination of the amount of that compensation as detailed above.

8.4.2 Damage in Liability Arising from Violating the Privacy and Inviolability of the Virtual Class

When reviewing the legislative texts contained in the relevant Code of Judicial Provisions, in particular Article (19) which states: "There is, no harm, no foul." and Article (20,) which states: "The damage is removed," and Article (53) which says that: "If the original is invalid, the substitution will be made." Article (92) states: "The direct one is a guarantor, even if he did not intend to." Article (93), states says "The culprit shall not be liable except by intention," and Article (960), states that: "The interdicted who were mentioned in the previous articles, even if their verbal behaviour

is not considered, but they guarantee immediately the damage and loss that arose from their actions. For example, the guarantee is required of the boy if he destroys the money of others, even if he is not distinguished." And Article (912) states: "If someone intentionally or unintentionally destroys the property of another that is in his possession or in the hands of his trustee, he shall be guaranteed. And if the one who was destroyed will be included in it, and in this way, the destroyer has no recourse against the usurper." Article (917), states that "if someone occurs to a property other than a decrease in value, he shall guarantee the decrease in value," and Article (922), which states that: "If someone destroys the property of the other or decreases its value by cause, meaning if his act was a cause leading to damage. Money or its value decreasing is a guarantor, for example, if someone clings to another's clothing and when they are attracted to them, something falls out of him or is becoming defective, then the one holding on to it is guarantor, and likewise if someone blocks the water of another's land or the water he nursed, and his crops and planted are dried up, damaged or overflowing, and the crops are drowned and damaged, he is a guarantor. Someone opens the door of a stable to another whose animals are saved and lost, or he opens the door of his cage and the bird in which he is saved is a guarantor." And Article (924), states that: "Infringement is required for the fact that the cause is a condition of the guarantee on the aforementioned means that the guarantee of the one who caused the damage is conditional on his actual work." leading to that harm unjustly. For example, if someone digs a well on the highway without the permission of the ruler, and an animal falls into it for another and damages it, he is liable.

Where it is clearly noted from the above articles that the ruling of the harmful act in its three elements, and compensation is arranged for each harm to others, (refer to the explanatory notes for Article (256) of the Jordanian Civil Code), Hence, it is noted, in accordance with the above legislative texts, that the legislator has established responsibility for the harmful act based on harm, which does not necessarily reach the level of error (refer to Article (20) of the Code of Justice and its explanation by Ali Haidar), Nor did he link the right to compensation to the fact that the one who caused the damage was distinguished (refer to Articles (960, 913, 914, 912) of the Journal of Judicial Judgments and their explanation by Ali Haidar).

It is not required that the perpetrator has the intent to harm, and it is not required that the perpetrator of the harmful act be distinguished and aware of his actions and the consequences thereof, meaning that the legislator did not link the guarantee with discrimination and awareness (Review: Al-Khalayleh, 2011; Al-Mahasna, 2018).

In line with the rules of ordinary transactions, it is also noted with regard to electronic transactions and the virtual world, If a person is convicted of a specific electronic crime committed through a computer and the Internet, the conviction judgment alone is sufficient to prove the legitimacy of the victim's claim to compensate him for the damage he sustained (Al-Khalayleh, 2011). The texts of Decree Law No. (10) Of 2018 regarding electronic crimes, as well as the texts of Decree Law No. (15) of 2017 on electronic transactions are strict in this field, as we find that they criminalize every act that leads to the disruption of means of communication and computer systems or penetrates or disrupts their networks or that he commits an offense by using electronic means, Thus, the computer is a target of crime in the

event of illegal entry into a certain electronic work system and jamming or spying on it, as well as when spreading viruses that disrupt work (Al-Mahasna, 2018) and when illegally entering a site and displaying It has an illegal substance (refer to Articles (4–16) of Decree-Law No. (10) Of 2018 regarding cybercrime).

8.4.3 The Causal Relationship in the Liability Arising from the Violation of the Privacy and Sanctity of the Virtual Classroom:

As it has already been explained, it is required for the liability for the harmful act to be established in addition to the existence of a harmful act and harm that there must be a causal relationship between them, Meaning that the harmful act must be the one who caused the harm and would not have happened without him (Al-Mahasna, 2018); Accordingly, it is stipulated that the harmful act is precisely the one that caused the harm to a legitimate right, and on the basis of that, the injured party is entitled to a right to compensation.

The legitimate right for the virtual classroom and for social networking sites in general includes a set of interrelated rights, such as the right to freedom of expression and information exchange, the right to privacy, the right to engage in professional activities safely, the right to legal protection, the right to feel safe and protected, and the right to Existence of a technical means for safe business, and the right to practice professional activities without encroachment by anyone. Thus, it becomes clear that the attack on the virtual class harms one or more forms of rights resulting by the law for those dealing with digital transactions in general and the virtual class in particular. In a just and sufficient compensation to compensate for the damage that has befallen him (for more, see: Al-Dlou', 2016).

8.5 Discussion and Conclusion

This research analyses an important topic that is raised when talking about virtual education as a form of E-learning, which was used mainly in Palestine in light of the Corona pandemic, which prevented the possibility of continuing education in various educational institutions. This topic is how the legislator in Palestine protects the virtual classroom from any violation that may occur and prevents the possibility of holding it in a way that achieves its goal, which is to interact with students and provide them with various skills sciences and experiences.

And it was found that the legislator in Palestine ensured protection for this class with its various elements, such as the system or the parties to the educational process or educational materials, through the legislation in force, as it criminalized the act of penetrating the virtual class and controlling it by unauthorized individuals, as well

as the offence of assaulting the conduct of that class, and on the psyche and dignity of the parties to the educational process.

And the imposition of various misdemeanor penalties, ranging from imprisonment or a fine, which constitute a deterrent to anyone who is tempted to commit such violations, and this legislative protection is an effective means of expressing the State of Palestine's commitment to its obligations towards education by seeking to provide a safe learning environment.

The protection is not limited to what is provided by the penal texts but extends to also include the aspects of protection security in the civil rules that recognize the right of those who have suffered damages due to people's bad faith or without bad faith attacks on the virtual classroom and negatively affecting it and the educational materials and the parties to the educational process to compensation and reparation for those Damages, given that these attacks in themselves represent harmful acts that require compensation, and these resulting damages may be material damages that affect the person with material and moral losses that affect feelings, reputation and soul. Judges use experts to assess them in a way that achieves justice in compensation.

The research team recommends that the legislation in Palestine include legal texts that explicitly address compensation for moral damage as is the case in Jordanian and Emirati legislation; to prevent the occurrence of any jurisprudence that contravenes the right to this compensation. It is also recommended to pass a contemporary civil law dealing with civil liability with clearer and more precise rules than at the time.

As well as the need to conduct a comprehensive review of the relevant legislation to deal in a more accurate, comprehensive and more effective manner with the issue of assaulting the virtual classroom and the damage that results from it to keep pace with the developments that occur in the virtual classroom in light of the development of E-learning.

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Chapter 9
Using Educational Video to Enhance Creative Thinking Among Eight Grade Students

Abdel-Ghani Saifi and Salah Sharabi

Abstract This study aimed at recognizing the effect of the educational videos specifically YouTube while teaching eighth grade *Wave Motion and Sound,* which is a unit in their school subject (Science), on developing students' creative thinking and their attitude toward it. The study was conducted in the public schools that are supervised by the Directorate of education in Nablus during the second semester of the academic year (2020–2021). The experimental approach with semi-experimental design was utilized. The two methods of the study were:

- Testing creative thinking, which consisted of 6 parts.
- A questionnaire that measured the attitudes toward learning science, which consisted of 37 parts.

It was applied on the study sample which consists of 38 students from eighth grade in Deir Sharaf co-educational secondary school. They were divided into two groups: one of them was experimental with a total of 19 students, whereas the other one was a control group which consisted of 19 students. The experimental group was taught using the scientific YouTube, while the control group was taught using the conventional method. The results have shown that the scientific YouTube was efficient in terms of boosting students' creative thinking, as the ones who studied the educational unit using the scientific YouTube displayed much more creativity compared to their classmates who studied through the traditional way. Furthermore, the scientific approach has increased their desire to learn science and they showed more positive attitudes compared to the students who learnt traditionally. The study recommended the need to include this method in the curriculum, and to put links to various educational videos throughout the curriculum. Additionally, It confirmed the necessity to train teachers to create educational videos and broadcast them on YouTube.

Keywords Video · Technology integration · Creative thinking

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9.1 Introduction

The current technological revolution has contributed to the improvement of the educational process. Computers are included in the different sectors of the curriculum which rationalized the educational process. It added new ways and strategies to the curriculum which depend on students. Moreover, technology had several positive effects on teaching as learners now, with the help of their computers, can simulate reality and working life. This is applicable through an educational, virtual, effective, flexible, user-friendly environment that substitutes the real environment in which learners can interact with and share with their mates (Al-Luhaidan, 2019).

One of the advantages of technology in education is that the former has smoothly integrated into the educational process. It also justified the rigid topics, especially the general science topic, which derives its significance from its technological applications in order to escort the spirit of the age. Accordingly, contemporary trend in science education confirms that development should aim at understanding the content of the science, the methods that scholars use to access this content, and the ways that can be utilized to teach it (Salah, 2016; Al-Murshidi & Al-Saghir, 2016).

Due to the current circumstances in the light of the corona crisis, most countries around the world sought online education through the internet, which includes several applications. Therefore, it was necessary to educate students through different electronic websites such as YouTube. It makes presenting and watching a large number of universal and local videos possible. Moreover, it enables teachers to create educational videos of their own and to upload them on their YouTube channels, through which teachers can interact with their students and provide them with the study material. Not to mention its other contents of various intellectual videos which are displayed in interesting, attractive and appealing ways. These videos hold a large amount of general information which boosts students' intellectuality and contributes for improving their thinking (Dis & Sheibani, 2018).

Creative thinking is the most significant skill that must be enhanced since it is one of the twenty-first-century skills that students must possess. It is also one of the four skills that are called 4C (communication, cooperation, critical thinking, and creative thinking). It was named this way due to its translation in English (Communication, Collaboration, Critical thinking, and Creativity). Creative thinking is very important to deal with the industrial revolution, which was featured by the remarkable development of science and technology. This is because nations need minds that think creatively and adjust to this development more than their need for resources. Therefore, it is preferable to use scientific videos in the educational process which helps to improve students' thinking (Madyani et al., 2019; Ben Belkacem et al., 2018). It is undeniable that YouTube is the largest site with a huge number of videos that vary between educational, entertaining, informative, and others. Content creators compete for it in terms of the number of views and comments; Therefore, they design attractive and interesting content that adds fun and entertainment to students. This deviates from the familiar traditional teaching, and hence leads to student motivation and a positive level of learning (Mazhar, 2019).

9.2 Research Problem

Studies and pedagogical literature have shown that there is a weakness and a decline in students' attainment of science, and a deficiency in students' creative thinking skills, as they tend to memorize without studying the content deeply. In that respect, we note in particular life sciences which must be understood in depth. The results of the Timms study, which indicate the low level of students' academic achievement in science, confirmed the results of the International Study of Mathematics and Science for Palestinian Students (Afouneh, 2015). Several conferences called for the necessity of using technology and internet in the teaching and learning process. This was addressed by the Conference on Technology Education and Educational Technology, which was held in Palestine in 2010 AD. The problem has exacerbated and worsened in light of the Corona pandemic, and the resulting policy of electronic or blended education, which prevented students and their teachers from being able to apply the materials in a practical way. In light of this, and by examining the importance of audio-visual aids in teaching; including videos, and scientific YouTube, the study of Kohler and Dietrich (2020) showed that educational video is a method to achieve effective communication with teaching content. Furthermore, what is available on the Internet allows all individuals to view it and benefit from its content. There are other studies that recommended it via the Internet, especially YouTube, such as the study of Abbas and Qassim (2020). Based on the aforementioned, the impact of scientific videos on developing students' creative thinking and their attitudes toward learning science was examined.

9.3 Research Objectives

The study aimed to:

1. Identifying the impact of scientific YouTube while teaching Wave Motion and Sound which is a unit in the science curriculum of eighth grade students on developing their creative thinking.
2. Recognizing the influence of scientific YouTube while teaching Wave Motion and Sound which is a unit in the science curriculum of eighth grade students on their attitude toward learning science.

9.4 Research Questions

The main question:

> How does using scientific YouTube affect teaching a unit titled *Wave Motion and Sound* in the science curriculum of eighth grade's students in terms of developing creative thinking and their attitude toward it?

From this main question there are two sub-questions:

1. What is the effect of using scientific YouTube in teaching the unit of wave motion and sound in science and life for eighth grade students in developing their creative thinking?
2. What is the effect of using scientific YouTube in teaching the unit of wave motion and sound in the sciences and life subjects of eighth grade students on their attitude toward it?

9.5 Hypothesis of the Research

The study endeavors to test the following hypotheses:

1. There are no statistically significant differences at the significance level ($\alpha \leq 0.05$) between the average degrees of creative thinking among eighth-grade students, because of the teaching method (scientific YouTube, the usual method).
2. There are no statistically significant differences at the significance level ($\alpha \leq 0.05$) between the averages of the attitudes of eighth grade students toward learning science, due to the teaching method (scientific YouTube, the usual method).

9.6 The Importance of Studying

Theoretical importance: this research adds to the pedagogical literature the field of scientific YouTube; Because of its positive effects in developing students' thinking skills. Its importance stems from the integration of technology into education. The Ministry seeks that, especially in light of the Corona pandemic since it improves students' understanding of abstract scientific concepts in the light of blended education, or e-learning.

– Practical importance: It sheds light on the usage of scientific YouTube, draws the attention of curriculum developers and decision-makers to the need to include links to scientific videos on YouTube within the curriculum, and urges teachers to use it in teaching.

Research importance: This research constitutes a starting point for other researchers. This will contribute to the creation of (YouTube) channels that are related to the subjects of the Palestinian curriculum.

9.7 Scoop of the Study

– Spatial limits: the study has been limited to the students of eighth grade in secondary public schools in Nablus.

- Time-limits: the study was carried out in the second semester of the year (2020–2021).
- Human-limits: The study was applied on an intentional sample of eighth grade students during their science classes in the public schools affiliated to the Directorate of Education in Nablus.
- Substantive limits: The study dealt with the sixth unit of The Science and Life book for eighth grade which is applicable in the Palestinian curriculum, entitled (Wave Motion and Sound) from page 44 to page 63.

It is a social media platform that is based on a participatory culture by reducing barriers that prevent content creators to reach the audience. Moreover, it transforms viewers from passive consumers to active participants (Welbourne & Grant, 2015).

9.8 The Spread of YouTube

Despite a series of disagreements and the public's relatively negative sentiments against aspects of social media, nearly seven in ten Americans say they use any type of social media. It is a proportion that has remained relatively stable over the past five years, according to a new survey by the Center for social media (Pew) for Research in the United States.

In addition to the general question about the overall usage of social media, the survey also takes into consideration the use of sites and individual applications, with YouTube and Facebook continuing to dominate the online scene. The usage of these sites accounts for 81 and 69% respectively, with YouTube and Reddit being the only two platforms out there. They have been measured and have experienced statistically significant growth since 2019, when the center last polled on this topic via a telephone survey (Auxier & Anderson, 2021).

9.9 The Scientific YouTube

Educators and academics have posted their scientific experiments on YouTube. They began to take videos of their scientific works and experiments, lectures, as well as educational lessons, then publish them on YouTube. Educational institutions and academics are creating their own channels for their scientific output to benefit their target audience and others from the general public. Therefore, they used YouTube as a scientific tool, whether within the traditional educational system, or through distance education. Accordingly, many international scientific journals recognized the role of YouTube in scientific communication since they established their own channels on it such as *Journal for Number Theory*, which publishes explanations of its scientific research. Therefore, any educational, academic, or intellectual content broadcast on it is considered a *scientific YouTube* (Ghoneim, 2015).

9.9.1 The Scientific Concept of YouTube

It is an electronic educational tool, through which it is possible to learn the experiences, skills, and knowledge of the user, and to further enrich the educational process. Videos are made by teachers and trainers with a greater expertise than the Learners. Moreover, it is an electronic website for exchanging ideas, opinions, traditions and customs as well as publishing them among learners. (Al Kadam, 2019).

9.9.2 Scientific Video Features

The educational video is often short, simple, comically explained, and easily accessible. Furthermore, the creator of the content explains things as if he/she elaborates to a friend. The video also focuses on the entertaining aspect of it which makes it more interesting and enjoyable (Kohler and Dietrich, 2020).

9.9.3 Scientific Video Formats

There are three forms of educational video, as explained by Greenberg and Zintz. First, videos on Demand which are available on CDs, storage devices, or uploaded to the Internet. Second, one-way videos which rely on the real-time element, where they are broadcast according to a specific timing, such as a TV channel. Third, interactive videos in two directions which are broadcast in two simultaneous directions, such as live broadcast videos, video meetings, and online class platforms (Mazhar, 2019).

9.9.4 Using YouTube in Education

YouTube company published a statistic for a list on its website of more than (600) university channels, (350) primary and secondary schools, and (370) long-term educational channels, that use YouTube to teach students, in addition to other facilities offered by the company for education (YouTube education channels, 2012).

9.9.5 The Interaction of YouTube

Regarding education, YouTube is distinguished because it increases the level of interaction between students and teachers, and between students themselves. It generates learners who are able to build educational content, share it with others, and publish

it to people. Additionally, it has an important role in motivating students to learn, raising effective discussions among them, and employing technology in education to the greatest extent possible. Educational videos on YouTube constitute an enriching material that can be referenced when needed. It encourages creative ideas as the site is for interaction, and is not limited to watching. It is also a site that can be used for lifelong learning of all age groups, and it is an educational and entertaining networking site (Al Kadam, 2019). Students in many schools also have the advantage of digital boards, which is a system in which audio or video lectures on topics from the curriculum are presented. These boards are used to understand difficult and complex scientific concepts. Other than that, children love to study using innovative, attractive, intellectual and conceptually powerful teaching methods. Students feel that learning and remembering the materials is difficult. However, once they see the whole process, it makes the learning process authentic, and students get to know how to actually do things (Sharma & Sharma, 2021).

9.9.6 Teaching Steps Using YouTube

(Snyder and Brick) developed a set of steps for teaching on YouTube, which are:

First: Preparations for the teacher which includes preparing the educational content to be taught.

Second: Ensuring that educational videos reach all students, and that they have an internet connection.

Third: Presenting the lesson and discussing it with the students.

Fourth: Evaluating students by assigning them to the projects and tasks through which they will be evaluated (Abu Al-Rayat & Al-Sudani, 2019).

9.9.7 The Concept of Thinking

It is an internal mental process that expresses a mental activity through which knowledge interacts. Its intentions are directing the research toward choosing solutions to problems, making decisions regarding an issue, reaching the deepest degree of understanding of an issue or a particular speech, or creating something new. This activity cannot be seen, but it is observed through the experiences of the individual (Solomon 2017). It is also a mental activity in the form of organizing and arranging symbols, mental images, signs, semantics, as well as ideas in the mind. Those that symbolize people, accidents, or certain sensory things. This process helps a person to find a solution for the problems (Razouki and Muhammad, 2018).

That creativity can be learned, and that it is important for successful participation in the life of the twenty-first century are basic assumptions about creative thinking underlying the ACER definition. ACER defines creative thinking as the ability to

generate different types of ideas, manipulate them in unusual ways and make unconventional connections. This is to elegantly outline the possibilities that have the potential to meet a particular purpose (Ramalingam and Anderson, 2020).

9.9.8 The Components of Thinking

They manifest in various cognitive processes, from the least complex, such as comprehension, application, through the complex, such as problem solving, reasoning, up to metacognitive, such as control and direction. Then they appear in knowledge, experiences, skills specific to the content of the problem or topic, tendencies, motives, and personal attitudes specific to the thinker (Soliman, 2017).

9.9.9 Thinking Patterns

There are several classifications of thinking which include classifying thinking according to effectiveness, as there is effective thinking that has a precise methodology, objective foundations, and correct assumptions that seek to address the subject studied. Examples are logic, intuition, and lateral thinking. There is also ineffective thinking that does not follow foundations and assumptions. It is correct, as it is built on inaccuracies and hasty decisions. Moreover, there is mathematical thinking that includes relationships between terms, numbers, symbols, and others. Examples of which are: induction, inference, and others. Positive thinking helps people overcome their problems. It has several patterns which include scientific, rational, and religious thinking. As for negative thinking, it is the one who lives with negative feelings and beliefs that just make his/her life difficult challenges. Examples of which are as pessimism, delusion, superstitious, heretical, and legendary thinking, as well as pragmatic, lateral, vertical, directed, convergent, and divergent thinking (Sheikh, 2015).

9.9.10 The Concept of Creative Thinking

It is defined as a mental process that runs according to a series of processes through which the subject is treated. It is joined to a large number of experiences stored in the learner's cognitive structure. It works to internalize it, or introduce it within the self, then integrate it into its knowledge structure, until finally it reaches new solutions. These outcomes are in the form of performances, treatments, and cognitive structures (Salama, 2016).

Al-Khatib (2018, p. 103) also defines it as "open thinking that breaks out of the usual sequence until it becomes diversified thinking that leads to the generation of more than one answer to the problem".

Al-Saifi and Abu Diak (2016, p. 1017) defined it as a mental activity, which has several forms, through which an original product is produced, whether from the individual or society.

9.9.11 Components of Creative Thinking:

There are a number of components that make up creative thinking. Fluency is the element that includes fluency of forms, verbal fluency, fluency of meanings, or intellectual fluency. Another component is flexibility which is divided into several sections. They include spontaneous or spontaneous flexibility, adaptive flexibility, originality, overflow/expansion, and sensitivity to problems (Abu Al-Hajj, 2016).

9.9.12 Features of Creative Thinking

Creative thinking is characterized by excitement and the pleasure that learners obtain in learning. Accordingly, it makes their attitude positive toward the educational process, and can also raise the level of emotional attachment between them and the nature of learning. This enhances the effectiveness of the learner's memory. Moreover, creative thinking works to improve learners' abilities to accept change and deal with it under the circumstances of rapid changes in the current era, and adapting to it with ease (Abu Al-Hajj, 2016).

9.9.13 Factors Affecting Creative Thinking

There are several factors that work against creative thinking, such as simulation and imitation. On the other hand, there are factors that increase its value, such as fluency, motivation, and independence. This is encouraged by the proper child-rearing whether at home or school. Schools warn against violence and suppression which lead to the killing of motivation, fluency, and independence. They turn individuals into followers. These traits are personal qualities that the individuals learn, or acquire during their learning (Abu Diak, 2016).

9.9.14 The Importance of Creative Thinking

Creative thinking can benefit the way students learn by supporting the interpretation of experiences, actions, and events in new and personally meaningful ways. Students' imagination and curiosity can lead the learning process. Thus, creative thinking can be a method for understanding, even in the context of pre-determined learning goals in order to increase students' motivation and interest in school, and to identify the creative potential of all students. This development may particularly assess students who do not display great interest in school, and guide them to express their ideas and realize their potential (PISA, 2021).

9.9.15 The Meaning of Scientific Attitudes

Baker illustrates *attitudes* as the determination of the course of human behavior which is used to explain things based on a theoretical model, whereas Grands defined the concept of attitude as an explanation for opinions based on theories. Furthermore, he elaborated in detail the definition of Likert through identifying attitudes as the individual fears, threats, beliefs, emotions, preconceptions, and partiality or impartiality about any particular subject.

9.9.16 The Importance of Scientific Trends

Attitudes are of great importance in psychology because they have a significant impact on the behavior and activity of the individual. Psychological trends form the wheel that pushes individuals toward carrying out their activities and achievements in order to reach their goals. Teachers seek to achieve that to excite students and motivate them toward successful learning. This can be obtained by working on positive trends, activating them, and directing negative trends to serve positive trends (Salah, 2016).

9.9.17 The Concept of Attitudes

It is students' tendency toward the subject, learning it, studying it as well as their feelings that accompany the learning and studying process.

9.9.18 The Components of Attitudes

Attitudes consist of information, ideas, and beliefs that individuals possess toward a particular subject. Thus, such information can be correct or can just be myths and superstitions. Moreover, attitudes consist of the feelings and emotions that individuals display about a subject, and finally the behaviors that they do as a response to the subject itself (Ahmad et al., 2017).

9.9.19 Characteristics of Attitudes

Attitudes in teaching science are characterized by the following features. First, it is constant although it can be relatively modified under special circumstances. Second, it is subjective and not objective to some extent. Attitude has two poles, either support or opposition, and there is nothing in between.

Using the scientific YouTube in teaching science to students has several merits. It also has a positive influence on their attitude toward their school materials. Enhancing creative thinking leads to boost their confidence and hence improves their tendency toward studying subjects and learning them. This research paper discussed the relationship between educating students using the scientific YouTube when teaching a unit in science in eighth grade's curriculum and its impact on developing their creative thinking as well as their attitude toward learning this subject.

9.9.20 Previous Studies

Barakat's study (2020) aimed at illustrating the conceptual framework for the educational challenges facing teachers from their point of view in YouTube videos, and the means to meet them. The study followed the descriptive approach. The researcher used a questionnaire that searches for the pros and cons of YouTube videos to achieve its purposes, and to collect data. The study sample consisted of (750) of Jeddah teachers. Among the most prominent results of the study is that the sample members agree on educational challenges, and facing them, such as video clips on YouTube.

Al-Ajrami's study (2019) worked toward identifying the efficiency of educational videos via YouTube in developing the skills of producing digital stories among students of the College of Education et al.-Aqsa University, and their attitudes toward using YouTube. The researcher used the systematic and experimental developmental approach as a method to study it. The achievement test, a product evaluation card for the skill of producing digital stories, and a measure of the tendency toward employing YouTube were used. There are statistically significant differences in the achievement of the experimental group between the pre- and post-tests, as well as the evaluation card in favor of the post-test, as well as the measure of post-attitude. The study

recommended the necessity of holding workshops and training courses for teachers on the importance of digital stories, how to produce them, and use them effectively in learning.

The study of Des (2018) aimed to find out the impact of YouTube and its role in developing the cultural awareness among female university students outside their field of scientific major. They are students at the Faculty of Media and Communication Sciences at the University of Jilali Bounaama in Khemis Miliana. This study has adopted the descriptive approach. The researcher has used a questionnaire to achieve the aim of the study in describing and collecting data. Among its most important results that YouTube raised the cultural level of female students, and provided them with cognitive information.

Muhammad's study (2018) aspired to figure out the effect of designing an interactive learning environment based on the use of social networks such as YouTube in developing life skills for eleventh grade students. The experimental approach was selected. The test was used as a tool to achieve the objectives of the study. One of its most significant results that the interactive learning environment which is based on using social media networks contributes for the enhancement of the cognitive aspect of life skills among female students of eleventh grade. It also has an effect on improving the performance side as well as both of the cognitive and skill aspects for life skills.

The study of Mazhar (2019) aimed to uncover the reality of the skills possessed by faculty members in Palestinian higher education institutions in employing the digital video technology (YouTube) in the teaching process. It also aimed to find out the role of YouTube in determining the training need. Moreover, its goal was to assess the extent of the training gap in the knowledge and skills aspects at the immediate and strategic levels. The researcher utilized the descriptive analytical approach as a method to study it. The study sample consisted of a group of Palestinian university professors, whose sample was intentional. It consisted of (190) faculty members. The researcher used the questionnaire as a tool for data collection in her study. One of the most crucial results of her study is that faculty members have a medium degree of skills in dealing with YouTube technology and digital video groups. As for the training needs, she gained a strong desire to undergo training courses in order to raise the skill of digital video as a useful tool in the educational process.

Chowdhury's study (2019) aimed to shed light on the amount of time university students spend on YouTube videos. The descriptive approach was employed to study it. She used the questionnaire as a tool for data collection, and her sample in the research was a survey of college students in southern (Bengaluru). Male students account for (59%) and females (41%) of the total sample, and their ages are between 18 and 25 years. The main goals of the study were achieved. The researcher determined that YouTube has a significant impact on university students in (Bengaluru).

As for the Almobarraz study (2019), it aimed to explore the perceptions, attitudes, and experiences of university students, who use YouTube as a source of information to support their learning. It also aimed to acknowledge the effect of teachers' usage of

YouTube for training course activities. The quantitative survey method and the questionnaire were used as a study tool. Its sample was undergraduate students from the College of Computers and Information. One of the most important results of the study is that implementing YouTube in the classroom positively affects students' understanding. Additionally, teachers have positive attitudes toward integrating YouTube in activities.

The study of Quintana et al. (2020) aimed to recognize the role of participatory culture (digital resources, social networks), especially YouTube, in the learning processes and skills in science, technology, engineering, and math. In order to achieve the objectives of this study, the researchers used the mixed approach, questionnaire and interview to survey data from a sample of (4,845) Italian adolescents. In addition, they analyzed the content of videos of educational channels on YouTube that affect the educational process such as the Elia Bombardelli channel. An in-depth interview was also applied on 12 Italian secondary schools (teachers). One of the most important findings of this study is that all teenagers value YouTube videos as a major resource for improving their school performance. Moreover, YouTube creators are rated better than teachers. However, it is evident that they prefer learning processes and the acquisition of competencies (STEM) to interact with teachers instead of YouTube creators.

The study of Abbas and Qassim (2020) aimed to investigate the extent of YouTube's activity, its influence on the educational process, as well as the way this is beneficially done to enable language teachers to enhance the students' skills and to achieve the objective of the study. The researchers used the quantitative approach, using a questionnaire tool on a sample of fourth-year students in the College of Education at the University of Baghdad. One of the most important results of the study is that YouTube is an essential tool in the classroom since it attracts students' attention, develops their mentality and creativity, and helps to cover materials comprehensively, especially language. It also introduces an element of fun in the classroom which meets students' concerns. These results have a great impact on their learning process, as they find the educational environment more encouraging and exciting. Besides, they found the given material worthy.

Sakkir et al.'s study (2020) investigate students' perceptions about the use of YouTube in the English language learning process in the Department of English Language. The researchers used the quantitative approach through the use of a questionnaire, and the five-point Likert scale to measure the perception of YouTube students. The data were collected from students of the English Department of the University of Makassar in Indonesia. The results of this study indicate that the majority of students showed a positive perception and willingness to use YouTube in teaching English as a foreign language. It was also discovered that students used YouTube to help them complete the course and study tasks. Therefore, it can be concluded that the students preferred to use YouTube videos in English to help them improve their English language competency.

It is clear from previous studies that scientific YouTube has a positive impact in facing educational challenges among the sample members (Barakat., 2020). Faculty members have a medium degree of skills in dealing with YouTube technology, and

digital video groups (Mazhar, 2019). Moreover, there is a crucial effect of educational video clips on developing the skill, cognitive, and emotional aspects (Al-Ajrami., 2019). YouTube plays an important role in raising the cultural level and imparting cognitive information (Des, 2018). Interactive learning environment contributes to the enhancement of the cognitive aspect of life skills (Mohamed, 2018; Chowdhury, 2019). It showed that teachers have positive attitudes toward integrating YouTube into the course activities (Almobarraz, 2019; Quintana et al., 2020). YouTube is a necessary tool to attract students' attention and to boost their creativity. It also helps to cover the subjects comprehensively, especially languages, and it introduces an element of fun in the classroom and meets the interests of students (Abbas & Qassim, 2020).

9.10 The Method and the Processes

9.10.1 The Study's Approach

The experimental approach was used together with a semi-experimental design to uncover the impact of implementing the scientific YouTube while teaching *Motion and Sound Waves* which is a unit in the science curriculum of eighth grade on developing their thinking skills. The nature of learning requires this approach since it helps to obtain the objective of the study and to answer its questions. They are about the relationship between the independent variable (using scientific YouTube) and its influence on the dependent variables (creative thinking and the attitude of students toward learning science).

9.10.2 Study Group

Study group consists of all students of eighth grade in the second semester of the year 2020/2021 who study in the public schools of the Ministry of Education in Nablus. The total number of the study group has reached (2479) students, distributed in the schools of the directorate of Nablus (Education office/Directorate of Nablus).

9.10.3 Study Sample

The sample of the study was selected intentionally, and it consisted of 38 students. They are students of eighth grade, both (A + B) in Deir Sharaf Secondary co-educational school where the researcher works as a teacher. One of the classes (A)

was assigned impulsively as an experimental group, while the other class (B) was the control group.

9.10.4 Study Tools

The tools of the study were constructed based on the research's approach, that was followed. They were built to achieve the goals of the study which manifest in identifying the influence of using YouTube in teaching Science on the development of the thinking skills of eighth grade's students in Nablus as well as their attitude toward learning it. The following is a description of the study tools, and their verification:

1. **Evaluating Creative Thinking**

The evaluation of creative thinking was prepared after looking through a unit in eighth grade's science book which is (Wave Motion and Sound), analyzing its content, determining its objectives, putting preparational plans for it and measuring it according to the number of periods required for each lesson. In line with the semester's plan of *science and life* subject, a test was prepared to measure the creative thinking of eighth graders by measuring its three creative skills which are fluency, flexibility, and originality. The test was properly formulated, with terminologies that suit the level of students, and it took into consideration the search for the impact of the Scientific YouTube. Accordingly, the test is seen as an appropriate tool to measure the role of the scientific YouTube in improving creative thinking and applying it on to groups, experimental, and control.

9.10.5 Validity of the Test

It means that the test achieves the goals that it was prepared to evaluate, and that it answers the study questions honestly. Therefore, the creative thinking test was presented to a number of arbitrators, including physics and education specialists, science teachers, as well as others in education, such as educational supervisors. This is to ensure its validity, and that it actually measures the objectives of the research's content. It was also shown to them to ensure it has clear instructions, its words and vocabulary are sound and understandable to students, and it is closely related to the content of Wave Motion and Sound, the unit from the science subject for eighth grade in the Palestinian curriculum. The test had to be suitable for the characteristics of the mental development of the students, and can be applied easily. Based on the above, the researcher received the opinions of the arbitrators, and modified the test according to their feedback. The test was also applied to the exploratory sample of the study community, and outside the sample consisted of (38).

9.10.6 The Constancy of Test

It refers to having the same results in case the test was given more than once to the same sample of students. In order to obtain this, the test was given to the survey sample again two weeks after giving it to them the first time. It was confirmed that the answers of the survey sample were similar and related to their answers in the first time. Accordingly, the test was applied on the survey sample that consists of 30 students from ninth grade in the year 2020–2021 at Yasid secondary school. They were given the test twice, with a time difference of two weeks. After marking the test and getting its results, the researcher tested them using Cronbach's alpha equation to ensure the constancy of the test. The test has received (0.82) which means that it has a percentage of an educational acceptable constancy.

9.10.7 The Questionnaire

It was used as a tool to get the initial data on the attitudes of students. The questionnaire of attitudes toward learning science was utilized. It was already used in Salah's study of the impact of stories and the scientific activities in educational obtainment and the attitudes of the female students in fifth grade in the schools of Jenin (Salah). It was also modified so that it becomes more honest in measuring its objectives. As for the constancy of the questionnaire, the researcher has tested its stability and it obtained a half-segmentation (0.90).

9.11 Study Procedures

They are as follows:

1. Determining the study problem, which is the impact of scientific YouTube on the creative thinking of eighth-grade students in science and life.
2. Reviewing educational literature, and previous studies related to the subject of scientific YouTube.
3. The study sample on which the study was applied is eighth grade students at Deir Sharaf Secondary Mixed School.
4. Deciding on the time- and objective limits of the study which are the second semester of the academic year 2020/2021 AD, and the study unit entitled (Wave Motion and Sound) in the eighth-grade *science and life* book. It is the sixth unit of the textbook.
5. Constructing the study tools, and checking their validity. These tools are the test and the questionnaire, which were presented to the arbitrators.
6. Applying the creative thinking test to the exploratory sample twice, with a difference of two weeks, before starting to test the study (Test & Retest).

7. Calculating the stability of the tools, and finalizing it.
8. The two groups, experimental and control were randomly assigned.
9. Applying the former creative thinking test to the two groups: the experimental and the control group.
10. Distribution of a questionnaire to measure students' attitudes toward learning previous sciences on the two experimental and control groups.
11. Applying the experimental treatment to the two study groups for a period of up to three weeks, so that:
    - The experimental group was taught using scientific YouTube.
    - The control group was taught using the usual method.
12. Applying the dimensional creative thinking test after completing the application of the experimental treatment.
13. Distributing the questionnaire to the two sample groups: experimental and control, to measure students' attitudes toward learning science after finishing the application of the treatment, and then collecting it.
14. Obtaining the results, analyzing them with the necessary statistical treatments, discussing them, and making recommendations.

9.11.1 Study Design

The study adopted a semi-empirical design, according to the following scheme:

Experimental Group: O1 O2 X O1 O2.

Control Group: O1 O2—O1 O2.

X: Processing (Using Scientific YouTube). O1: Applying the Creative Thinking Test.

_: Using the normal method. O2: Applying the questionnaire of students' attitude.

9.11.2 Statistical Processors

Statistical Package Program (SPSS) was used to perform the following statistical analyses:

1. Arithmetic averages and standard deviations were used to check for differences in the tests conducted on the two study groups.
2. One Way ANCOVA was employed to test the hypotheses of the study.
3. The reliability of the test was checked using Cronbach's Alpha equation.
4. The constancy of the questionnaire was checked using the semi-segmentation.

9.11.3 Study Findings and Its Discussions

The results of the study questions

The first question: How does using scientific YouTube in teaching the unit of Wave Motion and Sound in science and life for eighth grade affect the development of students' creative thinking? To answer this question, the following null hypothesis was constructed: There are no statistically significant differences at the significance level ($\alpha \leq 0.05$) between the average degrees of creative thinking among eighth grade students due to the teaching method (Scientific YouTube, the usual method). To test this hypothesis, the arithmetic averages and standard deviations of the scores obtained by the students according to the creative thinking test were extracted in the experimental and control groups. Table 9.1 displays these results.

Table 9.1 shows a clear variation in the arithmetic averages of the creative thinking scores of the students of the control and experimental groups in the post-test in the unit of Wave Motion and Sound. Thus, there is a difference in the arithmetic means (7.14). To clarify the significance of the statistical differences between these averages, the accompanying one-way analysis of variance (ANCOVA) was used, and the results in Table 9.2 are as follows.

According to Table 9.2, that null hypothesis is not accepted which means that there are statistically significant differences at the significance level ($\alpha \leq 0.05$) between the creative thinking displayed by students who studied traditionally Wave Motion

Table 9.1 Illustrates arithmetic averages and standard deviations of the grades of eighth grade students for the creative thinking test according to the two study groups (before and after)

The group	The number	The pre-test of the creative thinking (out of 38)		The post test of creative thinking (out of 38)	
		Arithmetic averages	Standard deviations	Arithmetic averages	Standard deviations
Experimental	19	17.47	4.28	23.47	4.28
Control	19	15.26	8.78	16.26	8.78

Table 9.2 Displays the results of the accompanying one-way variance analysis (ANCOVA) for the impact of scientific YouTube on the development of creative thinking while learning the unit *Wave and Sound* among eighth-grade students. They are in the control and experimental groups in the dimensional scale

The source of variation	Sums of squares	Levels of freedom	Average squares	F	Statistical significance
Pre-test	934.572	1	934.572	41.730	0.00
Way of teaching	272.961	1	272.961	12.188	0.01
Mistakes/errors	783.849	35	22.396		
The total	17,213.000	38			

* **Statistically significant at the significance level ($\alpha = 0.05$)**

and Sound, a unit in the Science and Life subject, and the creative thinking of the students who studied using the scientific YouTube. The statistical significance was (0.00), which is less than (0.05). The difference is attributed to the teaching method (YouTube, regular) in favor of the experimental group that studied on YouTube. This means that the creative thinking of students who studied the unit through YouTube has increased more than their counterparts who studied in the usual way. implementing YouTube in teaching leads to the retention of information for a longer period in memory and better use of it in mental processes. It is because using senses more openly achieves better learning, it also activates the two parts of the brain and employs them better in the educational process. This explains the increase in students' fluency, as it led to the generation of new ideas, and prompted them to better use the thinking skills in the brain. They give more solutions, examples, and ideas. As for the skill of originality, the use of scientific YouTube led to the eradication of students' fear of presenting ideas. This is because each student has his/her own ideas which are far from repetition and plagiarism. In addition, this method of teaching boosted their self-esteem. Students have also become flexible in receiving ideas and fixing them in their brain as it may deem appropriate. This is because scientific YouTube has unleashed students creativity, away from restricting them with specific ideas. It is noteworthy that creative thinking skills cannot be isolated from each other, as the growth of one of them impacts and is affected by the growth of the other. It also brings about the growth of creative thinking completely. Therefore, these results agreed with the results of the Barakat study (2020), which proved that the sample members are capable of meeting the educational challenges they face in scientific YouTube. They are also in harmony with the study of Al-Ajrami (2019), which showed the effectiveness of scientific YouTube in improving the skills of producing digital stories among college students. Furthermore, the results are compatible with the study of Dees (2018), which illustrated that YouTube plays an important role in raising the cultural level of university students, and providing them with cognitive information. It also complied with Muhammad's study (2018), which authenticated that there is an impact of the interactive learning environment based on the use of social networks such as YouTube on the development of the cognitive aspect of life skills for first year secondary students. It also affects the development of the performance aspect, the growth of both sides of knowledge, and proficiency for life skills. The results side with Mazhar study (2019) which demonstrated that faculty members have a medium degree of skills in dealing with YouTube technology and digital video groups. They also agreed with both the study (Chowdhury, 2019) which determined that YouTube has a significant impact on university students in (Bengaluru) and the study (Almobarraz, 2019), which presented that employing YouTube in the classroom positively affects students' understanding of their classmates. It showed that professors have positive attitudes toward integrating YouTube into the course activities. The findings got along with the study (Abbas & Qassim, 2020) that YouTube is an essential tool because it attracts students' attention, develops their mentality and creativity. It helps to cover the material comprehensively, as it introduces the element of fun in the classroom, which meets their interests.

The Second Question:

The second study question states: "What is the effect of using scientific YouTube in teaching the unit of wave motion and sound in science and life for eighth grade students toward their attitudes?".

In order to answer this question, the following null hypothesis was formulated: There are no statistically significant differences at the significance level ($\alpha \leq 0.05$) between the averages of the eighth-grade students' attitudes toward science learning due to the teaching method (Scientific YouTube, the usual method). To evaluate this hypothesis, the arithmetic averages and standard deviations of the responses of the study sample members in the experimental and control groups were extracted in the pre- and post-questionnaire. Table 9.3 shows these results.

Table 9.3 shows an evident difference in the arithmetic averages of the responses of the eighth-grade students to the questionnaire of their attitude toward learning science between the control and experimental groups. The arithmetic average of the control group in the post-questionnaire was (2.8579), whereas the experimental group was (4.3829). To explain the significance of the statistical differences between these averages, the accompanying one-way analysis of variance (ANCOVA) was used, and the results in Table 9.4 are as follows.

It is clear from Table 9.4 that the null hypothesis is not accepted which means that there are statistically significant differences at the significance level ($\alpha \leq 0.05$) between the attitudes of students who studied traditionally toward learning sciences, and those who studied using the scientific YouTube. The statistical significance reached (0.00) which is attributed to the teaching method (YouTube, regular). This

Table 9.3 Represnts Arithmetic averages and standard deviations of the responses of the study sample members of the eighth-grade students in the students' attitude toward learning science

The group	The number	The pre-questionnaire (38)		The post-questionnaire (38)	
		Arithmetic averages	Standard deviations	Arithmetic averages	Standard deviations
Experimental	19	2.01	1.964	4.3829	0.18359
Control	19	2.14	1.895	2.8579	0.55072

Table 9.4 Demonstrates the results of the associated one-way variance analysis (ANCOVA) for the effect of using science YouTube on students' attitudes toward learning science

The source of variation	Sums of squares	Levels of freedom	Average squares	F	Statistical significance
Pre-test	1.426	1	1.426	8.467	0.006
Way of teaching	51.270	1	51.270	304.475	0.000
Mistakes/errors	5.894	35	0.168		
The total	475.381	38			

* **Statistically significant at the significance level ($\alpha = 0.05$)**

result indicates that the method of teaching on YouTube increases students' attitudes toward learning science. It explains that the reasons for the increase in students' positive attitude toward learning science using the scientific method of teaching (YouTube) are the excitement it provides while learning and the disposal of the routine. In addition to that, it hits the target accurately, as it uses what students are excited about such as the Internet and the mobile phone. They can learn using the device they play and have fun with. Learners can control their learning process by repeating what they want and skipping what they want from the videos as there are many alternatives to it. The results of this study also agreed with the study of Al-Ajrami (2019), which showed that there is a positive trend of using YouTube in the production of digital stories among college students. They complied with the study (Chowdhury, 2019) that YouTube has a significant impact on university students in (Bengaluru). They also acknowledged the Almobarraz study (2019), which explained that teachers have positive attitudes toward integrating YouTube into the course activities. Finally, the results were in harmony with the Abbas and Qassim study (2020), which illustrated that the use of YouTube in teaching meets the interests of students. These results have a great impact on their learning process, as they find the learning environment more encouraging and thrilling.

9.11.4 Recommendations

This study has concluded a set of recommendations:

- Decision-makers should reconsider the necessity of integrating the use of scientific YouTube in the school curricula, place its links within the curricula and urge its use.
- Teachers should be trained to use it and include it in their teaching plans. They should be encouraged to activate it well in teaching due to its positive role in developing students' creative thinking and improving their scientific attitude.
- Conducting more research on the scientific use of YouTube, and examining its impact on teaching by researchers.

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Chapter 10
ON or OFF!? How Arab Students Perceive Using Webcams in Online Learning

Soheil Salha, Md. Saifuddin Khalid, Saida Affouneh, and Ahmed Tlili

Abstract The perceptions of students towards turning on their webcams during online learning are conflicting, where some of them support the idea while others are against it. Particularly, limited insights exist in the literature about how Arab students perceive turning on their webcams while learning. To cover this gap, the current study uses mixed methods to investigate how Arab students might perceive turning on their webcams while learning. The quantitative data were gathered by a questionnaire distributed over a sample of 1268 Arab university students, while the qualitative data were collected through open questions. The findings reveal that female students are more reluctant than male students to turn on their webcams. The results also reveal that personal and socio-cultural factors affected the decision of Arab students for turning off their webcams while learning. The findings of this study can contribute to the literature by providing insights about why Arab students might not turn their webcams on while learning, hence having a more comprehensive understanding about the factors that might impact students' behaviours (i.e., turning on or off their webcams).

Keywords Video cameras · Webcams · Distance learning · Online class · Higher education · Culture

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10.1 Introduction

10.1.1 Using Webcams in Online Learning

Digital cameras, also known as webcams, are increasingly being used in educational settings (Abu Bakar, 2021) as they can capture the dynamics of teaching and learning (Ortel-Cass et al., 2010). Using webcams is a great opportunity for both learners and teachers to be connected and seen by each other during online classes, hence have more authentic learning experience and feel like they are in a physical classroom (Gherhes et al., 2021). Due to their capacity of increasing 'virtual co-presence' in online classes, webcams received an enthusiastic acceptance and high interest from educational researchers and practitioners (Manstead et al., 2011; Van Merrienboer & Kester, 2005). For instance, German teachers prefer to keep their webcams open during online classes to make learners more immersed while learning, hence feel like they are in a classroom (Bedenlier et al., 2021). Other studies, from the socio-affective perspective, pointed out that webcams can make interlocutors psychologically feel that they are closer to each other, leading to a more natural interaction, hence better learning outcomes (Sun et al., 2022). Furthermore, non-verbal and visual information available via webcams may contribute to more relevant interactions between interlocutors. Develotte et al. (2010) further highlighted the importance of webcams in sharing the pedagogical range available to teachers and they valued the nonverbal dimension of pedagogical communication of using webcams during French language courses. Melgaard et al. (2022) reported that students tend to have their webcams off, causing a lack of participation and engagement.

However, with a few or no webcam turned on by students, the course instructors of higher educational institutions might be left without any visual feedback from the students, leading to less learning engagement (Khlaif et al., 2021). Multiple studies explored the reasons for students refusing to turn on their webcams and the experience of the course instructors. Sometimes, turning on the webcam contradicts students' culture. For instance, the students of Abu Dhabi University refused to turn on their webcams as it is impractical, violates their privacy and is insensitive to Islamic traditions (Sanderson, 2020). Far away from Abu Dhabi, Australian universities decided to use webcams to monitor students during exams. The decision was met with privacy concerns (The Guardian, 2020). In the aforementioned two cases, the issue of turning the webcam on or off is an issue of privacy concern and culture. The debate of turning on or off webcams in online learning continued and impacted even the online course regulations of some universities. For instance, in some Romanian universities, students who do not turn on their webcams are considered absent (Gherheș et al., 2021).

On the other hand, Lemelin (2021) urged the case of keeping webcams off during online learning, as instructors no longer receive nor have the opportunity to respond to students' body language, facial expressions, and general tone. Hosszu et al. (2022) mentioned the controversy regarding webcams as for some, the home is a backstage that could not be safely uncovered; for others, the home became a convenient front

stage for school. Yau et al. (2022) showed that students were more embarrassed than teachers for showing their faces on camera. Kozar (2016), on the other hand, pointed out the socio-affective and pedagogical benefits of using webcams in online meetings, despite the issue of privacy and negative attitude towards turning on webcams.

10.1.2 Research Gap and Study Significance

Learning occurs cognitively, behaviourally and socially (Clark, 2018). In line with this view, previous studies have shown that students' geographical regions, implying their cultural backgrounds, may affect their online learning behaviours (Tlili et al., 2021). With the divided findings about the perception of webcams in online education, it is seen that massive research has been conducted on this topic in different Western contexts like the USA (Castelli & Sarvary, 2021; Kozar, 2016; Rajab & Soheib, 2021; Handel et al., 2022), however, no research investigation about this topic, to the best of our knowledge, was in the Arab context, implying how Arab students perceive opening or not webcams in online learning. Norris and Inglehart (2003) pointed out that the main cultural gap between Arab and Western culture is gender equality, as Arab countries remain one of the most conservative societies in the world. Additionally, one feature related to Arab culture is a woman's constant concern regarding society's perception of her family or family name and honour (Tlili et al., 2021). Therefore, interacting with men, even in classrooms, has always been restricted in some Arab countries and, thus, has become a challenge. Therefore, this study complements the body of the literature by investigating how Arab students perceive webcams in online education. Specifically, it investigates how gender might influence the perception of Arab students towards opening their webcams while learning.

Additionally, the Arab region has suffered both economically and financially compared with the rest of the world. Consequently, Arab students are distributed with different backgrounds in terms of the acquired skills, technology and resources, depending on their location (city, village, camp, etc.). This study therefore further investigates if students' place of residence might impact their perceptions of using webcams in online learning. To sum up, this study answers the following research questions:

RQ1. What is the perception of Arab students towards using webcams in online learning?
RQ2. What is the impact of gender on Arab students' perception of using webcams in online learning?
RQ3. What is the impact of place of residence on Arab students' perception of using webcams in online learning?

Table 10.1 Sample distribution due to students' gender

Gender	Frequency	Percentage
Male	416	32.8
Female	852	67.2
Total	1268	100.0

Table 10.2 Sample distribution due to students' place of residence

Place of residence	Frequency	Percentage
City	638	50.3
Village	606	47.8
Camp	24	1.9
Total	1268	100.0

10.2 Methodology

10.2.1 Participants

The population of this study is all Arab students who participated voluntarily in this study by answering an online questionnaire distributed by the authors. They all had experiences in online learning due to the COVID-19 restrictions for the past two years. The data was collected in the second semester of the 2021–2022 academic year. The sample consisted of 1268 students. Table 10.1 presents the distribution of participants by gender, while Table 10.2 presents the distribution of participants by place of residence.

10.2.2 Data Collection and Analysis

The researchers collected the data obtained from the eLearning center of the University to analyse the frequency of students opening their webcams while learning online. To further validate the data collected from the eLearning center, a short survey was also distributed among students containing two questions regarding whether the students turned on/off their webcams and for how long they did turn on their webcams (if so).

Additionally, another online survey was distributed through the university's learning management system aiming to investigate why students decided or not to turn their webcams during the online learning. It consists of three parts: the first part is the demographic information of the student. The second part is the questionnaire related to opening or closing webcams in online learning. This questionnaire contains 12 items with a 5-point Likert scale graded as (1) strongly disagree; (2)

Table 10.3 The correlation coefficients between each item and the total score

Item	r	Item	r
1	0.323**	7	0.580**
2	0.291**	8	0.632**
3	0.147*	9	0.633**
4	0.549**	10	0.679**
5	0.712**	11	0.421**
6	0.676**	12	0.597**

** *Correlation is significant at the 0.01 level (2-tailed)*
* *Correlation is significant at the 0.05 level (2-tailed)*

disagree; (3) neither agree nor disagree; (4) agree; (5) strongly agree. The questionnaire items were adapted from previous research, including Gherhes et al. (2021) and Kozar (2016). The last part is an open question where the students elaborate about the reasons or views related to using or not their webcams in learning.

The validity of the questionnaire was checked by calculating the Pearson correlation coefficient (r) between the mean of each item and the total mean of its domain. Table 10.3 shows significant positive correlation coefficients between the questionnaire items and the total score. The correlation coefficients were strongly positive (Alpha = 0.01) with items (1–2, 4–12) and it was a positive correlation coefficient (Alpha = 0.05) with item (3). The reliability coefficient of the questionnaire was further calculated by Cronbach alpha and it was 0.730, which is considered good according to Taber (2018).

Finally, the questionnaire results were quantitatively (questionnaire part) and qualitatively (the open questions part) analysed. The goal was that the qualitative results might give further insights about the quantitative results, i.e., the reasons why Arab students did or did not choose to turn on their webcams while learning.

10.3 Results

10.3.1 What is the Perception of Arab Students Towards Using Webcams in Online Learning?

The analysis of the eLearning center data indicated that 76% of the students did not turn on their webcams during online learning. In line with this, the analysis of our short survey also revealed that 76.5% of the students did not turn on their webcams, and for those who turned it on, it was only for 15 min on average (within a course of one hour). Table 10.4 shows the students' reasons behind not turning on their webcams. The students' responses were grouped as agreement (options: strongly agree and agree combined), disagreement (options: disagree and strongly disagree combined), and neutral (neither agree nor disagree combined).

Table 10.4 Frequencies, means and standard deviations for the items of using webcam during online learning

Items (reasons)	Frequencies (%)			Mean	S.D
	Agreement	Disagreement	Neutral		
1. **Teachers don't ask** to open webcam	1085 (85.6)	103 (8.1)	80 (6.3)	4.33	1.00
2. I am **doing other works** while the webcam is closed	721 (56.8)	386 (30.4)	161 (12.7)	3.44	1.31
3. Opening the webcam **motivates** me to be in the meeting	572 (45.2)	514 (40.5)	182 (14.4)	3.14	1.41
4. I keep my **privacy** while the webcam is closed	1169 (92.2)	60 (4.8)	39 (3.1)	4.62	0.82
5. I **feel shy** to open the webcam in front of my teachers and colleagues	635 (50.0)	438 (34.5)	195 (15.4)	3.35	1.40
6. The **condition or space in my home** discourages me to open the webcam	774 (61.0)	243 (26.9)	152 (12.0)	3.64	1.38
7. Opening the webcam is **not a course or assessment requirement**	1086 (85.6)	64 (5.0)	118 (9.3)	4.41	0.90
8. My **family doesn't allow** me to open the webcam at home	409 (32.3)	594 (46.8)	265 (20.9)	2.89	1.41
9. I feel **comfortable** while the webcam is closed	1148 (90.5)	54 (4.3)	66 (5.2)	4.53	0.84
10. I **don't like my picture** when it appears on the webcam	653 (51.5)	389 (30.6)	226 (17.8)	3.43	1.39
11. Opening the **webcam is optional**	1067 (84.2)	94 (7.4)	107 (8.4)	4.33	1.01
12. Closing the **webcam relaxes me** from arranging my appearance	956 (75.4)	159 (12.5)	153 (12.1)	4.11	1.14
Total				3.85	0.60

Table 10.4 shows that the students kept their webcams off during online learning for several reasons: 85.6% because it was not a course requirement; 85.2% because the teacher did not ask them to turn on their webcams while learning; and, 84.2% because turning webcam on was optional. Additionally, 75.4% of the students stated that closing the webcam made them more relaxed as they did not have to worry about their look and appearance. On the other hand, more than 60% of the students expressed that their home condition or space discouraged them from turning on their webcams.

The open question results were further analysed (see Table 10.5) to collect more open views from the students about the reasons for not turning their webcams on during online learning. Table 10.5 shows that personal privacy (24%) was one of the main reasons in the personal factors theme with. Ethical consideration (21.9%) and video recording (21.9%) were also one of the main reasons in the sociocultural theme. The existence of children at home (28.6%) and the conservation of family (28.6%) were found to be the main reasons in the family factors theme. The low internet (40%) and the quality of webcam (35%) are the main reasons within the technical factors theme. Finally, within the theme of instructional factors, both subthemes teachers do not turn their own webcam on and distraction especially among females have the same value of (23.1%).

10.3.2 What is the Impact of Gender on Arab Students' Perception of Using Webcams in Online Learning?

Table 10.6 shows the impact of gender on Arab students' perception of turning on or off their webcams. It is seen that there is a significant statistical difference, implying that gender affects the perception of Arab students towards opening their webcams while learning. Particularly, female students were more reluctant to turn on their webcams while learning.

Chi-square test was further used to examine the differences between male and female students according to their responses (Agree, disagree, indifference), as shown in Table 10.7.

Table 10.7 indicates that items 1, 4, 5, 7, 8, 9, 10 and 12 are statistically significant, implying that each item's mean average was influenced by gender, specifically in favour of females. Females students were more caring about their privacy and they felt more shy than male students. They also had more restrictions from their parents compared to male students. Items 2, 3, 6 and 11 were not statistically significant and therefore not influenced by gender differences.

To support the findings related to gender, the authors classified the students' answers of the open question based on gender, as shown in Table 10.8. It is seen that personal, family and sociocultural factors are more important among female students, while male students cared more about technical factors.

Table 10.5 Students' stated reasons behind keeping webcams off during online learning

Theme	Definition	Sub-theme	Frequency (in theme)	Percentage (in theme) (%)	Example
Personal factors (37 responses = 31.9%)	Sets of preferences, values, and beliefs about oneself in relation to the surrounding environment (Remtulla, 2012)	Personal Privacy	9	24	*I am not turning my webcam on to sit freely and conformable in my room*
		Home privacy	4	10.8	
		Number of family members at home	5	13.5	
		The existence of other family members during online sessions	3	8.10	
		More comfortable	7	18.9	
		It's my choice	4	10.8	
		Listening is enough	2	5.40	
		Shyness	3	4.10	
Family factors (14 responses = 12.1%)	Family factors represent conditions and features of a family culture and environment that influence students thinking and development (Jankowska & Karwowski, 2019)	The appearance of a member of my family and he/she is not well addressed	2	14.2	*I am not alone in the room. My brother has online classes also*
		The existence of children at home. (They keep moving and are shown on a webcam)	4	28.6	
		My family members always shout as home (Their photos seem shouting)	2	14.2	
		The conservation of family	4	28.6	

(continued)

Table 10.5 (continued)

Theme	Definition	Sub-theme	Frequency (in theme)	Percentage (in theme) (%)	Example
		My sisters and brothers have their online meeting at the same part of the house	2	14.2	
Sociocultural factors: (32 responses = 27.6%)	Socio cultural factors are presented by social role, social network, values, and beliefs that contain gender segregation, safety, and privacy (Abed et al., 2022)	The meetings are recorded and if any social accident happens, it will be hard to cut or delete that accident	7	21.9	*I am always afraid that somebody is taking a photo of me, when I turn my webcam on*
		Thinking that other students may focus on my picture	5	15.6	
		The expectation of an unexpected situation	3	9.4	
		Religious restricts	6	18.8	
		Ethical consideration: You may find your photo in a post. Some students take a pic and make a sticker	7	21.9	
		Male students: Focus in female photos	2	6.3	
		Female students: A restricted appearance in front of teachers and students	2	6.3	

(continued)

Table 10.5 (continued)

Theme	Definition	Sub-theme	Frequency (in theme)	Percentage (in theme) (%)	Example
Technical factors: (20 responses = 17.2%)	*Technical factors* are factors that provide the physically immersive qualities of an experience (Sherman, & Craig, 2019)	The low of internet speed if the webcam is turned on	8	40.0	*The internet speed disabled me to turn webcam on*
		Internet disconnection	3	15.0	
		The quality of webcam photos	7	35.0	
		The webcam is not fixed	2	10.0	
Instructional factors: (13 responses = 11.2%)	Instructional factors are presented by quality of instructor, learning activities, and learning support, and the learners' perception (Lim & Morris, 2009)	Teachers should ask us to open the webcam before the meeting and not during it	2	15.4	*Once I turned my webcam on and I was distracted and confused even after I turned it off*
		Teachers do not turn their own webcam on	3	23.1	
		Distraction especially among females	3	23.1	
		Open webcam makes us more concentrative	2	15.4	
		There is no instruction to open a webcam and open webcam is not a part of assessment or a course requirement	2	15.4	

Table 10.6 T-test of preferences of types of learning due to gender

Gender	N	Mean	SD	t-value	D.F	p
Male	416	3.72	0.65	5.484	1266	0.0001*
Female	852	3.92	0.56			

Table 10.7 Chi square test to examine the frequencies of students' responses due to gender

Item	Gender	Agree	Disagree	Indifference	Chi square	*P*-value (* Sign)
1. Teachers don't ask to open webcam	Male	339	42	35	8.516	0.014*
	Female	746	61	45		
2. I am doing other works while the webcam is closed	Male	240	63	113	5.181	0.075
	Female	481	98	273		
3. Opening the webcam motivates me to be in the meeting	Male	206	58	152	5.182	0.075
	Female	366	124	362		
4. I keep my privacy while the webcam is closed	Male	363	17	36	23.817	0.0001***
	Female	806	22	24		
5. I feel shy to open the webcam in front of my teachers and colleagues	Male	143	79	194	61.947	0.0001***
	Female	492	119	244		
6. The condition or space in my home discourages me to open the webcam	Male	238	61	117	5.491	0.064
	Female	536	91	225		
7. Opening the webcam is not a course or assessment requirement	Male	339	51	26	8.827	0.012*
	Female	747	67	38		
8. My family doesn't allow me to open the webcam at home	Male	110	95	211	9.584	0.008**
	Female	299	170	383		
9. I feel comfortable while the webcam is closed	Male	354	29	33	25.358	0.0001***
	Female	794	37	21		
10. I don't like my picture when it appears on the webcam	Male	184	86	146	13.110	0.001***
	Female	469	140	243		
11. Opening the webcam is optional	Male	346	36	34	0.586	0.746
	Female	721	71	60		
12. Closing the webcam relaxes me from arranging my appearance	Male	289	62	65	11.713	0.003**
	Female	667	91	94		

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

Table 10.8 Frequencies of themes and subthemes due to gender

Theme	Subtheme	Male	Female	Example
Personal factors (37 responses = 31.9%)	Personal privacy	1	8	Female response: *"It's easy for males to turn their webcams on but females want to get addressed and to wear the scarf"* Male response: *Its laziness and I feel its time wasting to wear and organize the room*
	Home privacy	1	3	
	Number of family members at home	2	3	
	The existence of other family members during online sessions	0	3	
	More comfortable	2	5	
	It's my choice	1	3	
	Listening is enough	2	0	
	Shyness	0	3	
Family factors: (14 responses = 12.1%)	The appearance of a member of my family and he/she is not well addressed	2	0	
	The existence of children at home. They keep moving and are shown on a webcam	0	4	
	My family members always shout as home (Their photos seem shouting)	2	0	
	The conservation of family	0	4	
	My sisters and brothers have their online meeting at the same part of the house	1	1	
Socio cultural factors: (32 responses = 27.6%)	The meetings are recorded and if any social accident happens, it will be hard to cut or delete that accident	2	5	
	Thinking that other students may focus on my picture	4	1	
	The expectation of an unexpected situation	2	1	
	Religious restricts	0	6	
	Ethical consideration: You may find your photo in a post. Some students take a pic and make a sticker	5	2	
	Male students: Focus in female photos	2	0	
	Female students: A restricted appearance in front of teachers and students	0	2	

(continued)

Table 10.8 (continued)

Theme	Subtheme	Male	Female	Example
Technical factors: (20 responses = 17.2%)	The low of internet speed if the webcam is open	7	1	
	Internet disconnection	3	0	
	The quality of webcam photos	8	0	
	The webcam is not fixed	2	0	
Instructional factors:(13 responses = 11.2%)	Teachers should ask us to open the webcam before the meeting and not during it	2	0	
	Teachers do not open their own webcam	2	1	
	Distraction especially among females	2	1	
	Open webcam makes us more concentrative	2	0	
	There is no instruction to open a webcam and open webcam is not a part of assessment or a course requirement	1	1	

10.3.3 What is the Impact of Place of Residence on Arab Students' Perception of Using Webcams in Online Learning?

Table 10.9 shows the result of One Way ANOVA, which investigates if there is any statistically significant difference in the means of using webcam in online learning due to place of residence (i.e., city, village, and camp). The obtained results showed that the place of residence does not have a significant impact ($p = 0.24 > 0.05$) on Arab students' perception of opening or not their webcams during learning.

Table 10.9 One way ANOVA of using webcam in online learning due to place of residence

Source of variance	S.S	D.F	M.S	F	P
Between groups	1.011	2	0.505	1.414	0.24
Within groups	451.996	1265	0.357		
Total	453.007	1267			

10.4 Discussion and Conclusion

Turning webcams on is a practice that could get students and teachers closer in a virtual learning environment. It generates more engagement, interaction and social communication. Despite those advantages, this study revealed that Arab students tended to turn off their webcams during online classes because turning on webcams is optional and not a course requirement. Additionally, the teachers did not require them to do so. Therefore, someone might ask if turning on webcams should be mandatory in Arab universities to enable more student–teacher interaction. The obtained results further revealed that privacy was a big concern for Arab students. This further shed light again on university policies, in terms whether there should be a policy about turning webcams on for some specific courses, and the privacy regulations applied to protect students' video recording.

When analysing the gender impact, female students were more hesitant to turn on their webcams due to several socio-cultural factors. For instance, several Arab female students revealed that they did not turn on their webcams because their families are very conservative or because of some religious restrictions. In this context, Tlili et al. (2021) stated that one feature related to Arab culture is a woman's constant concern regarding society's perception of her family or family name and honour, and this was reflected in the female students' behaviours of turning on their webcams. Moreover, female students won't turn their webcams on unless they prepare themselves well in terms of the appearance and the surrounding environment. Mostly, female students turn their webcams only if it is mandatory and for few minutes. It is one of the practices for female students to keep their privacy as they are very concerned about showing their faces, especially in the Arabic culture (Hurely, 2020). The culture which is framed by religion, social custom and ethics (Sanderson, 2020). In this context, Tlili et al. (2021) showed that culture has a big impact on shaping students' behaviours in online learning.

Finally, this study did not find any significant difference in terms of the impact of place of residence on Arab students' perception of turning on their webcams. This result is against the findings of Hosszu et al. (2022) who found that poor and rural areas of students impact their perceptions of turning on their webcams.

Despite the solid ground of this study, it has some limitations that should be acknowledged and further researched. For instance, the data was collected from only one country Palestine, therefore, future research should involve more Arab students from other Arabic countries too so that the results could be generalized.

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Chapter 11
A Comparison Between Law and Shareea Faculties Experiences in Elearning During the Pandemic

Saida Affouneh, Jamal Kilani, Naeem Salameh, Soheil Salha, and Arij Abu Obaid

Abstract This study aimed at comparing between the Law and Shareea faculties in elearning during the Pandemic. The data was collected through a closed interview with faculty members of each faculty. It was found that the two faculties are new to elearning and have many challenges running online classes but they were able to overcome some of the challenges through continuous professional development programs. The faculty members were interested in the training, but expect that they should be involved in assessing their needs. The researchers recommended developing the infrastructure of each faculty and improving the skills of the faculties.

Keywords Elearning · Pandemic · Covid-19 · Capacity building

11.1 Introduction

The pandemic has affected all aspects of life around the world. The education system was well affected and in March 2020 and a result of that all educational institutions were closed. Higher education institutions in Palestine closed without stopping teaching and learning and An Najah National University such as any Palestinian

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university was one of the universities that shifted online teaching directly (Affouneh et al., 2021).

An and Zakaria (2022) clarified that teachers were asked urgently to acquire updated teaching strategies related to online teaching, in order to create effective virtual learning. They had to prepare and deliver their classes from home, while they were facing many challenges as pedagogical approaches, subject content areas, lesson pacing, interaction models, and assessment methods in the absence of proper technical support (DeCoito & Estaiteyeh, 2022; Rapanta et al., 2020). Despite of these challenges, Daniel (2020) stated that instructors should take advantage of online teaching to engage students and facilitate their progress to study demands.

As their peers around the world, instructors at An Najah University are trained on numerous teaching competencies such as instructional design, teaching and learning and assessment in online environments. These instructors could be classified to three main categories regarding their knowledge, skills and motivation towards using technology, the first is the young generation who easily moved to online teaching, the second one is the motivated instructors with low digital competencies, while the third category are instructors who resisted against the transformation and lack digital skills (Affouneh & Salha, 2021).

The study aims at comparing the two faculties, and documenting their experience in elearning during the pandemic; and also derive best practices in order to generalize it to other faculties.

Review of literature:

11.1.1. **During the pandemic, universities considered online learning as the strategy of education.** Kim (2020) **presented online learning as an educational process which takes place over the Internet as a form of distance education, while** Ntsiful et al. (2022) **defined online teaching as the remotely sharing of knowledge and instructional materials with students through digital devices such as computers, tablets, smartphones, and with the help of the internet.**

Instructors experiences in online delivery of instruction are areas that lead to quality Online Education (Capacio et al., 2021) and their skills in online teaching and learning using educational tools are significant factors affecting their experiences (Darling-Hammond & Hyler, 2020). This unfamiliar mixture of experience and skills generated some challenges in online teaching through the pandemic, Dhawan (2020) said that these challenges associated with modern technology range from downloading errors, problems with installation, login issues, difficulties in fixing audio and video.

Kulal and Nayak (2020) found that teachers are facing problems in conducting online classes due to a lack of proper training and development for doing online classes and technical problem that damaged the effectiveness of the online classes.

Liu et al. (2021) concluded that instructors were confronted with two major challenges. The first was to integrate instructional design principles into planning their online courses and then teach them online.

11.2 Methodology

The researchers used a quantitative approach by developing a special tool which is the open structured questionnaire, the questionnaire was validated and distributed to 4 evaluators to assess it and get their feedback on its trustworthiness and validity. Comments were considered and then the tool was finalized. The questionnaire was distributed to all faculty members in the two schools. The questionnaire consists of 8 open questions that asked about the faculty members' attitudes, skills, experience, professional developments, challenges, and future insights.

11.3 Sampling

35 teachers completed the questionnaire were 17 of them from the faculty of law and 18 from faculty of Shareea. More than 80% of the teachers participated in the survey from each faculty.

11.4 Analysis

The content analysis method was used to analyse the collected data through a well-structured matrix, then four themes were derived from the data, and then the finding was categorized accordingly.

11.5 Results

The two faculties were shocked with the rapid shift into online learning during the pandemic not just because of the shift itself; but because they have a few previous experiences in online learning while other faculties have been practicing blended learning for several years. Many of the teachers have long years of experience in rote learning and face-to-face teaching and have no interest in changing their teaching strategies. They have negative attitudes towards online learning and lack the required skills needed to practice online teaching. Only 10% of the teachers have been trained on at least one tool for online learning before the Pandemic. After the pandemic, they decided to find a quick solution in order to survive their jobs and continue their teaching.

The collected data were categorized into four main themes which are Knowledge, attitudes, and skills; Professional development for faculty; Challenges and solutions; and Future policy and insights. Each theme will be discussed according to the similarities and differences between the two faculties.

Theme1: knowledge, attitudes, and skills

Both faculties have no previous knowledge in eLearning before the pandemic and had negative attitudes towards eLearning and prefer to teach face-to-face for several reasons. There were no courses designed online before the pandemic in the faculty of law, while there were three courses in the faculty of shareea. All of them were scared of the new experience but at the same time, they had the passion to try and get trained.

Nearly 70% of faculty members at Shareea have no previous experience in eLearning while 90% of faculty of law, their attitudes were negative but after the pandemic and their experience in eLearning their attitudes start to move positively and they ask for technical support and training courses.

Themes2: professional development for faculty

Despite the fact that both faculties have little knowledge and nearly no skills for eLearning but they were willing to learn. The two faculties' members refused to set for online training during the pandemic and request to get the training face-to-face despite the closure. This was not the general case since all other faculties get the training online through ZOOM and Moodle. Some of them asked for one-to-one training so no one can assess their skills and asked several questions without being judged by others.

They sent a request for eLearning centre to train them for several days and they got more than 40 training hours in order to get the basic skills and they were ready to move forward. Technical support was given through telephone calls and personal meetings despite of the pandemic and the closure. Many mistakes were done and continuous feedback was given to them on daily basis. 100% of faculty members took the training courses and more than 80% got one-to-one support daily for the first semester 2020–2021.

The faculty of law set for several types of training such as introduction to Moodle and zoom, best practices in eLearning, and ethics of using online tools while the faculty of Shareea asked only introductory courses in order to survive their teaching.

The teachers from the faculty of shareea were able to conduct their courses through ZOOM but they refused to open the Camera and they were conducting rote teaching. Some of them who have long years of experience in teaching were unable to learn and the eLearning centre trained a member of his family from the young generation such as his daughter or son in order to follow up with him. This experience was unique and gave a good impact and confidence for old teachers. Most teachers request to continue their training after the pandemic on advance courses and future skills and are now able to design their courses online and consider them as one of the success stories. One of the courses that as designed is a university general course titled Islamic culture which was designed online for all students as an introductory course. The course is considered as one of the best courses by the evaluation committee.

Theme3: challenges and solutions

Many challenges have faced both faculties with different percentages, the highest challenge was the infrastructure since many of them, they were unready for the shift and have rarely used computers before and many of them didn't have a computer to use and they tried to use their mobiles to conduct their online teaching which causes more problems since they don't have flexibility.

Teachers talked about the lack of interaction with students and this is related not only to the students' desire but also to the remote teaching that was delivered by the teachers themselves. Students prefer to listen to the recording rather than attend classes on time and that affects the teachers' efficiency and motivation to design informative interactive lessons.

Faculty of law adapt their teaching to the online design quicker than faculty of shareea but still, they lack skills for online class management and they faced many cyber violations to their accounts from active students. They asked for support from eLearning centre and they were given a special workshop for increasing their safety and security online through new safety tools and utility and better control of ZOOM design.

The faculty of law refused the idea of designing a question- bank in order to assess their students' work and thinks of that as a time-consuming task for no need, while the faculty of Shareea was happy to do it without any resistance.

All faculties asked for more training and support from eLearning centre, they also asked for a manual for course design and security. Faculty of Law decided to continue teaching online in blended mode while Shareea decided to go back to Face to face teaching.

Theme4: future policy and insights

Both faculties recommend getting future training and to assign a person for technical support in their faculties for eLearning. They also recommend Blended learning more than online learning since they can have the benefits of both face-to-face and online learning. They also recommend having all exams online since it is easier for the teachers but inside the campus which means computerized exams.

11.6 Discussions

Before the pandemic, the two faculties had no experience in eLearning and they faced the shift with fear and determination. Both set for training but they were scared of being emerged with other faculties in online training and asked for face-to-face training each one by itself. This could be explained that they were unconfident about their knowledge and skills but at the same time refused to learn in the same environment that they were going to teach in. The eLearning centre accepted their hidden resistance and worked with them in two methods one is through training on campus and the other through one-to-one support. Their skills have been improved

and their knowledge was expanded but not to a high level. They were just as much as needed to run their classes in a basic level. The reason for that was related either to their age or to their ignorance in this strategy. The infrastructure of the two faculties was very low and needed to upgrade it but this didn't affect the elearning at that time since everyone was working from home.

Using zoom was restricted to rote lecturing and teachers at the faculty of Shareea refused to open the camera and used oral teaching as their strategy, so many students didn't attend online classes and depended on recorded lectures for studying. This was due to religious reasons or social aspects since most of the students were female in the faculty of Shareea while this was not the case in the Law. Females in general refused to open the camera for several reasons but mainly for social ones.

Both faculties prefer online exams but resist building a question bank, the Shareea faculty members agreed only to do it for the Islamic culture course which was well-designed and accessed by thousands of students. They both found it easier to conduct online exams since it saves time and effort.

Although 60% of the law faculty members recommend the continuity of elearning, while 80% of Shareea did so, they both believe of face-to-face learning is their best choice and recommend blended learning for some courses. They look forward to future training and capacity building, especially in computerized exams and other types of assessment.

We can conclude that the experience of human studied faculties in online learning is full of challenges and needs more effort in order to improve it.

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