

An Exploration of EFL Teachers' Perceptions of Using Game-Based Learning Tools in Virtual Classes in a Saudi Primary School Context

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Abstract—The recent trend towards digitization in education sectors, driven by the growing demand for more personalized learning, the health pandemic crisis, and the need to improve accessibility to diverse pedagogies, has transformed approaches to teaching. Specifically, the creation of digital game-based learning (DGBL) in recent years has led to an increased appreciation of the potential offered by digitization and the new trends toward gamified and virtual learning. This study explores the benefits of and challenges associated with learning gamification, as well as EFL teachers' perceptions of using gamification tools in five primary schools in Al-Qunfudhah school district, Saudi Arabia. The study employed a qualitative design to obtain comprehensive data. Non-probabilistic purposive sampling was used to recruit a representative sample comprising five EFL teachers (N=5) from different primary schools. Furthermore, the study performed semi-structured interviews (SSIs) with participants to acquire in-depth insights based on their perceptions and experiences with DGBL. A thematic analysis (TA) was chosen as the primary strategy for analyzing qualitative data and coding participants' insights into key themes and sub-themes. Overall, statistical measures indicated that many EFL primary school teachers in Al-Qunfudhah had effective technological awareness. Given the positive perception of DGBL, the study suggests that EFL teachers are able to integrate DGBL strategies to facilitate virtual learning, improve student-teacher engagement, increase time efficiency, and support language development.

Index Terms—DGBL, educational technology, EFL teachers, Saudi teachers' perceptions

I. INTRODUCTION

Social networking and digital gaming have become widespread in the modern era. Many individuals, regardless of gender, age, and culture, actively use digital gaming and social media networks. Digital Game-Based Learning (DGBL) refers to the use of computer games as an educational tool. Hwa (2018) defines DGBL as a smart instructional learning approach that uses computerized games to engage learners, enabling them to easily gain competencies, knowledge, and skills. This definition is consistent with Chang and Hwang's (2019) description of DGBL as an advanced or improved learning system that offers activities that enable students to engage in problem-solving tasks by incorporating educational subjects or learning models into digital games.

Recently, teachers have given more attention to innovative technologies, specifically DGBL tools, examining the potential offered by these innovations in promoting contextualized learning. Tokarieva et al. (2019) note that the adoption of digital games and their acceptance as part of formal curricula are largely based on their perceived educational value and success in countering assertions that video games are more suitable for leisure purposes than instruction.

Prominent cases of successful DGBL implementation may be drawn from Saudi Arabia's education system, where different schools have embraced interactive learning tools such as the Madrasati platform to improve student engagement and transform the teaching and learning experience for teachers and learners on various levels. The enforcement of widespread lockdowns, leading to the temporary closure of schools during the COVID-19 pandemic, increased pressure on policymakers, teachers, and other stakeholders in the Saudi Ministry of Education to develop a distance-learning platform to protect students from health risks and avoid the unprecedented adverse effects of disrupted learning (Almaiah et al., 2022). In response to these needs, the Saudi Ministry of Education designed a learning management system, namely the Madrasati platform, enabling schools to continue teaching through a virtual learning model to prevent academic loss (Almaiah et al., 2022).

Recent studies have explored technological development, digitization trends, and their implications for education. However, despite the increase in research on digitization, academic studies on DGBL and its impact on virtual learning

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at primary school levels in Al-Qunfudhah are lacking. Alsuhaymi and Alzebidi (2019) investigated Saudi computer teachers' perceptions and attitudes toward video game teaching and anticipated barriers toward its successful deployment. The study found that computer teachers in Saudi Arabia had a positive attitude toward video game integration and anticipated the benefits of applying gaming beyond leisure to transform teaching processes. In terms of adoption barriers, the study highlighted the absence of facilitating conditions, technology biases, and low awareness of the positive aspects of gamified learning and the application of DGBL tools in formal Saudi curricula (Alsuhaymi & Alzebidi, 2019). While the study obtained valuable data on teachers' perceptions of learning gamification in general, it focused exclusively on Saudi computer teachers and limited data collection to the Eastern Province of Saudi Arabia. There is thus a compelling need to extend this research to other areas of Saudi Arabia and cover insights from other teachers, including EFL teachers in primary school environments.

Using DGBL in virtual classes at primary school levels in Saudi Arabia, particularly in Al-Qunfudhah, has not been widely explored in the literature. Therefore, the present study offers a comprehensive exploration of how virtual learning has enhanced classroom experiences for teachers and learners. Specifically, the study focuses on EFL teachers' perceptions of DGBL and its deployment in virtual classes, identifying key benefits, significant opportunities, perceived barriers to successful implementation, and existing educational technology development and usage gaps. By undertaking qualitative research, this study intends to achieve the following objectives:

1. To investigate the benefits of DGBL by examining its impacts on virtual learning in primary school classrooms in Al-Qunfudhah, Saudi Arabia.
2. To identify the challenges associated with DGBL adoption based on EFL teachers' perceptions.
3. To identify gaps in the placement and integration of educational technology to facilitate game-based learning for primary school students in Al-Qunfudhah.

Research Questions

The study seeks to respond to the following research questions:

1. What are the benefits and challenges associated with incorporating game-based learning tools in virtual classes for Saudi EFL learners at primary levels in Al-Qunfudhah to support virtual teaching?
2. How do EFL teachers perceive game-based tools and their significance for virtual learning in Al-Qunfudhah's primary schools?

II. LITERATURE REVIEW

Game-based learning is not a new concept, and its genesis may be traced back to puzzles used by teachers to stimulate creative thinking in conventional classroom pedagogy. However, this framework has gained traction in non-recreational environments, with many educational scholars and instructional designers expressing appreciation of the potential attributed to digital games for commercial classroom teaching (Alam, 2022). The impact of commercial gaming has drawn teachers' attention to how they are able to use the enormous potential of digital games to increase the efficiency of student learning in modern classroom environments. Aprea and Ifenthaler (2021) link game-based learning tools to improved educational experiences, including providing immersive learning, enabling student-object interactions, stimulating creativity, and enhancing academic outcomes by allowing students to connect and interact with recognizable structures and previously studied materials. Over recent years, the extension of digital gaming concepts and their application in education has led to controversy, increasing the pressure on scholars to explore the consequences of gamified learning and its potential impact on classroom instruction at all school levels (Charlier & De Fraine, 2012). Charlier and De Fraine's study stresses the need to consider the environment in which game-based tools are used and the expected value of such technological innovations. Fletcher (1971) conveys the idea that gaming may considerably affect an individual's sense of control of the specific environment in which they are situated, highlighting a need to consider environmental characteristics while designing education games to make them more effective and convenient for teachers looking to solve various teaching problems.

Exposure to interactive learning through DGBL tools promotes efficacy and results in significant pedagogical achievement, as these tools allow teachers to achieve high engagement with digital native students and focus on specific educational goals. Researchers have mentioned the application of advanced game-based learning tools such as virtual reality (VR) and augmented reality (AR) as innovations that will unlock new possibilities and radically change how schools integrate full-scale commercial games to adjust to the changing requirements of contemporary learners (Liu et al., 2022). According to Hartt et al. (2020), active learning methodologies such as digital gaming provide access to pedagogical processes and engaging content, stimulating learners' cognitive abilities and presenting opportunities for deep learning. The authors describe DGBL as an active learning approach that employs innovative strategies such as gamefulness, aesthetics, gameful interaction, and specially designed digital content to foster student engagement with the curriculum, induce internal learning motivation, and enhance educational outcomes (Hartt et al., 2020). Overall, these empirical studies highlight the prominence of DGBL strategies in enhancing students' academic performance, increasing learning motivation, furthering engagement, and inducing competence during instructional processes.

Compared to less interactive traditional pedagogies, DGBL has proven more effective in promoting foreign language development in EFL contexts. The method has been employed in China to help students develop their English language skills. Wang and Han (2021) examined the effectiveness of Liulishuo, a mobile phone-based DGBL application, on

English monologic oral production in a sample population comprising Chinese English learners. The research linked game-based learning to improved oral production, indicating the effectiveness of these tools in linguistic knowledge development, as evidenced by improvements in English language fluency, diversity of vocabulary, lexical density, and accuracy among Chinese students. An analysis of the use of digital games in EFL learning among young Indonesian students by Mahayanti et al. (2020) also highlighted the value of these technologies in facilitating self-regulated language learning. Interacting with language learning games allows young students to automatically and unconsciously acquire important elements such as emotional motivation, metacognition, engagement, and strategic actions (Mahayanti et al., 2020). These elements make learning interactive and engaging, positively affecting the language learning process. Furthermore, other studies have examined the effectiveness and scope of the application of DGBL tools in transforming teaching, enhancing students' learning experiences, and promoting second language acquisition in school environments (Azman & Dollsaid, 2018; Yacob & Yunus, 2019). Azman and Dollsaid (2018) investigated the extent to which digital gaming has been incorporated in educational contexts. On the other hand, Vogt (2018) concentrated on the motivational factors affecting the acceptance and usage of game-based tools to enhance learning engagement and drive positive outcomes. Overall, the findings of these studies support the value of DGBL and its positive effects on second language acquisition.

The pedagogic benefits of digital games in educational environments have been extensively studied and widely documented. Given increased interactions with instructional content in a simulated learning environment, many students are likely to develop and maintain a strong interest in and involvement in instructional processes, increasing the odds for better academic outcomes (Aldossry, 2021; Anastasiadis et al., 2018; Chiang, 2020). However, some students' and teachers' accounts of the impacts of learning gamification reveal that certain aspects of DGBL could cause distraction, reducing its effectiveness in interactive classrooms (Admiraal et al., 2011; Khan et al., 2017). Despite the significant risk of student distraction in simulated learning environments, DGBL incorporates unique elements that make learning an enjoyable, highly interactive, stimulating, and immersive experience (Admiraal et al., 2011; Foster & Shah, 2020). A qualitative review analyzing second language (L2) teachers' perceptions of the application and benefits of educational games revealed that this technology establishes an instructional support tool that has transformed how teachers and students interact (Demirbilek et al., 2010). Furthermore, Ebrahimzadeh and Alavi (2016) contend that the interactive and gameful features of DGBL eliminate boredom, motivate learning engagement, and facilitate students' access to key pedagogical elements.

Beyond the discussions of the benefits of learning gamification, the shift to this educational paradigm could pose significant risks, which may affect the adoption of DGBL and its approval as a part of mainstream school curricula. As noted by Khan et al. (2017), exposure to learning distraction and excessive indulgence in frivolous details of educational games may affect the quality of learning, particularly in primary schools, where students are still developing behaviors such as self-control and individual motivation.

As such, the impact of simulated learning environments may be to produce problem behaviors and antisocial tendencies, such as gaming addiction, reduced socialization, and declining academic outcomes, rather than to deliver the intended educational objectives (Sabourin & Lester, 2013). Attard (2013) suggests that students are more likely to spend their time playing with the enjoyable aspects of digital games rather than interacting with the educational content, impeding the true purpose of these technologies.

III. METHODOLOGY

A qualitative design coupled with a descriptive phenomenological approach was identified as the most appropriate methodology for conducting a comprehensive analysis and developing a theory around EFL teachers' perspectives regarding DGBL use in five different primary schools across five villages in Al-Qunfudhah. A qualitative design enables flexibility in deciding which study methods to use to ensure the credibility, reliability, and dependability of results (Johnson et al., 2020). Consistent with the qualitative design, the study employed semi-structured interviews (SSIs) as the primary research instrument to facilitate a qualitative inquiry and provide extensive insights into the observed phenomenon. The interview provided a demanding, flexible, and powerful method for obtaining EFL teachers' perceptions by exploring the behavior, experiences, attitudes, and opinions presented by the participants in the selected sample.

A. Participants

This study employed non-probabilistic purposive sampling and selected five female EFL teachers from various primary schools in Al-Qunfudhah. The teachers shared Arabic as their native language and held certifications qualifying them to teach primary school students in Saudi Arabia. Furthermore, these teachers had experience in digital game-based English teaching for primary school students.

Using a purposive sampling strategy, the study sought to recruit participants who were aligned with the main aims and purpose of the study. A purposive strategy provides a means to identify and enrol participants who are familiar with the study requirements and more likely to share meaningful experiences and offer research-relevant information without constraining available research resources (Campbell et al., 2020).

Before embarking on data collection, participants were provided with a consent form, which conveyed details about the study, its purpose, significance, and potential consequences. The study maintained high sensitivity to research ethics, such as guaranteeing confidentiality and strengthening participants' anonymity. Given these considerations, the study used unique pseudonyms (P1, P2, P3, P4, and P5) to identify the participants without revealing any identifying information, which effectively protected participants from unforeseen circumstances and vulnerability related to their voluntary involvement in the study.

B. Instruments

The study used a semi-structured interview (SSI) that adapted subject-relevant questions from a research instrument proposed by Vogt (2018) in *Middle school teachers' use and perceptions of digital game-based learning*. The interview was comprised of four parts, which combined 16 questions investigating participants' lived experiences and perceptions of using DGBL in their online classes. The first part focused on teachers' demographic information, while the second part examined DGBL uses and experiences in Al-Qunfudhah primary schools to support virtual teaching. In the third part, the interview questions investigated the positive and negative aspects of gamified teaching. The final part required the respondents to share ideas and convey their perceptions of DGBL tools.

C. Procedures

Before commencing data collection, participants were asked to schedule a day and time that would be convenient for both parties to avoid creating unwelcome issues, such as unexpected delays or finding the interviewee unprepared. The study relied on two approaches to data collection: engaging the respondents through in-person meetings in selected venues and making telephone calls to those who preferred virtual interviews. The interviews were conducted in a quiet venue, free from external interference and disruptions. After completing the interviews, the next step was transcribing interview data and inspecting different responses to establish validity and determine completeness.

D. Data Analysis

For the qualitative analysis, the study relied on a thematic analysis (TA) as the primary analytical strategy to generate data codes, develop categories, uncover emergent themes, and establish important relationships among multiple variables. When using this method, the effectiveness of a TA depends on the extent to which the transcribed data may be analyzed descriptively and inductively to generate codes or theories from participant responses (Finlay, 2021). Therefore, the analysis focused on obtaining codes from EFL teachers' perceptions and experiences of digital gaming and its relevance to in primary school curricula in Al-Qunfudhah.

When performing a TA, the study should maintain an objective stance while describing or reporting participants' subjective perceptions, experiences, and positions on DGBL. Objectivity provides a means of eliminating unconscious bias, which may result in distorted results, erode the validity of empirical evidence, and delay the emergence of perceptions of educational games in EFL learning contexts (Finlay, 2021). The coding process generally involves uncovering patterns from transcribed information and developing codes or preliminary conclusions. Subsequently, the TA focuses on establishing themes by linking different codes depending on how adequately they align with the study aims and stated research questions. Finally, the study employed NVivo software to develop a codebook and produce project maps to connect the identified themes with the primary research questions.

IV. RESULTS

Following a data-driven TA, the qualitative evaluation uncovered key themes based on common data codes developed from EFL teachers' perceptions of and experiences with digital gaming in virtual primary school classrooms across Al-Qunfudhah. Emergent themes from an inductive TA of the five transcriptions revealed the following aspects and concepts relating to how the participants perceived and experienced digital gaming in primary school virtual EFL classrooms:

1. Differences in EFL teachers' demographics;
2. Experiences using digital games in virtual classrooms;
3. Perceptions of the benefits of using digital games in the virtual classroom;
4. Perceptions of the challenges associated with using digital games in the virtual classroom; and
5. Perceived impacts of incorporating digital games in the virtual classroom.

A. Demographics

An evaluation of the participants' demographic profiles presents variations in their teaching experience, knowledge about digital gaming, and the number of years they have been using digital game-based teaching. The digital game-based teaching experience reported by the five participants ranged between five and 18 years. However, the majority confirmed not having real experience with DGBL until the Ministry of Education implemented the Madrasati platform during the COVID-19 pandemic. According to a statement made by P2,

We did not really give virtual classes before the pandemic, and I tried virtual class games for the first time following the lockdown in 2020.

Similarly, another EFL teacher (P1) reported having six years of digital game-based teaching experience but started delivering virtual classes during the pandemic:

I've been using games in my classes for about six years, but online games, since I started giving virtual classes.

On the other hand, two other EFL teachers reported using digital game-based teaching for less than one year, with one stating that they were still familiarizing themselves with the technology. Four participants reported learning about digital gaming after seeing a colleague train learner in a model lesson. However, P3 maintained that they knew about digital gaming before the introduction of the Madrasati platform but used it for the first-time during lockdown. When asked about how they first learned about digital gaming, P3 stated the following:

I've been using it for a long time, but I tried it first around the time of the lockdown when the classes were online in the Teams application provided by Madrasati.

In terms of frequency of teaching through digital game-based classes, the responses varied from weekly (P2) to not very often (P4). One EFL teacher reported that they used digital gaming for icebreaking purposes (P1), whereas others employed these instructional strategies depending on lesson type (P1) or a need basis (P3).

TABLE 1
PARTICIPANT DEMOGRAPHICS

Demographics	Particulars	Frequency	Quotes from the Interviews
Experience as primary school teacher	12 years	1	12 years (P2)
	18 years	1	18 years (P1)
	Five years	1	Five years (P1)
	Six years	1	This is my sixth year (P3)
	Nine years	1	Nine years (P4)

B. Experiences Using Digital Games in Virtual Classrooms

Based on participants' accounts, many EFL teachers maintained a positive perspective on their experiences of teaching in virtual classroom environments using digital game-based applications. Discussing the type of games provided to students in the virtual learning environment, one participant (P1) made the following comment:

The technology made it easier for teachers to draw on a virtual whiteboard, eliminating challenges encountered in conventional classrooms, including the wastage of educational resources (P1).

The same participant stated that, compared to traditional pedagogy,

Digital gaming has proven more effective in producing the required student engagement, making it more effective and superior in contemporary EFL learning contexts (P1).

Another teacher (P5) noted that,

With learning gamification, students devised novel ways to navigate learning challenges, for example, in situations where they do not know what drawings to make to match different texts.

Digital game-based tools such as puzzle games, PowerPoint games, and tic-tac-toe have embedded features that allow students to solve complex problems, enhancing their problem-solving capabilities. Some participants recommended engaging students in solving difficult puzzles as part of icebreaker activities to harness problem-solving skills. As P1 stated,

A puzzle or finding a hidden object game at the beginning of the lesson can be used as an icebreaker to incorporate digital games in the virtual classroom.

The SSIs revealed different ways in which EFL teachers from various primary schools in Al-Qunfudhah integrate digital games to support blended or virtual learning in modern classrooms. According to a response by P1,

I mainly use digital games at the beginning of lessons to introduce students to relevant concepts, as they can have a significant effect on learning motivation and participation.

Another participant (P3) underscored the value of digital gaming in the following ways:

Reducing boredom and increasing students' attention and concentration by providing opportunities for interactive and joyful learning.

In ice-breaking activities, digital games result in greater student engagement and positive experiences, leading to improved learning outcomes.

In terms of content areas preferred for delivery through digital game-based instructional approaches, the participants provided different responses, with PowerPoint games, speaking activities, and grammar exercises representing the most widely mentioned areas. As stated by one participant:

Digital games remain an indispensable component of the second language learning process, providing a way to introduce Arabic students to grammar exercises, linguistic content, and diverse English vocabulary (P2).

When deciding whether a game is able to provide the required fit and respond to specific learning needs, teachers focus on diverse aspects of their target EFL students, learning environments, and existing pedagogical standards. P1 and P3 described important sub-themes, such as the requirements for an engaging learning experience, lesson objectives, intended educational value, anticipated student skills, existing lesson plans, learning engagement, and the need to keep students on the right track, as critical factors that affect the choice of digital game for instructional purposes. On the

other hand, P4 stressed the following:

There is a need to adopt educational games that offer the required access to virtual learning features, incorporate enjoyment, fairness, and safety aspects, and have proven effectiveness in EFL classroom contexts.

Another construct examined through semi-structured interviews with the EFL teachers was the class attitude when delivering instruction through DGBL approaches. One participant (P3) stated that,

Despite my limited experience with educational digital games, I have observed improvements in classroom outlook since [using] the Teams application and Madrasati platform, with young learners showing greater excitement and increased learning motivation.

Technology has led to remarkable improvements in classroom participation, learning enjoyment, excitement, and student engagement with instructional processes.

C. Perceptions of the Benefits of Using Digital Games in the Virtual Classroom

(a). Increased Learning Engagement and Motivation

Based on a qualitative analysis of EFL teachers' perspectives and lived experiences, central themes emerged regarding the benefits of DGBL implementation in virtual classrooms. Different participants discussed the value of digital gaming in promoting students' engagement and motivation, leading to augmented learning outcomes and higher educational achievement. One teacher stated the following:

Newer generations see technology as an integral part of their lives, and using digital games may enable teachers to engage students who struggle to focus on lessons, especially since it is an online class and there is no eye contact with the students, which is a very important part of teaching (P5).

Digital gaming presents important opportunities for EFL teachers to design and deliver personalized pedagogies, increasing students' engagement and motivation toward learning. Another participant, P3, stated the following:

Digital games are more real and, therefore, more enjoyable and relevant to learners. These games provide a virtually enhanced world that encourages learners to use their imagination and discover new possibilities in a fun, interactive way.

Generally, digital games are more appropriate for addressing the instructional needs of primary school students.

(b). Enhanced Learning Experience

The majority of the EFL teachers associated DGBL approaches with enriched learning experiences, primarily by exposing students to tailored digital instruction and materials. One teacher (P1) stated that educational games help primary school students build relevant skills and knowledge needed for successful second language acquisition. Furthermore, P3 stated the following:

Digital games encourage the development of new digital strategies essential for students' learning experience.

Furthermore, game-based learning techniques stimulate students' imaginations by facilitating interactions with simulated content, promoting contextualized learning. Interacting with EFL students in virtual environments may present other benefits, such as improving a teacher's ability to maintain effective communication with students, leading to superior learning experiences. Aside from these benefits, P2 emphasized the importance of DGBL for developing knowledge, stimulating innovation, supporting language development, and encouraging students' cognitive involvement.

(c). Collaboration and Communication

Following a qualitative analysis of the central themes relating to learning gamification, the participants described different dimensions, suggesting the value of digital game-based learning applications for teacher-teacher and teacher-student collaboration and communication effectiveness. As noted by one participant,

Educational games allow students to learn how to build respect (P1).

In addition, digital gaming was described as doing the following:

It promotes inclusiveness by engaging all students at the same time and giving everyone a chance to participate, which may not always be possible through the conventional methods (P5).

The interview findings highlight other positive aspects of DGBL, including promoting effective communication, fostering positive learning collaborations, encouraging active listening, promoting teamwork by encouraging peer group exchanges, increasing student networking, and building respect in virtual classrooms. Self-reported accounts by P1 and P2 suggest that DGBL effectively increases classroom cooperation, which may considerably impact academic outcomes.

(d). Flexibility and Convenience

In addition to the benefits of digital gaming as deployed in virtual classrooms, EFL teachers pointed out how the technology has contributed to learning flexibility and increased convenience in instructional processes. One of the participants affirmed the following:

As a teacher, I love the spatial and temporal flexibility offered by digital games, as these aspects often result in better work experiences, significant time savings, greater accessibility to pedagogical materials, and unparalleled convenience (P1).

The identified advantages of digital pedagogy for time management, educational access, and spatial flexibility imply that Al-Qunfudhah's primary schools that use this pedagogy are likely to benefit from increased productivity and better academic outcomes.

D. Perceived Challenges of Using Digital Games in the Virtual Classroom

(a). Unintended Effects on Students' Learning

Aside from the benefits of gamified instructional processes, the thematic analysis uncovered the potential adverse consequences of digital gaming on student learning. The analysis revealed potential negative effects, such as the low memorability of pedagogical content administered through gamified methods (P3) and the time constraints associated with technology setup and deployment in classroom environments.

(b). Technical and Practical Challenges

In parallel with the challenges associated with digital gaming, interview findings link this pedagogy to an increased frequency of technical problems and exposure to practical challenges.

(c). Behavioral and Social Concerns

Prolonged exposure to and interaction with gamified pedagogy may exacerbate behavioral problems and promote antisocial dispositions among learners. Participant 2 (P2) stated that digital game-based instructional methods are addictive, which increases students' propensity to develop behavioral gaming addictions, obstructing learning effectiveness. Given the students' young age, the risk of distraction during virtual instruction remains high since not all learners can exercise self-control and maintain their focus on learning. Another of the EFL teachers stated the following:

Devices such as laptops and tablets are bound to become sources of distraction to students (P3).

The challenge of digital gaming extends to ordinary issues and difficulties encountered by teachers and students in simulated environments. As indicated by one EFL teacher,

Students often find it hard to revert to non-gamified instruction after experiencing digital game-based instruction (P4).

E. Perceived Impacts of Using Digital Games in the Virtual Classroom

(a). Flexibility and Environmental Impact

Based on empirical evidence, the study identified the potential impacts of virtual teaching through educational games on students' and teachers' flexibility and on the physical environment. One of the EFL teachers highlighted the following:

The results that I have observed when using digital games as part of instruction are that this paradigm is much more effective than conventional teaching methods in that teachers can easily switch between games, which generally has a smaller environmental impact (P3).

(b). Improved Student Performance

Students' access to EFL instruction through virtual classrooms may boost their performance, as DGBL provides increased opportunities for students to become actively engaged and experience faster learning, as indicated by one of the EFL teacher's statements:

Students' performance showed greater improvement using the flipped education strategy as part of a blended learning approach compared to using other educational approaches (P1).

(c). Technology and Resources

Interacting with gaming technologies allows teachers and students to become familiar with these educational resources and capitalize on their positive aspects to realize the desired academic outcomes. While discussing the underlying benefits of digital innovation and its relevance in Saudi Arabian primary schools, P5 underlined the following:

Digital games offer a valuable tool that EFL trainers may exploit to enhance their knowledge of technology and deploy innovations to address resource access issues in classroom environments.

V. DISCUSSION AND IMPLICATIONS

This study highlights the significant benefits and challenges of developing and including DGBL tools as a component of mainstream curricula to support virtual learning for EFL students in Saudi Arabian primary schools. Empirical evidence suggests that educational games lead to greater student engagement as young students use the motivational and enjoyment aspects of digital games to stimulate interactions and involvement with the pedagogical content. Five primary school teachers in Al-Qunfudhah who participated in semi-structured interviews reported having gaming experience of between five and 18 years, suggesting a strong background in and rich understanding of the educational field, particularly in terms of DGBL. As primary agents for successful DGBL implementation, teachers must explore methods to attain the required knowledge, competencies, and technology-relevant skills (Kaimara et al., 2021). In this

context, participants relied on online resources and recommendations from fellow teachers to expand their knowledge of DGBL use to facilitate effective teaching when these tools emerged as the only available option for learning continuation during the COVID-19 pandemic. However, the scope of application for educational games in Al-Qunfudhah primary schools during the pandemic was limited to icebreaking sessions to reduce boredom and increase engagement. Furthermore, many teachers adopted DGBL on a need basis, such as to increase students' attention and motivate learning engagement.

From this perspective, the qualitative inquiry explored participants' experiences by obtaining and using descriptive data thematically and inductively to determine their perceptions of and positions on digital gaming in virtual EFL learning environments. EFL teachers were selected using non-randomized purposive sampling from different primary schools in Al-Qunfudhah, Saudi Arabia. Furthermore, different game types and the ways in which they affected students' engagement, experience, and overall academic outcomes were itemized. Teachers provided digital games, including icebreakers, complex puzzles, PowerPoint-based games, word-picture matching exercises, and other virtual tasks, to elicit positive responses and enhance learning involvement. Through using educational games, EFL teachers experienced few challenges in capturing and sustaining students' attention and concentration, encouraging active participation, and addressing such issues as boredom (Lampropoulos et al., 2019). This evidence is consistent with previous literature and conceptual frameworks that have established a link between interactive learning tools such as digital gaming and positive outcomes such as students' engagement and improved educational outcomes (Anastasiadis et al., 2018; Duncan, 2020). Educational games such as icebreakers expose learners to prior learning activation, increasing their engagement with subsequent learning tasks (Premo & Cavagnetto, 2018). However, the qualitative study identified some significant challenges and potential drawbacks of digital game-based learning, particularly in primary school contexts, as discussed by Anastasiadis et al. (2018). Notably, digital gaming may sometimes be ineffective due to unaddressed challenges related to its technical aspects, deficiencies at the teachers' level, and undesirable behavior on the students' side.

In terms of the different types of educational games, the study indicated a greater preference for DGBL tools and instructional practices aligned with specific learning objectives, students' needs, and lesson goals. Developing educational games while considering these requirements may be useful in producing the required learning engagement, increasing students' focus and involvement, optimizing educational value, and adapting instructional processes to conform with established pedagogical standards (All et al., 2016). In this context, constructive alignment guarantees that a digital game will provide the correct design, maintain consistency with the learning objectives, and produce the intended experiences and outcomes for EFL teachers and students.

Evidence supports the importance of constructive alignment in enhancing learning outcomes in schools that use digital games to complement traditional instruction. According to Anastasiadis et al. (2018), focusing on constructive aspects when designing digital games inspires teachers to maintain positive attitudes and focus on the educational value and relevance of these tools in fostering student engagement and knowledge development. Wang and Han (2021) conclude that gamifying EFL teaching offers students an immersive and gameful experience, increasing their involvement with language production processes. A study by Ostovar-Namaghi et al. (2023) analyzed empirical findings from a qualitative investigation and linked interactive pedagogies to benefits such as improved grammar comprehension and the production of a diverse English vocabulary among non-native speakers. Learning contextualization results in authentic learning interactions, improved English language usage, and superior learning experiences (Yadav & Oyelere, 2021). Therefore, teachers should seek to minimize students' lack of focus and attention to non-constructive features in game-based learning environments.

The study elaborates on other significant outcomes of introducing DGBL in virtual classrooms at Al-Qunfudhah schools. A key finding is that digital gaming provides opportunities to drive flexibility, reduce environmental demand by facilitating the shift from paper-based learning, support multiple access, and deliver cost advantages, given that teachers and students do not have to make tedious, costly trips to and from physical classrooms as is the case with traditional instruction (Velaora et al., 2022). Digital gaming makes a significant positive impact on students' learning performance. Delivering instruction through gamified methods contributes to dynamic classroom settings in which students maintain constant interactions and are engaged with learning, leading to high motivation, collaboration, and cognitive involvement. Moeller et al. (2020) investigated the potential consequences of digital gaming on instructional effectiveness, emphasizing that these technologies result in greater engagement and more positive experiences. Furthermore, the qualitative study explores the prominence of flipped education strategies, identifying the positive consequences of e-learning, education digitization, and urban education on academic outcomes. The transition towards flipped education strategies produces high content engagement, enabling students and teachers to exploit digital resources to supplement learning (Ristanto et al., 2022). In light of these findings, teachers should explore methods to use digital gaming to support collaboration and increase engagement in virtual instructional environments.

Furthermore, participants expressed their understanding of the challenges that have slowed digital gaming development and the integration of these innovations in virtual classrooms. Given the susceptibility to technical failures, student distraction, time constraints, low memorability, and the risk of technology misuse, many EFL teachers have challenged the effectiveness and relevance of digital gaming compared to conventional classroom practices. Lampropoulos et al. (2019) contend that, unlike DGBL approaches, in-person instruction allows interactive physical

engagement, suggesting that traditional classrooms are more likely to satisfy interpersonal learning needs, which is difficult to achieve with DGBL. As a pedagogical approach, DGBL supports interactive learning in virtual spaces but does not incorporate learning aspects such as continuous feedback and interpersonal exchanges, which are more accessible with in-person instruction (Lampropoulos et al., 2019).

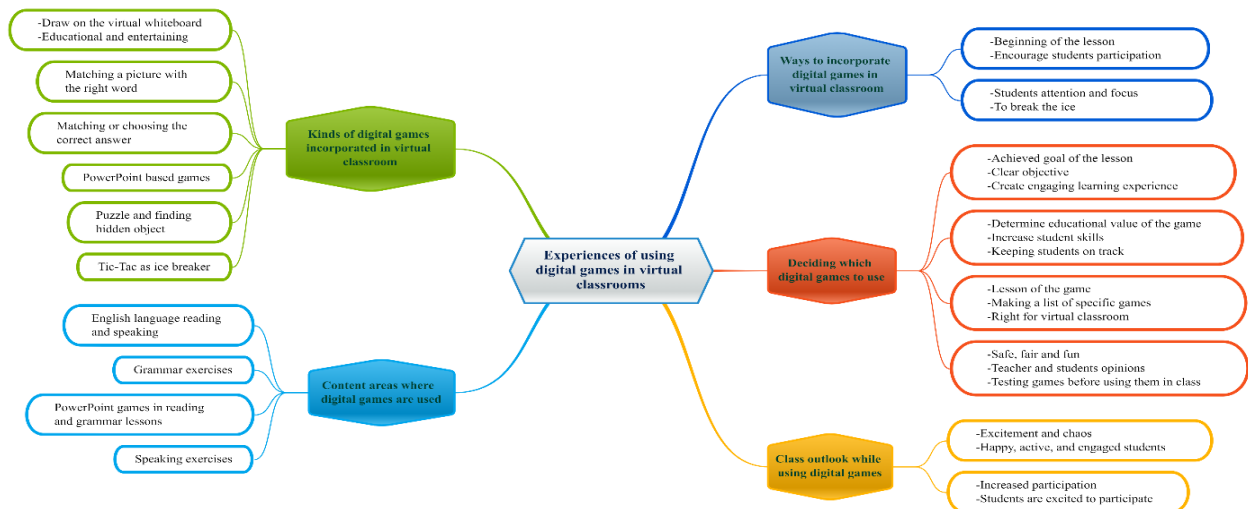
VI. CONCLUSION

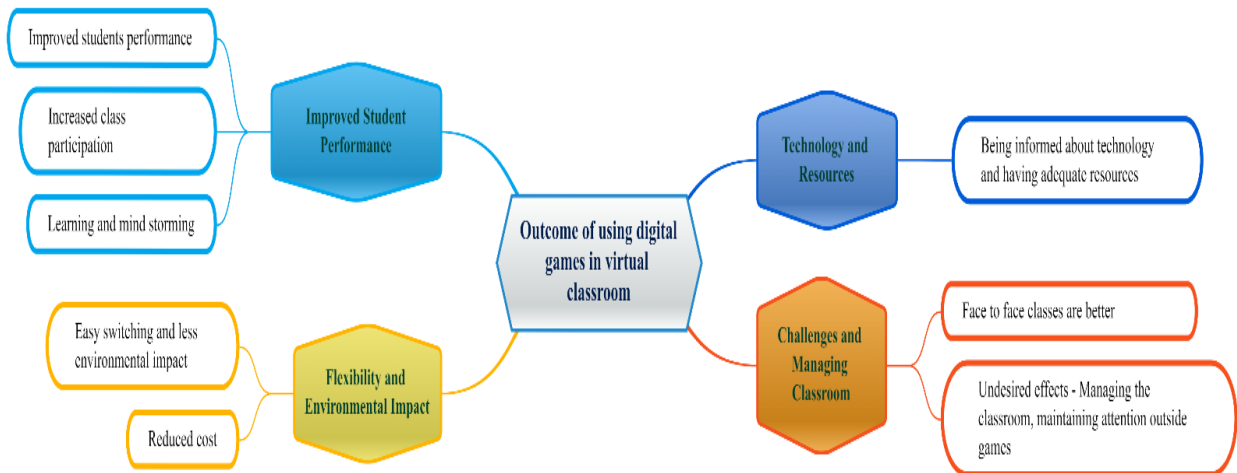
Empirical findings from the investigation reveal that educational games employed in Al-Qunfudhah primary schools by EFL teachers are positively correlated with students’ engagement, enjoyable instruction, and enhanced academic outcomes. EFL teachers use educational games to deliver information and meet learning objectives for English students across areas such as English language teaching, PowerPoint games, speaking activities, and grammar exercises. Qualitative evidence links digital game-based EFL instructional approaches to the enhancement of English skills, the constructive alignment and attainment of learning objectives, and the delivery of the intended educational value. These factors influence decisions to integrate DGBL tools in formal school environments and shape perceptions among EFL teachers regarding effectiveness. The study associated DGBL with positive outcomes, such as enhanced cognitive and emotional engagement with digital pedagogy, increased motivation, and quicker language development. However, this pedagogy is more susceptible to problematic student behavior, adverse learning effects, and technical issues. Therefore, educational administrators and EFL teachers in Al-Qunfudhah should explore ways of reducing the unintended effects of digital gaming, in order to drive flexibility, support collaboration, and transform the instructional experience for primary school students.

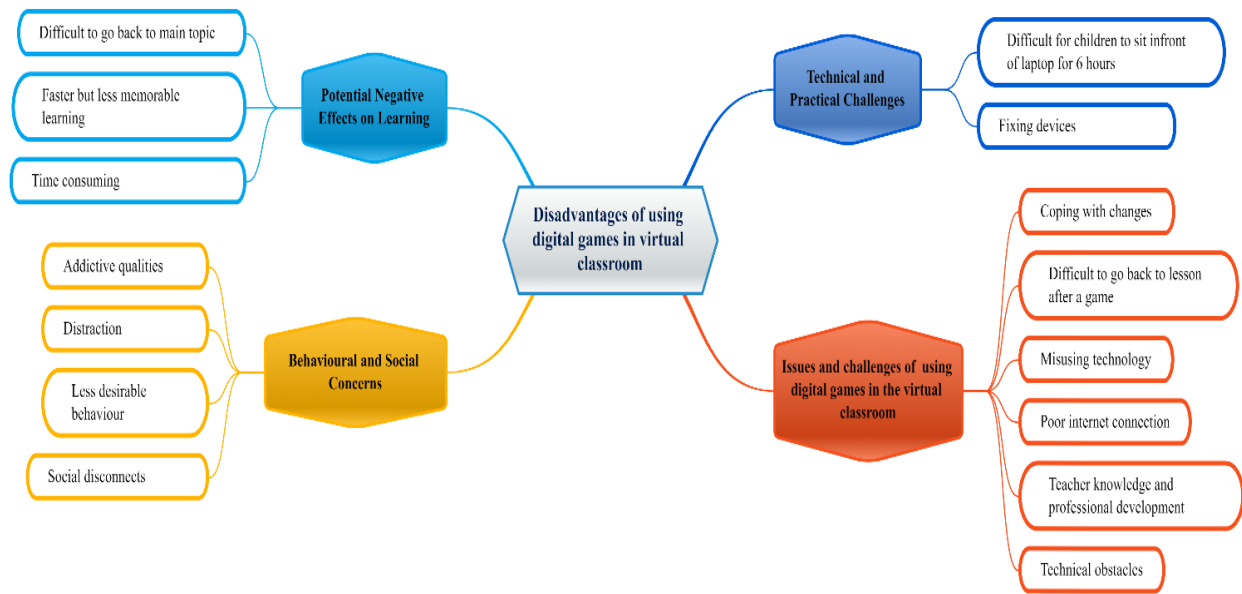
Research evidence outlines the path for future researchers to extend research on digitization and recent concepts such as digital gaming and related outcomes for diverse students and teachers. Moreover, future studies should consider different methodological approaches, such as using a quantitative and longitudinal stance to quantify the impact of educational games. Researchers could investigate the technological effects and compare the outcomes of digital pedagogies such as DGBL on students within a specified period of intervention exposure.

Finally, additional research should use randomized methods of data collection to address research limitations such as under-coverage bias and low generalization, which are associated with non-probabilistic purposive sampling.

APPENDICES







Interview Questions:

Background information (Questions 1-3)

- 1) How many years have you been a primary school teacher?
- 2) How did you first learn about digital gaming?
- 3) How long have you used digital games in your virtual classroom?

How DGBL is Used in the Classroom (Questions 4-8)

- 4) How often do you incorporate digital games into your virtual classroom?
- 5) What kinds of digital games do you incorporate in your virtual classroom?
- 6) In what ways do you incorporate digital games in your virtual classroom?
- 7) What can you tell me about the content areas where you use digital games more often?
- 8) Overall, describe what your class looks like when using digital games.

Positive and Negative Influencers (Questions 9 - 15)

- 9) What aspects do you like about using digital games in the virtual classroom?
 - A) What aspects do you dislike about using digital games in the classroom?
- 10) What are the benefits you perceive in using digital games in the virtual classroom?
 - A) What drawbacks do you perceive in using digital games in the virtual classroom?
- 11) (a) What benefits do you see in using digital games compared to other approaches?
 - (b) What challenges do you confront in using digital games compared to other approaches?
- 12) How do you decide which digital games to use? Or not to use it?
- 13) In what ways do you find educational digital games easy to use in the virtual classroom? Or is it not easy to use in the virtual classroom?
- 14) Describe how you experimented with games before using them in the virtual classroom.
- 15) What results have you observed when using digital games as part of instruction?

Concluding Question

- 16) Is there anything else you feel is important for me to know about digital games in your virtual classroom?

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