Digital Game-Based Language Learning (DGBLL) in Saudi Arabian Primary Schools: An Investigation of Teacher Perspectives

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Digital Game-Based Language Learning (DGBLL) in Saudi Arabian Primary Schools: An Investigation of Teacher Perspectives

Submitted by

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Statement of Authorship and Sources

This thesis contains no material that has been extracted in whole or in part from a thesis that I have submitted towards the award of any other degree or diploma in any other tertiary institution. No other person's work has been used without due acknowledgement in the main text of the thesis. All research procedures reported in the thesis received the approval of the relevant Ethics/Safety Committees (where required).

Signature: _____

Date: _____7/18/2025_____

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Abstract

This study explores the perspectives of primary school English as a foreign language (EFL) teachers in Riyadh, Saudi Arabia, on the use of digital game-based language learning (DGBLL) tools, with a specific focus on Minecraft Education Edition. This research is conducted in the context of Saudi Arabia's Vision 2030 educational reform, which advocates for the integration of innovative digital technologies to enhance English literacy. The study addresses a significant gap in the application of DGBLL in primary education.

The research is guided by sociocultural theory and multimodal social semiotics to investigate how DGBLL can foster engaging, interactive, and socially rich learning environments that support English language proficiency development among primary school students. The central research question seeks to understand the primary teachers' perspectives on the potential of DGBLL in creating social learning environments for EFL instruction. This inquiry is further guided by three sub-questions: What are primary teachers' perspectives on using DGBLL to promote English as a social practice for their students? How does using DGBLL help advance primary students' English as a social practice? How do teachers integrate DGBLL into their EFL pedagogical practice?

An exploratory case study design was used, involving 10 primary school EFL teachers from two schools in Riyadh. Data were collected through semi-structured interviews at three distinct points during the study: once prior to the professional development and twice after the implementation of Minecraft in the EFL classrooms. The professional development sessions, facilitated by Microsoft staff, aimed to equip teachers with the skills needed to use Minecraft as a teaching tool.

The findings suggest that teachers perceived DGBLL, particularly Minecraft, as an effective tool for enhancing social interaction, engagement, and language learning. Teachers reported improvements in the students' social language skills, including vocabulary acquisition, pronunciation, and sentence formation, facilitated by the game's multimodal and interactive features. Furthermore, the teachers observed that the use of Minecraft Education Edition fostered a stronger home–school connection, as students were excited to continue their learning at home and share their in-game achievements with their teachers. The importance of professional development in successfully integrating DGBLL into teaching practices was also emphasised. The study highlights the potential of Minecraft in creating a collaborative and supportive learning environment, aligning with the sociocultural and multimodal theoretical frameworks.

This research contributes to the broader discourse on digital technologies in education by providing empirical evidence of DGBLL's effectiveness in primary EFL classrooms. It offers strategic guidance for integrating game-based learning into primary education, aligning with Saudi Arabia's Vision 2030 educational reform. The insights from this study are crucial for teachers and policymakers aiming to enhance English language teaching practices and support teachers' professional development in using innovative digital tools. Furthermore, it contributes to the fields of new literacy studies (NLS) and foreign language learning by offering valuable insights into how digital game-based learning can foster social language learning and contribute to broader educational goals.

In conclusion, this study investigates the potential of DGBLL, particularly Minecraft Education Edition, in enhancing English language proficiency among primary school students. By bridging the fields of NLS and EFL education, it offers valuable insights into how digital game-based learning can foster social language learning and contributes to the broader educational goals of Vision 2030 in Saudi Arabia.

List of Abbreviations

CALL	computer-assisted language learning
DGBL	digital game-based learning
DGBLL	digital game-based language learning
EFL	English as a foreign language
ESL	English as a second language
MKOs	more knowledgeable others
MMOGs	massively multiplayer online games
MMORPG	massively multiplayer online role-playing game
NLS	new literacy studies
OECD	Organisation for Economic Co-operation and Development
RQ	research question
TESOL	teaching English to speakers of other languages
WoW	World of Warcraft
ZPD	zone of proximal development

Chapter 1: Introduction

In the contemporary educational landscape, digital game-based learning is attracting significant attention from researchers and practitioners in the fields of language learning. Studies continue to highlight how digital game-based language learning (DGBLL) offers an innovative approach to language learning that responds to the dynamic nature of education (Buendgens-Kosten, 2022; Reinders, 2012; Reinhardt, 2019). By leveraging the engaging and immersive qualities of digital games, DGBLL enhances both language learning and communication skills for learners, making it a highly effective tool for modern language educational practices (Buendgens-Kosten, 2022; Reinhardt, 2019).

Recent studies have expanded our understanding of DGBLL. For instance, a comprehensive review by Z. Xu et al. (2020) highlights how practices facilitating a DGBLL approach support English language learning by fostering a more interactive and engaging learning environment, promoting learner autonomy and enhancing learners' linguistic and cultural competencies. The importance of player engagement and interactive learning in enhancing language learning is underscored by the unique game design elements used in DGBLL (Govender & Arnedo-Moreno, 2021). Moreover, DGBLL has been shown to influence the learning rate of children in preschool, thus highlighting its broad applicability across different age groups (Nebel et al., 2016).

The transformative impact of DGBLL on language learning is driving a significant reassessment of pedagogical approaches in the teaching profession (Ragni et al., 2023). The global disruption caused by the COVID-19 pandemic has significantly accelerated the integration of digital platforms, social networks, and educational technology tools into teaching practices, particularly in the realm of language learning (Pozo et al., 2021). The unforeseen circumstance of the pandemic necessitated and encouraged teachers to embrace, incorporate, and adapt to digital modes of instruction (Randolph & Liu, 2022; Rice & Ortiz, 2021). As a result, developing teachers' digital competencies, such as the ability to effectively use digital tools for language instruction, has become a critical factor in delivering high-quality education and ensuring the effective functioning of educational services (Zhou et al., 2024).

Teacher training, a fundamental responsibility of the education system across most nations, must evolve proactively and strategically to consider the latest developments in technology-enhanced language learning (Sen & Leong, 2020). This forward-looking approach aims to equip today's teachers with the essential 21st-century skills and competencies

necessary to adapt to the ever-evolving needs of their students and create engaging and effective language learning experiences (Rahmatullah et al., 2022).

1.1 Research Problem

At the heart of this study is the exploration of how using an online multiplayer game, specifically Minecraft Education Edition, can potentially impact on English language learning for primary school students in the context of Saudi Arabia and contribute to the educational transformation outlined in Vision 2030, led by Crown Prince Mohammed Bin Salman (Organisation for Economic Co-operation and Development [OECD], 2020). This visionary initiative emphasises the integration of innovative digital technologies to improve the English literacy skills of Saudi students across all schools, which are currently alarmingly low (Al Zahrani & Elyas, 2017). A significant challenge lies in the readiness of English as a foreign language (EFL) teachers to effectively teach English in primary school settings and to align their pedagogical practices with the Vision (Alrabai, 2018; Al-Shehri, 2020). EFL teaching is defined as the teaching and learning of English in a non-English-speaking country, where English is not the primary language of communication (J. Richards & Rodgers, 2014).

While digital technologies, particularly DGBLL, have emerged as promising for motivating English language learners, a notable gap exists in the literature on how to enact such pedagogies. Most studies in this domain have primarily focused on English language instruction at the university level (Dixon et al., 2022; Peterson, 2016). In contrast, there is a significant paucity of research on addressing the teaching of EFL at the primary school level in Saudi Arabia (L. Alharbi, 2023; Alrabai, 2018). Moreover, the lack of research extends to the professional development of teachers to effectively employ pedagogical approaches that foster social language learning environments. Consequently, teachers in Saudi Arabia find themselves ill-prepared to meet the objectives outlined in Vision 2030, which include improving English language proficiency and integrating innovative teaching methods and digital technology (Barnawi & Al-Hawsawi, 2017; M. Karim & Hasan, 2024). Many continue to rely on outdated didactic pedagogical methods, such as grammar translation, which do not align with current best practices in language education (Alrabai, 2018; Al-Shehri, 2020).

In this context, the research problem centres on the efficacy of integrating Minecraft Education Edition, a DGBLL platform, as a pedagogical tool to improve primary school English language instruction in Saudi Arabian primary schools. This study seeks to explore how Minecraft Education Edition can serve as a catalyst for enhanced social language learning, and how the use of digital pedagogies can improve English language proficiency. By investigating how to address the problem of low English language proficiencies for primary

students, the study aims to contribute valuable insights to the broader discourse on social language learning in digital game-based environments, while also providing actionable recommendations for educators and policymakers in Saudi Arabia to navigate the evolving landscape of English language education.

For the purpose of this study, Minecraft Education Edition is employed to examine EFL teachers' perspectives about its use for English language education in the Saudi context. Minecraft Education Edition was selected due to its popularity among primary school children in Saudi Arabia, the extensive online teacher forums and professional training resources provided to support implementing the game in classrooms, and the game's cultural acceptance in the Saudi Arabian context. Additionally, it serves as a relevant pedagogical tool suitable for primary school learners' backgrounds and ages, aligning well with Chapelle's (2001) concept of "learner fit" for lower proficiency learners. This study also investigates teachers' perspectives before and after professional development in the use of Minecraft Education Edition, following their journey as they trial using the game as a pedagogical approach to teaching EFL with primary-aged students.

The advancement of English language as a social practice in Saudi Arabian primary schools is at a critical juncture, driven by the national educational reform aiming for broader social and economic transformation. Despite the growing integration of digital technologies in education, there remains a significant gap in using these tools effectively at the primary school level for social English language learning. Specifically, the main problem is the absence of DGBLL in EFL classrooms. Thus, this study investigates the potential of Minecraft to enhance social English language proficiency among primary school students. The lack of previous studies exploring the potential of Minecraft for EFL learning highlights a crucial need for a deeper understanding of DGBLL's capabilities and challenges for teachers within this specific educational context, with implications for those working beyond Saudi Arabia.

1.2 Research Questions

This research seeks to explore the potential of DGBLL to foster an engaging and socially interactive environments for primary school students in Saudi Arabia. The main research question is:

> What are primary teachers' perspectives on the potential of DGBLL for supporting social learning environments for teaching primary school children EFL?

The three research sub-questions (RQ) are:

> RQ1: What are primary teachers' perspectives on using DGBLL to promote English as a social practice for their students?

RQ2: How does the use of DGBLL help advance primary students' English as a social practice?

RQ3: How do teachers integrate DGBLL into their EFL pedagogical practice?

By addressing these questions, the study aims to bridge the identified gap by investigating if and how leveraging DGBLL can facilitate more effective and engaging English language teaching. This investigation will provide insights into the actual and perceived benefits and challenges of DGBLL, contributing valuable knowledge to the fields of educational technology and social EFL education, thereby enriching both domains with findings that could inform educational practices and policies.

1.3 Significance of the Study

This study addresses a critical gap in the international research on using DGBLL within primary schools to advance EFL education. While the benefits of game-based learning have been widely recognised in various educational contexts (R. Clark & Mayer, 2023), there is limited research on its application within primary EFL classrooms. By examining teachers' perceptions of and integration strategies for DGBLL, this study aims to contribute new knowledge to the field of new literacy studies (NLS), which defines literacy as a social practice (Street, 2003).

Internationally, this study seeks to provide empirical evidence on how DGBLL can enhance social English language skills among primary school students, focusing on communication, collaboration, and critical thinking. This objective addresses the need for innovative pedagogical approaches that align with the communicative and informational dynamics of the 21st century (Ragni et al., 2023; Rahmatullah et al., 2022; Reinders, 2012; Reinhardt, 2019). By exploring the pedagogical impact of DGBLL, this research contributes to the broader discourse on digital technologies in education and their potential to create more dynamic and interactive learning environments. Furthermore, the study investigates integration strategies by exploring the practical approaches and resources necessary for effective DGBLL implementation. By examining the challenges faced by EFL teachers and the support they require, the research aims to provide strategic guidance applicable in various educational settings worldwide (Koehler et al., 2013). This contribution is crucial for advancing NLS and EFL teaching strategies, as it maps out the practicalities of incorporating digital games into existing curricula.

In the context of Saudi Arabia, the study's outcomes are anticipated to offer strategic insights for effectively integrating game-based learning into primary education, aligning with the objectives of Saudi Arabia's Vision 2030 educational reform. This approach aims to not

only enhance EFL education but also contribute to the broader discourse on digital technologies in education. By examining teachers' attitudes and beliefs about the value and challenges of using DGBLL in the classroom, this research provides new knowledge critical for its successful implementation within the Saudi educational context.

In summary, this study contributes new knowledge to both international and Saudi contexts by exploring the application of DGBLL within primary EFL education. It aims to investigate how to foster social interaction among EFL primary school students through new literacy practices, providing innovative tools and practices that align with contemporary educational needs (R. Clark & Mayer, 2023; Ertmer & Ottenbreit-Leftwich, 2010; Koehler et al., 2013).

1.4 Aim of the Study

This study bridges the gap between the fields of NLS (Chakrabarty, 2020; Mills, 2010) and EFL education (de Silva Joyce & Feez, 2016), seeking to address a notable gap in the literature concerning the social affordances of multiplayer digital games, such as Minecraft Education Edition, for primary-aged EFL learners. This study seeks to explore how multiplayer digital games can foster new literacy practices that extend beyond conventional classroom settings into dynamic and social interactive environments (Squire, 2011; Steinkuehler, 2006; Takeuchi & Vaala, 2014), while at the same time having a positive impact on the cognitive and motivational aspects of learning (Wouters et al., 2013). While current literature offers insights into digital literacy and game-based education (Adipat et al., 2021; Aguilera & de Roock, 2022), there is a need for studies that specifically explore how multimodal affordances of multiplayer online games influence the social interactions and language development among young EFL learners (Jabbari, 2021; Zheng et al., 2015). This study aims to fill this gap by integrating NLS and EFL education through a sociocultural and multimodal lens, examining these dynamics within the context of Saudi Arabia's educational reform (Chakrabarty, 2020; Papen, 2023; Street, 1984).

Drawing on a sociocultural theoretical framework, this research examines how DGBLL can enhance language learning through enriched social interaction and communication, drawing upon recent studies that underscore the role of collaborative settings in educational achievements (Vonkova et al., 2021). Additionally, it adopts a multimodal, social semiotic approach to explore how various communicative modes—visual, auditory, and textual—contribute to language mastery within digital gaming contexts (Kress & van Leeuwen, 2001; Sun et al., 2020). This complementary theoretical perspective aims to provide a comprehensive

understanding of DGBLL as a sophisticated form of digital literacy, thus highlighting its potential to develop a broad variety of social literacy skills among EFL learners.

The expected outcomes of this research are twofold: First, it should provide novel insights into literacy education, and second, it seeks to refine the theoretical foundations of DGBLL. These insights are intended to offer new knowledge for effectively integrating game-based learning into EFL primary education, which in the context of Saudi Arabia aligns with the goals of Saudi Arabia's Vision 2030 educational reform (Nereim, 2021; Oxford Business Group, 2022). By exploring these theoretical and practical dimensions, the research not only aims to address a significant research gap, but also responds to the contemporary educational imperative to leverage digital tools for enhancing language education in diverse environments.

1.5 Definition of Key Terms

To ensure clarity and enhance understanding, the key terms used throughout this study are defined as follows.

Digital game-based language learning (DGBLL): Refers to the use of digital games as a tool for enhancing language learning outcomes. DGBLL leverages the engaging and interactive features of digital games to facilitate language acquisition in an immersive and contextualised environment (Cornillie et al., 2012; Reinhardt, 2019).

English as a foreign language (EFL): Describes the teaching and learning of English in a non-English-speaking country, where English is not the primary language of communication, tailored specifically for students who are learning English for practical, educational, or vocational reasons (Larsen-Freeman, 2000; J. Richards & Rodgers, 2014).

Multiplayer games: Digital games that allow multiple players to interact and compete or collaborate within the same game environment. These games are used in educational contexts to promote social interaction and collaborative learning among students (Steinkuehler & Williams, 2006).

Social affordances: Characteristics of a tool or technology that enable social interactions and collaboration. In the context of DGBLL, social affordances refers to features of digital games that facilitate communication, collaboration, and community building among learners (J. Gee, 2007).

Sociocultural theory: A theoretical framework that emphasises the importance of social interaction and cultural context in the development of cognitive skills. This study applies sociocultural theory to understand how digital games can be integrated into language learning environments to enhance the social and linguistic development of students (Vygotsky, 1978).

Vision 2030: A strategic framework to reduce Saudi Arabia's dependence on oil, diversify its economy, and develop public service sectors such as health, education, infrastructure, recreation, and tourism. In the context of this study, Vision 2030's relevance lies in its emphasis on improving educational outcomes and integrating innovative technologies into the education system (Ministry of Education, 2024).

Multimodality: Refers to the use of multiple modes of communication within a single interaction. These modes can include visual, auditory, gestural, spatial, and linguistic channels. In the context of DGBLL, multimodality explores how these various forms of communication are used in digital games to enhance language learning and engagement (Jewitt, 2015; Kress, 2010).

Multimodal social semiotics: A framework that analyses how meaning is made and communicated through various semiotic resources in social contexts. This approach considers the integration of different modal resources, such as text, image, sound, and gesture, to understand how they work together to create meaning in specific cultural and social contexts. In this study, multimodal social semiotics is used to examine how digital games as semiotic domains facilitate language learning and social interaction (Bezemer & Jewitt, 2010; Kress, 2010).

1.6 Theoretical and Methodological Significance

This study builds on previous studies that highlight the importance of social interactions for language learning and the key role of digital technologies to support such learning. The fundamental skill identified as necessary for language learning is the ability to engage in digital communication. This has led to a shift in the field of literacy pedagogical approaches towards broader research that includes what has been termed "new literacy practices" evident in digital environments across a variety of social and cultural contexts (Mills, 2010), including the use of digital games (Reinhardt, 2019; Reinhardt & Sykes, 2014; Reinhardt & Thorne, 2019). From an NLS perspective, language and literacies are constructions of social groups rather than arising from individual cognition alone. This is because literacy practices are entrenched in particular cultural and value-based orientations to the world, so that there is no single form of universal literacy (Mills, 2010).

According to Street (2013), based on the NLS (New London Group, 1996) approach, educators need to understand contemporary literacy practices within the context and ongoing development of digital communication technologies. Later theories that developed from NLS, and involved some of the same proponents, included the concept of "multiliteracies" proposed by the New London Group (1996) and other sociocultural scholars of literacy (Cope &

Kalantzis, 2000; J. Gee & Hayes, 2011), which go beyond the traditional reading and writing activities in "page-bound, official, standard forms of the national language" (New London Group, 1996, p. 2). The New London Group make two main arguments: first, that multiple modes and texts circulate in the globalised communication environment, and second, that there is increased cultural diversity as a consequence of cultural globalisation (New London Group, 2000). Common to both theories is the view that literacy is inclusive of socially understood sign-making practices that use technologies to produce and disseminate ideas (Mills, 2010).

New literacy practices, such as blogs (Ducate & Lomicka, 2008; Ward, 2004), wikis (Bradley et al., 2010; Storch, 2013), and social networking (Reinhardt, 2019)—including Facebook (Blattner & Fiori, 2009, 2011; Dogoriti et al., 2014), Twitter (Ward, 2004), WeChat (Jin, 2018), and digital gaming (Reinhardt, 2019; Reinhardt & Sykes, 2014; Reinhardt & Thorne, 2019)—have been used as pedagogical tools to address students' lack of engagement with language learning informed by new literacy practices and multiliteracies perspectives firmly rooted in understandings of literacy as social practice (Cope & Kalantzis, 2000).

While these computer-assisted language learning (CALL) pedagogical tools have proven to be useful in research mostly conducted outside the Kingdom of Saudi Arabia, a number of leading scholars have advocated for educators internationally to introduce game-based learning into their classrooms as a pedagogical approach (Connolly et al., 2012; Girard et al., 2013; Squire, 2011; Wouters et al., 2013). Digital game-based learning (DGBL) has long been promoted to motivate learners and to create a positive social learning environment by developing a player's critical thinking and leadership skills (Yee, 2006). In addition, it has also been seen to promote players' imaginations, promote problem-solving skills, and give individuals the opportunity to practise leadership skills when competing and collaborating with other players (Bailey et al., 2006), while all the time motivating students to engage with learning activities (Butler, 2017). Learners' interest in learning has also been enhanced by the use of scaffolding techniques in digital environments. These include elements such as visuals, video, movement, and role-plays (Cary, 2000). DGBL has been designed to take advantage of these elements to create dynamic and interactive learning environments that promote active and challenging social interactions (J. Gee, 2003).

In addition, DGBL implies that important learning skills are embedded within this form of entertainment. Norton-Meier (2005) noted that critically important learning skills, such as "turn taking, risk taking, and decision making" (p. 429), are inherent in many digital games. The research shows that the use of digital technology and more specifically DGBLL provides important opportunities for the language learner (Anastasiadis et al., 2018; Serrano, 2019). The term DGBLL is defined as the application and use of digital games for the purpose of

developing a second language (D. Dixon & Christison, 2021). Here, the term DGBL is increasingly being used to refer to the use of games that emphasise the importance of the context they are used in, that is, the online community learning environment. This highlights the use of digital games for educational purpose rather than the use of stand-alone applications. Using DGBL in this way also increases the anticipated learning outcomes (Egenfeldt-Nielsen et al., 2019).

While digital games have been identified as stimulating EFL learner motivation (Chik, 2014; Wichadee & Pattanapichet, 2018), they have also been found to involve literacy and multiliteracies practices that bridge students' out-of-school life worlds with 21st-century curriculum (Apperley & Beavis, 2013). According to Reinhardt (2019), there are eight qualities of DGBLL for EFL: (a) contextualised language learning; (b) time for second language use and learning; (c) secure space for sheltered practice; (d) goal-oriented learning and feedback; (e) opportunities for language and social collaboration; (f) means to identify work and play; (g) time and place independent and dependent learning; and (h) extramural and autonomous learning.

In Reinhardt's (2019) study on DGBLL, he argues that gamers prefer to engage online with other players, which enables them to play games competitively or cooperatively (a feature of multiplayer games), rather than single-player games identified by other researchers (Marchand, 2017). Through online multiplayer contexts, players (two or more) engage in social communicative interactions where they need to have a common language to make and share experiences in what J. Gee (2005) calls "affinity spaces".

1.7 The Global Popularity and Unique Features of Minecraft

The landscape of digital gaming has witnessed a paradigm shift, with multiplayer online games becoming a global phenomenon. Multiplayer games offer players the opportunity to engage in social interactions, collaboration, and competition on a global scale (Deterding et al., 2011; J. Gee, 2007). This surge in popularity reflects a broader societal trend towards virtual affinity spaces (Hayes & Duncan, 2012). These spaces transcend geographical boundaries and provide individuals, including EFL students, with a platform to interact and communicate with peers from diverse linguistic and cultural backgrounds (C. Richards & Burn, 2014).

Multiplayer games have not only become a source of entertainment but also a medium for meaningful social interactions and language learning (Steinkuehler & Duncan, 2008). When engaged in multiplayer games, EFL students often find themselves in situations where effective communication in English becomes imperative for success within the game environment (M. Miller & Hegelheimer, 2006; Peterson, 2016b). Within these virtual

environments, language serves as a means for players to collaborate effectively, devise strategies, and foster a sense of camaraderie with their fellow gamers. This dynamic has prompted educators and researchers to explore the potential of multiplayer games, such as Minecraft, as powerful tools for language acquisition (M. Miller & Hegelheimer, 2006; Peterson & Jabbari, 2022).

Minecraft, developed by Mojang Studios, has emerged as a titan among the multiplayer online games and was specifically selected as the focus of this current study. Through its virtual sandbox environment, Minecraft offers players the freedom to build, explore, and interact in a procedurally generated world made of blocks. The game's open-ended nature and creative possibilities have captivated players of all ages worldwide (Nebel et al., 2016). What sets Minecraft apart is its unique blend of creativity, exploration, and social interaction. Players collaborate on massive construction projects, embark on adventures, and navigate challenges together in a shared virtual space (Dezuanni et al., 2015; Dusmann, 2013). The game's simplicity and accessibility have made it particularly appealing to younger audiences, including primary school students (Dezuanni et al., 2015; Dusmann, 2013). The global popularity of Minecraft has sparked interest among educators and researchers, who recognise its potential as a pedagogical tool (Nebel et al., 2016). Minecraft's versatile platform can be harnessed to create immersive learning environments where language learning and social interaction are seamlessly integrated (Dezuanni et al., 2015). It is within this context that this research explores Minecraft as a DGBLL tool for EFL students in Saudi Arabia.

1.8 The Saudi Arabian Context and the Importance of EFL Education

This study is conducted in Saudi Arabia. The Kingdom is the largest Arab country of the Middle East, with Arabic the official language. While the Kingdom shares similar challenges with other nations in raising English proficiencies, it is also characterised by its own vision. Saudi Arabia is undergoing significant educational change, with a strong push to increase English literacy skills among students from primary to secondary school as part of Vision 2030 outlined by Crown Prince Mohammed Bin Salman (OECD, 2020). Currently, the English language skills of Saudi students are at a very low level, and teachers are often insufficiently prepared to teach English in primary schools, which hinders the implementation of Vision 2030's pedagogical approaches (Alrabai, 2018; Al-Shehri, 2020; Al Zahrani & Elyas, 2017).

DGBLL has been identified as a motivating pedagogy for teaching EFL. However, existing research primarily focuses on university-level education (Gamlo, 2019), leaving a gap in understanding its application in primary schools in Saudi Arabia. Moreover, there is a lack of research on professional development in this crucial pedagogical approach for creating

a social learning environment to fulfil the Vision 2030 goals (Alrabai, 2018; Al-Shehri, 2020). Additionally, there is no clear strategy for implementation or a defined framework for EFL teaching development from primary to secondary school levels (Barnawi & Al-Hawsawi, 2017). In Saudi Arabia, formal English instruction typically begins in Grade 4 of primary school, although recent reforms have aimed to introduce English earlier in the curriculum to strengthen early language development (Elyas & Picard, 2010). On average, students receive between 2 and 4 hours of English instruction per week, depending on the curriculum model adopted by the school. The national education system comprises government, private, and international schools, with government schools adhering to a standardised national curriculum. Within this study, the participating students were native Arabic speakers enrolled in either a government or an international primary school, which provided a relatively homogeneous linguistic background yet varied educational contexts for the investigation.

Critics argue that the current education system relies heavily on traditional rote-learning methods rather than fostering critical thinking and analytical skills (Elyas & Picard, 2010). These traditional methods hinder the advancement of EFL, and without pedagogical enrichment, the difficulties in Saudi Arabia will persist. To improve, modern teaching methods that use digital devices have been advocated (Al-Nasser, 2015). Professional development in appropriate pedagogies is critical to support the inclusion of technology and digital materials essential to motivate students and enhance language learning (Mitchell & Alfuraih, 2017). The prioritisation of English skills is evident in the Vision 2030 goals and initiatives, which promote the use of digital technology, including games, to support informal English language learning and enhance pedagogical approaches (Alamr, 2019). The Vision has inspired this study to investigate Minecraft as a potential game-based digital tool to support the advancement of English proficiencies in the Kingdom.

1.9 Overview of the Thesis

This thesis is organised into six chapters to present this study that explores teachers' perceptions of the potential role of Minecraft Education Edition as a pedagogical tool that supports and enhances a social learning environment for teaching EFL in primary school settings.

Chapter 1 has set the stage for the study by outlining the research problem, research questions, significance, and background.

Chapter 2 offers a comprehensive review of existing research on DGBLL. It examines DGBLL's effectiveness in language acquisition, its capacity to enhance social language learning, and its contribution to improving language learning outcomes. This review of the

literature draws upon foundational studies informed by sociocultural theory (Vygotsky, 1978) and multimodal social semiotics (Kress & van Leeuwen, 2001) to critically examine studies that have applied these perspectives in the field of EFL education. Additionally, the review bridges the fields of NLS (Chakrabarty, 2020; Mills, 2010) and EFL education (de Silva Joyce & Feez, 2016), by exploring how DGBLL can integrate literacy and language learning strategies within diverse educational settings, particularly in the context of Saudi Arabian educational reform. The chapter identifies key gaps in the current literature, particularly in relation to Saudi Arabian educational settings, and sets the stage for addressing these gaps through the current study.

Chapter 3 defines the theoretical framework that underpins the study, justifying the lens used as the basis for the research design, data collection, and analysis methods. The framework draws on sociocultural theory (Vygotsky, 1976) and multimodal theory (Jewitt, 2017) to present an integrated lens that emphasises the affordances of zone of proximal development (Vygotsky, 1976), scaffolding (Vygotsky, 1976), multimodal literacy (New London Group, 1996), and affinity spaces (J. Gee, 2004, 2007) to advance language learning. This approach provides insights into the complex social and cultural dynamics at play in the DGBLL context, as well as the various modes of communication and expression involved in EFL learning.

Chapter 4 describes the qualitative research methods used to collect and analyse data. The chapter outlines the exploratory case study design employed to investigate teacher perspectives in two primary schools in Riyadh, Saudi Arabia. It details the criteria for participant selection, ensuring a diverse range of experiences and insights from EFL teachers. The data collection methods are elaborated upon, including the use of semi-structured interviews conducted at three points in time. : before Minecraft professional development and at two points as teachers embedded the tool into their pedagogical approach. These interviews aimed to capture the teachers' initial perceptions, their experiences during the professional development sessions, and their reflections after implementing Minecraft in their classrooms.

The interview design was informed by the theoretical frameworks of sociocultural and multimodal literacies, and focused on how digital games can mediate social interactions and support multimodal learning environments. Thematic analysis, guided by the frameworks mentioned earlier, was used to interpret the data and to reveal key themes and insights into the role of Minecraft in creating engaging, interactive, and socially rich learning environments. In this way, Chapter 4 provides a comprehensive understanding of the research design, data collection and analysis methods, and ethical considerations guiding this study. This methodological foundation is crucial for addressing the research questions and contributing to the field of EFL teaching through innovative DGBLL approaches.

Chapter 5 presents the findings from the data analysis of the interviews, focusing on the teachers' perceptions of the use of DGBLL in EFL classrooms in the Saudi context. The chapter begins by introducing the background of the 10 teachers who participated in the study and detailing their diverse experiences and qualifications, which range from 4 to 16 years of teaching and include various educational backgrounds such as degrees in English literature, educational leadership, and specialised certificates like teaching English to speakers of other languages (TESOL).

Findings are structured around the main research question and three interrelated sub-questions, which explore how primary teachers perceive the role of DGBLL in promoting English as a social practice, advancing English language learning, and integrating DGBLL into their pedagogical practices. The chapter presents themes illustrated through the voices of the teachers, captured via semi-structured interviews conducted before and after the professional development sessions. Themes discussed include the sociocultural affordances of Minecraft, such as fostering collaborative learning environments and supporting peer interactions within the zone of proximal development. The teachers' narratives show how Minecraft supports scaffolding, which allowed their students to progress with the help of peers and teachers. Additionally, the chapter explores the multimodal engagement facilitated by the Minecraft platform, thereby showing how it enhances vocabulary acquisition, grammar understanding, and overall social language development through visual, auditory, and interactive modes. The chapter concludes by correlating the findings with the theoretical frameworks established in Chapter 3, providing a comprehensive analysis of how DGBLL, specifically Minecraft, can serve as a catalyst for creating socially rich and engaging language learning environments. These insights contribute to the broader discourse on DGBLL and offer actionable recommendations for educators and policymakers in Saudi Arabia.

Chapter 6 synthesises the findings from the study to discuss the role and impact of DGBLL, particularly through the use of Minecraft Education Edition, in Saudi primary EFL classrooms. It evaluates how these digital tools align with sociocultural and multimodal theoretical frameworks to enhance social language learning. The chapter explores the teachers' perceptions and experiences and highlights the transformative potential of Minecraft for fostering more interactive and communicative pedagogical approaches. It addresses the opportunities and challenges of integrating such technologies in language education, ranging from increased student engagement and enhanced multimodal literacy to obstacles in teachers' training and curriculum integration. The chapter concludes with strategic recommendations for educators, policymakers, and future research, aiming to optimise the benefits of DGBLL and mitigate its challenges in diverse educational settings.

1.10 Conclusion

Chapter 1 has outlined the significance of investigating the potential of using DGBLL within the context of contemporary educational practices, especially in responding to the transformative Vision 2030 initiative in Saudi Arabia. The chapter has highlighted the urgent need for innovative pedagogical approaches to enhance social English language proficiency among primary school students. The research problem and questions identified aim to investigate the potential of integrating Minecraft as a DGBLL tool to create engaging and effective learning environments. Additionally, this study situates itself at the intersection of NLS and EFL education and aims to bridge the gap between these fields by exploring how DGBL can foster social language learning in primary education. By addressing this gap, the study aims to contribute valuable insights to the fields of educational technology, NLS, and EFL education, and to contribute findings to inform advancement across nations. Building on the foundational understanding established in Chapter 1, Chapter 2 undertakes a comprehensive review of the existing research on DGBLL.

Chapter 2: Literature Review

Chapter 1 introduced this study on teachers' perspectives about DGBLL in Saudi Arabian primary schools. It provided background related to the research aims, theoretical perspectives, and methodological approach to the study while highlighting the importance of advances in DGBLL that can potentially support the teaching and learning of EFL. As the context of the study is an important consideration, the first chapter also illustrated how English language learning is currently positioned in Saudi Arabian primary schools as a national priority, although traditional approaches to teaching impede proficiency for children.

The purpose of Chapter 2 is to review international literature concerning second language learning, the affordances of digital games for learning English, and the potential of Minecraft Education Edition as a game-based pedagogical tool for supporting language learning as a social practice. As noted in the previous chapter, this study is informed by an understanding that literacy is more than the individual acquisition or use of skills, but rather involves the way people use language in their everyday lives (Barton & Hamilton, 2012; Street, 1984).

In recent years, language researchers have investigated the advances and innovations in digital technologies for second language learning (Reinhardt, 2019). Among the new technologies, contemporary digital games in the field of language education offer rich potential for providing language development opportunities (Kruk & Peterson, 2020). To help address the digital gap in the Saudi context, there is a need to educate EFL teachers to support 21st-century primary-aged students' immersion in a rich social environment so they can interact, collaborate, and co-construct meaning. This study aims to provide new understandings of how digital technologies such as gaming can provide a recipe for a new pedagogy that brings traditional literacy and digital literacy learning together.

As this chapter will highlight, there is a gap in research about DGBLL to support English language learning for primary-aged children in the Saudi Arabian context. This study aims to fill this gap in knowledge by investigating teachers' perspectives on language learning, including the affordance and challenges of using digital games for teaching EFL with a focus on social practices, in a nation that has traditionally relied upon didactic approaches and teaching English in a prescriptive manner. The chapter now revisits the research questions outlined in Chapter 1. As previously noted, this research addresses one main question and three sub-questions about DGBLL as a pedagogy to support English language learning in the Saudi Arabian schooling context. The main question is:

What are primary teachers' perspectives on the potential of DGBLL for supporting social learning environments for teaching primary school children EFL?

The three sub-questions are:

RQ1: What are primary teachers' perspectives on using DGBLL to promote English as a social practice for their students?

RQ2: How does the use of DGBLL help advance primary students' English as a social practice?

RQ3: How do teachers integrate DGBLL into their EFL pedagogical practice?

To address these research questions, this study investigates teachers' perspectives prior to and after professional development in the use of Minecraft Education Edition and follows their journey as they trial using the game as a pedagogical approach to teaching EFL with primary-aged students. This is a new approach to teaching in the Saudi Arabian educational context (Alrabai, 2016), so the interviews with teachers as they integrate their new professional learnings in the classroom will reveal valuable insights. This chapter now reviews the research literature on two interrelated themes, namely, second language learning and second language learning through DGBLL, and highlights the gaps in the literature and the justification for this study.

2.1 Second Language Learning and Pedagogy

The first part of this second language learning section provides an overview of critical issues related to learning a second or foreign language. The second part extends this discussion on critical issues for foreign language learning specifically to the Saudi context.

Second language learning is a field of study that draws on a range of theoretical perspectives to understand the process of learning another language (Gass & Selinker, 2008; Juffs, 2011). Many second language researchers like Ellis (2014) have focused on the relationship between language instruction and language learning. They draw on a range of theoretical perspectives with the purpose of informing language pedagogy. As a result of the diversity of theoretical positions in the field, scholars such as Bakhshizsdeh and Alaie (2017) and Heini (2010) have concluded that second language learning should be driven by a problem-solving approach to reach an understanding of processes and principles of second language learning. A problem-solving approach would include language learners immersed in real-world activities such as interactions and communication through multiple-player video games. As players work collaboratively in gaming spaces, they need to solve problems to succeed and advance in the game. This process involves everyday social practices and communication with peers.

While this problem-solving approach to language learning is widely acknowledged as a key pedagogy for teaching a second language, many issues remain. For instance, Ellis (1989) described several issues that appear to be interrelated and critical to successful second language learning and are known to influence second language learners' achievement. The six issues identified by Ellis (1989) are (a) the learner's first language, (b) the natural route of language learning development, (c) individual differences between learners, (d) contextual variation, (e) comprehensible input, and (f) pedagogical approaches. Each of these points will now be considered in some detail.

First, a learner's first language can have a significant impact on their learning of a second language (Derakhshan & Karimi, 2015; Juffs, 2011; K. Karim & Nassaji, 2013). This challenge is due to the learner's automatic reliance on the structure of their first language while learning the second language (Dulay et al., 1982) as a strategy to facilitate comprehension, but in many cases, this is not supportive for learning the new language (O'Malley et al., 1990). For instance, Arabic texts are written and read from right to left, using a cursive script, whereas English is written and read from left to right. In Arabic there is also no distinction between lower and upper cases, the rules on the use of punctuation are less structured, and nominal sentences do not need verbs and typically comprise two nouns only.

The second important issue is the developmental continuum or "natural" route of language learning. Language development is an individual process influenced by independent factors such as motivation (Hall, 2017), aptitude, and anxiety (Dörnyei, 2010a). A third key issue is the effect of individual differences that can impact language learning, where not all second language learners share the same aptitude, motivation, personality, and cognitive style in learning (L. Dixon et al., 2012; Ellis, 1989; Juffs, 2011; Lowie & Verspoor, 2015), making it difficult for teachers to engage all students.

Variations in context is an important fourth issue to consider in terms of its role in language acquisition. Different situations influence different language skills and abilities (Ellis, 1989). Here, the context of language learning can make a difference, with immersion a key factor. Fifth is the importance of comprehensible input, where second language learners should be exposed to the second language input in terms of setting and instruction, including graphics, visuals, pictures, symbols that represent players' goals and strategies in video gaming environments, and the ability to search language while playing, such as using the internet (Z. Li et al., 2014).

Finally, the pedagogical approaches adopted for second language learning are crucial for supporting learning. Previous studies have illustrated how traditional approaches to second language learning, such as a teacher-centred approach (Alshahrani, 2016) and a focus on the

grammar-translation method, which are still used in Saudi Arabia, are less successful than approaches that also involve attention to pragmatics or language in use (Attar & Chopra, 2010; K. Richards, 2006; Tyler, 2008), because such pedagogies do not develop the communicative part of the language (Brown, 2007). For instance, EFL teachers can deliver formal language instruction but fail to provide an environment that enables the social aspect of the target language (the second language as opposed to the native language), which is beneficial for language education (Kongmee et al., 2011).

Yet, researchers suggest that the context of digital games provides a promising and ideal setting for second or foreign language learning as a social practice with opportunities for interactions and socialisation (Bytheway, 2014; Peterson, 2012; Reinders & Wattana, 2015; S. Thorne et al., 2009). Ellis (1989) identified six key issues in second language acquisition research, noted above, that remain influential (see Juffs, 2011), as they still reflect a pre-digital paradigm that does not sufficiently account for the complexities of language learning in technology-rich environments (Reinders, 2012). With the rise of digital literacies and game-based platforms, however, such frameworks need to be extended to explain the learners' engagement with multimodal input, interactivity, and socially situated practices. While foundational, Ellis's model must be extended in light of more contemporary theoretical perspectives (e.g., Reinhardt, 2019) that address identity, agency, and technology-mediated communication, a core concern in this present study. Importantly, these issues will influence researchers' understandings of pedagogical approaches to be used, and teachers' preparedness to engage with these pedagogical approaches.

Other considerations are also important in relation to teaching children a second or foreign language. For instance, several research studies have linked teachers' traditional language teaching techniques to ineffective pedagogical practices (Fakeye & Ayede, 2013; Lightbown & Spada, 2021). Experts such as Gardner (2001), Harmer (2001), Littlewood (1981), J. Richards and Rodgers (1986), and Tudor (1993) shed light on the important role of second language teachers as facilitators, instructors, consultants, and advisers for communication. Language teachers have a responsibility to continually enhance their pedagogical competencies to meet the evolving educational needs.

It is argued that proficiency would be improved by updating teaching skills and getting appropriate professional development, especially with the evolution of innovative pedagogical approaches that take advantage of advances in technology and innovations that can go hand-in-hand to teach a second language. This would provide guidance and new knowledge to inform as well as improve and extend the existing teaching and learning practices and contribute to the broadening of the language education field (Turgut & İrgin, 2009) and give

rise to new perspectives in language education (Selwyn & Bulfin, 2016). While the use of technology is being promoted as a new pedagogy, the use of digital games as a pedagogical resource is not new in language education; however, it is a new approach in the Saudi Arabian context. It is therefore important to examine teacher perspectives on the use of DGBLL in terms of what such an approach offers for providing an authentic, varied, and relevant context for language education (Swain, 2005).

Context is an important consideration in teaching children a foreign language. Some issues arise for teachers due to mandated curriculums and traditional pedagogical approaches that reflect the educational policies at a particular time and place. For instance, approaches to second or foreign language education in nations such as China and Japan (Suzuki et al., 2019), as well as Saudi Arabia (H. Alharbi, 2015), are influenced by rote repetition and memorisation of grammatical structures, which creates a mechanical understanding of the target language but does not translate to confidence in a real-life conversation (Ghazi-Saidi & Ansaldo, 2017; Mokhtar et al., 2017). Reliance on such approaches makes this current study timely.

To address challenges in learning English, many studies across the globe suggest using digital games to overcome the obstacles that impede learning a second language. For instance, research in this area has been conducted in the United States (Hitosugi et al., 2014; Rama et al., 2012; Vosburg, 2017; Zheng et al., 2015), Japan (deHaan, 2019; S. Thorne, 2008), Thailand (Reinders & Wattana, 2015), Korea (Y. Lee & Gerber, 2013; Suh et al., 2010), Finland (Piirainen-Marsh & Tainio, 2009), Sweden (Sundqvist, 2016), and New Zealand (Bytheway, 2014). As research in the field of digital games is increasing (Dehghanzadeh et al., 2021; Peterson, 2017; Reinders, 2017; Reinhardt, 2019), there is a need to provide new understandings about the affordance of using digital games for language learning in a variety of contexts, particularly in countries such as Saudi Arabia that have traditionally followed a prescriptive model of teaching English. The following section extends on the literature to look more closely at learning a second language through a digital game-based approach.

2.2 Second Language Learning Through DGBL

Since the turn of the 21st century, there has been an increased awareness of the positive effect authentic and informal learning methods can have on second language learning. As a result of growing awareness, there has been an increased interest in research focused on exploring the potential of innovative technological tools in the fields of CALL, language learning (Hung et al., 2018; Peterson et al., 2022; Reinhardt, 2019; Z. Xu et al., 2020), and the integration of modern technologies and digital-based gaming as a “new literacy” (J. Gee,

2007; Mills, 2010) that is integral to supporting learning a second or additional language (Parmaxi & Zaphiris, 2017). To discuss the potential of technological tools, the next section considers theories and assumptions about DGBL to enhance academic learning and then reviews studies that have examined DGBL.

2.2.1 Game-Based Learning

In our fast-changing world, Cope and Kalantzis (2009) have argued for advanced literacy teaching and learning methods to accommodate new technologies, as they noted "the world was changing, the communications environment was changing, and it seemed to us that to follow these changes, literacy teaching and learning would have to change as well" (p. 165). This perspective is even more true some 15 years on, with the advent of exciting new technologies to enhance game-based approaches to language learning that support multimodal learning of language (Albiladi & Abdeen, 2021).

Consistent with the need to adapt literacy teaching and learning methods to account for changes in technology, there has been an increased research interest in the use of DGBL as an effective learning tool to enhance students' learning (Adachi & Willoughby, 2013; Boyle et al., 2014; L. Dixon et al., 2012). The development of digital technologies has facilitated advances in game-based learning, such that this approach to pedagogy has received considerable attention (Egenfeldt-Nielson et al., 2019; Gros, 2007; Hong et al., 2009). Squire (2008, 2011), for instance, advocates for digital games as a tool for learning, practising, and living in a multiliterate world. Additionally, researchers internationally have examined the efficacy of game-based learning on learners' academic achievement (Beavis, 2017), particularly in relation to the effect of instant feedback on learners' positive attitudes towards game-based learning (H. Wang & Sun, 2011; Younie & Leask, 2013).

Research findings on the affordances of game-based learning have encouraged educators and scholars to develop a coherent theory supporting game-based learning in education (Kiili, 2005; Plass et al., 2015; Squire, 2005, 2011). Such theory on digital gaming includes a combination of behaviourist, cognitivist, and constructivist elements as the player engages different approaches to learning due to game designs that rely on knowledge and skills, incentive systems, learning mechanics, assessment mechanics, aesthetic design, narrative, and musical scores to engage at the "effective, behavioural, cognitive, and sociocultural level" (Plass et al., 2015, p. 262). This theory highlights how digital gaming creates a unique learning environment and player experience that other learning environments would have trouble facilitating (Plass et al., 2015).

This understanding of game-based learning suggests a changing stake in what it means to be literate in the era of ubiquitous computer and internet access and increasingly "natural" user/player–machine interfaces (Beavis et al., 2015; Zimmerman, 2008). During gameplay, players use their gaming literacies to achieve difficult but motivating tasks and develop new knowledge by navigating the complex, changing multimodal virtual environment. Buckingham and Burn (2007, p. 325) state that "game literacy also implies that there is something specific about this medium that distinguishes it from others—that we positively need game literacy as distinct from print literacy or television literacy, or even a broader notion like media literacy".

The effectiveness of digital gaming suggests that teachers should aim to achieve successful learning experiences by stimulating positive emotions for academic achievement. Apperley and Walsh (2012) invite teachers to combine digital gaming literacy with print-based literacy in teaching practices to provide a multimodal learning environment, which will diversify texts as visual, spatial, and auditory, and "invites differentiation among learners with different learning styles, abilities, and cultural differences" (Burke, 2014, p. 68).

To overcome some teachers' educational resistance to change, C. Miller (2008) encourages educators to integrate and engage creatively with their students by introducing digital games into their classroom programs. Research has also indicated that applying game-based learning and gamification approaches results in a more student-centred learning environment that enhances students' engagement and development of problem-solving capabilities (Bouras et al., 2004; Prensky, 2012). This student-centred approach is of particular interest in this current study that is positioned within the Saudi Arabian context, which has traditionally taken a more didactive and prescriptive approach to addressing the English curriculum without consideration for literacy as a social practice or how to bring informal literacy practices into the classroom.

Research on the use of digital games in classrooms has indicated that such activities can relieve students' learning stress (A. Clark & Ernst, 2009) and enhance learners' logical and analytical skills and abilities (Sharori, 2008), including fostering creativity in the classroom (Chan & Yuen, 2014). Digital games motivate the player to discover new challenges and explore new concepts (Díaz & Martín-Párraga, 2014) in addition to promoting collaborative work (Binkley et al., 2012). It is also argued that digital games deliver meaningful learning through providing players with "adaptive challenge, curiosity, self-expression, discovery, immediate feedback, clear goals, player control, immersion, collaboration, competition, variable rewards, and low-stakes failure" (Qian & Clark, 2016, p. 51) and allow for meaningful opportunities to use the target language in situated contexts (J. Gee, 2004).

Furthermore, digital games create opportunities for player social interactions by giving them experiences playing with and against each other to create a communicative space in the virtual world (Reinders, 2017). This approach is consistent with Vygotsky's sociocultural theory (1978) that proposes language develops from social interactions and communication with purposes and is supported by gaming researchers.

Such interactions can be extended from two players sitting beside one another to two or more players engaged in social interactions in online multiplayer games. Digital games function more as environments (Cornillie et al., 2012), and they provide context to language and space in which to use this language (Kuhn & Stevens, 2017) that may support language-specific learning. When using the online environment, players form what J. Gee (2004) calls "affinity spaces" (p. 67). J. Gee (2007, p. 208) notes that playing digital games creates affinity spaces where "knowledge, tools and technologies are leveraged for powerful networking". Further, he describes an affinity space as "a place or set of places where people affiliate with others based primarily on shared activities, interests, and goals, not shared race, class culture, ethnicity, or gender" (p. 67), and informal learning is a common outcome. Learners in affinity groups are bonded to the group through shared endeavours, goals, and practices (J. Gee, 2007), based on shared interest across time and space (Curwood, 2014).

Affinity group learners in DGBLL engage in physical or virtual social interactions; they discuss the game's content, help each other solve game-related problems, and facilitate common activities to reach common goals and objectives (J. Gee, 2004, 2007). There is now a growing number of affinity spaces for teachers who are passionate about participating in situated practice around emerging digital technologies to share knowledge and resources to improve their teaching practices (Duncan-Howell, 2010; Jacka & Booth, 2012; Krutka et al., 2016; Wesely, 2013). For instance, closely related to the current study that includes primary EFL teachers undertaking professional development and then using the Minecraft Education Edition with their students, Kuhn and Stevens (2017) created a public community of practice composed of EFL language teachers for professional development. The goal was to solve the problem of how to engage "young language learners in the digital world they inhabit" (p. 753) by dealing with Minecraft not as a software but as a participatory culture. The approach was to embed the educators in the social practices of a Minecraft massive open online course so they could benefit from the associated learning outcomes of Minecraft.

J. Gee and Hayes (2011) regard gaming affinity spaces as very important in terms of scaffolding good learning, and they point to the lack of such approaches in traditional schooling. The notion of scaffolding is anchored in Vygotsky's (1978) sociocultural theory and the zone of proximal development, which supports collaborative construction and

scaffolding of language that occurs through interaction (Weininger & Daniel, 1992) as learners receive support from a person with more knowledge and skills. Vygotsky's zone of proximal development merits play as a "leading factor" in children's development. Vygotsky (1978) placed play in a sociocultural context, where children can learn about social constructs when collaborating with adults or more capable peers to become active participants in the world around them. This process of socialisation enables children to succeed at things beyond their current activity and capabilities and helps them acquire skills beyond the educational development.

Scaffolding can be done by teachers, but in gaming it can also be other gamers—more competent peers with better language skills—who are able to expand the existing skills of the learner, providing a learning experience that allows for objectives beyond the reach of the player to be achieved (Raheem, 2011). According to Squire (2011), multiliteracies are traced within and across affinity spaces. They enclose multiple portals that suggest different interest-driven trajectories, opportunities to learn with others, and paths towards becoming an authentic participant.

Extending the idea of affinity spaces noted by Gee and Hayes (2011), an exploratory study by Peterson (2012) investigated the linguistic and social interactions of four intermediate English language learners in a massively multiplayer online role-playing game (MMORPG). The participants showed an appropriate use of greetings, informal language, small talk, and humour. Peterson (2012) suggests that DGBLL settings provide English language learners with collaborative communication for social interaction. In another digital ethnographic study, Y. Lee and Gerber (2013) connected English language learning to the World of Warcraft (WoW) online role-playing game. In this study, a 21-year-old Korean male was observed while playing WoW in English (as the target language) for a period of 1 year. Over this period, the researchers documented the changes in the participant's language. The researchers identified three distinct stages of English language development for this participant: first, the participant relied on his first language use; second, the participant started to pick up players' language and socialised and interacted with other players; and third, the participant started to communicate comfortably with his peers in English. According to Y. Lee and Gerber (2013), the participant's language developed as a result of his genuine interaction in the game.

From a sociocultural perspective, social interactions and participation play a fundamental role in facilitating language learning (Atkinson, 2002). Hence, simulation, adventure, and role-playing digital games (Reinhardt, 2019) that involve written or verbal social interactions among players in the gameplay, such in Minecraft (Beavis et al., 2017;

Kuhn & Stevens, 2017) and Grand Theft Auto (DeVane & Squire, 2008), are anticipated to be good candidates for second or foreign language learning (Reinhardt, 2019). In contrast, fighting games, puzzle solving, and sport games that require little use of language or social interaction among players (Reinhardt, 2019) and mainly require players to compete against other players in the game are not considered good options for second language learning. In this current study, Minecraft Education Edition is trialled as a pedagogy to advance foreign language students' everyday communication in English.

Gaming contributes to language learning in many ways. Oblinger's (2004) research has been reworked by Douch et al. (2010) to highlight eight essential principles of learning that apply to games: active learning, assessment, feedback, individualisation, motivation, scaffolding, social, and transfer. These principles are presented in Table 2.1.

Supporting the eight essential principles of learning in Table 2.1, work by Denning et al. (2011) argued that multiplayer games enhance players' socioemotional skills. These skills involve team collaboration and competition, communication, creation, systems thinking, and problem-solving, which have been argued to be 21st-century skills (Plass et al., 2015).

Scholars in the domain of second language acquisition have proposed more than 40 theories over the past few decades (Gass et al., 2020). While some of these theories have had an impact on the teaching and learning of a foreign language, especially in relation to communication fluency, many theories have had less impact on practice (Gass et al., 2020). A review of the theories indicates that three major learning paradigms underlie theories of second language acquisition (Reiser & Dempsey, 2018) and learning design (Ertmer & Newby, 2013), which are also connected to DGBLL that is the focus of this research study.

To sum up, J. Lee and Pass (2014) state that technological changes have imposed basic changes on students' approaches and attitudes to learning and the way learning processes are framed. Tapscott (2009) described those changes as an inevitable transition in the contemporary technology revolutionary era. Kleftodimos and Evangelidis (2016) suggest that the internet is the ultimate interactive environment, and that learning should shift from the traditional teacher-centred to a learner-centred approach, providing a more engaging and collaborative way of learning, which can be found in multiple-player game platforms (J. Lee & Pass, 2014).

Table 2.1

Principles of Learning That Apply to Games

Principle	The learner	How the principle applies to games
Active learning	The learner actively discovers and constructs knowledge	Games require player interactions in order to progress. Often the rules of a game are built for mastery as the player proceeds, and the skills and knowledge base are developed through participation in the game's tasks.
Assessment	A learner can assess their progress and make comparisons with their peers	Gamers can assess their progress and reflect on what skills they need to develop to achieve certain goals in the game. They are able to compare their achievements with other players' achievements and reflect on their past achievements.
Feedback	Instant and relevant feedback is provided to support learning	Feedback provided by games is usually immediate, relevant, and clear. It conveys the consequences of correct and incorrect choices, enabling players to learn from their successes and mistakes.
Individualisation (personalisation)	Learning meets the needs of the individual learner	Games are tailored to the individual through content and pre-set levels; in some complex games the gameplay can adapt to the individual's skills and knowledge by making tasks easier/more difficult or by providing/withdrawing support.
Motivation	When the task is meaningful and rewarding, the learner becomes motivated	A player becomes involved in a game for long periods of time to achieve goals that are both meaningful and achievable.
Scaffolding	Learning becomes gradually more challenging as the learner progresses, allowing for development	Games are often designed to include a number of levels through which a player moves as their knowledge and skills improve. When working in collaboration, players will share knowledge and skills to support the development of their peers.
Social	Learning involves others	Games can be played in multiplayer mode, whether individuals are using the same device or involved online. Some online games rely on large communities of players who work together to achieve goals within the game.
Transfer	Skills and knowledge acquired are not restricted to a single context	Gamers use knowledge and skills learnt through playing a variety of games and in real-world contexts. There is potential for learners to become more empowered and "rehearse skills for the 'real world' " (de Freitas, 2006, p. 7).

Note. Adapted from *Games Technologies for Learning: More Than Just Toys* (p. 17), by R. Douch, J. Attewell, and D. Dawson, 2010, Learning and Skills Network. Copyright 2010 by Learning and Skills Network.

2.2.2 Research on DGBLL for Second Language Learning

This section of the literature review considers the educational value of digital games in relation to second language learning and teaching. The use of digital games for second language learning reflects a significant area of CALL research, which has dramatically evolved with the growth of the internet and low-cost digital technologies (Peterson et al., 2022). Education researchers hypothesise that some features of contemporary digital games,

such as their rule-based nature, competition and rewards, immersion, problem-solving, social nature, and narrative, facilitate language learning (Peterson et al., 2022). Nevertheless, until now, few attempts have been made to review work in this area. Education researchers claim that commercial off-the-shelf and massively multiplayer online games (MMOGs), which were originally designed to serve entertainment purposes, have affordances for foreign language learning. This could be linked to their capabilities as a context that allows collaboration, produces the target language output, enables vocabulary learning, and lessens some of the influence of negative factors that would affect language learning (Peterson et al., 2022).

There is no doubt that digital devices have become an integral part of the Net Generation (Iivari et al., 2020; Prensky, 2001) evident in everyday life, where students have the choice to use them as tools or as toys. This has been extended to classroom teaching, with university-level students engaged in the use of technology to learn English. A variety of studies have investigated the use of digital games for language learning (Peterson, 2017; Reinders, 2017; Reinhardt, 2019; Sykes, 2018).

Contemporary studies on digital language learning have been conducted in a variety of first language backgrounds and contexts, both formal and informal. Many studies have highlighted the potential benefits of digital games in facilitating and fostering the four major English language skills of reading, writing, speaking, and listening. Studies have employed different approaches to obtain their findings and have mainly focused on one or two of these English skills. However, this current study focused on the social practices involved in playing such games. There has been some research into the specific social practices that game-based learning can develop.

For instance, Peterson (2012) used pre and post questionnaires for four university students as they engaged in video gaming. He found that the online game Wonderland, when used over a one-month period, provided a collaborative environment for target language use and social interaction that involved dialogue among participants through text chat that enhanced fluency in the target language. Through their interactions to get assistance related to the in-game tasks, participants in the study made proper use of politeness, which involved "greetings, informal language, small talk, humour, and leave-taking, as a means to support the operation of collaborative interpersonal relationships" (Peterson, 2012, p. 361). While the study provided useful insights into student interactions, this current study aimed to develop new understandings about teachers' perspectives on the value of such gaming pedagogies with younger students.

Moving from the university sector, Dickey (2015), in a qualitative study, investigated a group of four teachers' perceptions of the potential of digital games use for K–12 education.

These teachers taught across the following age groups: one early childhood, one middle school, one adolescent education, and one home-schooling cooperative for early childhood. In this study, the teachers came together to play the game Azada, as they had access to a free demonstration version for use in their own home in the evenings. After playing, all teachers expressed the value of integrating digital games in teaching and learning, after experiencing the engagement in the adventure game Azada. This current study extends such work by investigating primary teachers' experiences as they undertake comprehensive professional development in Minecraft Education Edition and apply such an approach with students.

In many studies, DGBLL has been identified as having a positive impact on linguistic development, specifically, vocabulary development. For instance, considerable improvement in participants' vocabulary knowledge was observed when The Sims game was used for learning second language vocabulary (Ranalli, 2008). Similarly, an online gaming study showed that the experimental group outperformed the control group in the post-test score, indicating an improvement in English vocabulary learning among Iranian English language learners (Yip & Kwan, 2006).

The incorporation of The Sims game into second language vocabulary teaching has been found to be pedagogically beneficial. It not only improved vocabulary retention but also resulted in students developing more positive attitudes and improved English language skills (Bytheway, 2014; Coxhead & Bytheway, 2015; Rudis & Poštić, 2017; Scholz, 2016).

In the context of digital games and autonomous second language vocabulary skills, a positive relationship was observed in a study conducted with 15- to 16-year-old learners (Sundqvist, 2009). Steinkuehler's (2007) study further stressed the importance of learners' gaming literacy practices, which assist learners in acquiring language learning during MMORPGs due to the social implications associated with playing such games.

Research has also demonstrated the impact of gaming on second language learning in a broad sense, more specifically in relation to writing. In an experimental study, it was found that the experimental group gained stronger literacy skills compared to their control group peers, suggesting that video games addressed the experimental participants' literacy learning needs (Mifsud et al., 2013). This finding supports the integration of video games in classrooms to support second language learning.

In a similar vein, frequent gamers (university students) were found to achieve higher scores than their peers in the development of their English writing skills (Sundqvist, 2016). The use of game elements along with problem-based learning strategies in a digital learning environment was examined to improve students' writing skills. The results of the study

demonstrated that the students were motivated by the narrative structures and showed writing skills improvement in just seven treatment periods (Warren et al., 2008).

Scholz (2016) conducted research on the effect of a multiplayer game, WoW with 14 German language learners in an extramural setting with no instruction or intervention from the researcher. The findings included that the gaming environment for language development transfers the linguistic constructions from a gaming context to non-gaming contexts.

DGBLL can improve university-level foreign language reading skills through the reading of in-game texts (Chik, 2014). At the same time, DGBLL seems to increase the confidence of low-achieving university-level second language learners in addition to enhancing English reading self-efficacy (Lu et al., 2011). In this way, DGBLL provides second language learners with opportunities to engage in authentic social interaction with other players who are both native and non-native speakers of the target language (Rankin et al., 2006).

In a pilot study, the interactions of four English as a second language (ESL) students who played Ever Quest II for 4 hours a week over a period of 4 weeks were investigated. Findings showed that students' target language output increased by 40% as a result of interaction with non-playing characters whose roles involved giving directions and providing information (Rankin et al., 2006).

Social interaction between players participating in Ever Quest II was further examined in another study, which involved 18 ESL students and 8 native-speaker players. Findings showed ESL students' target language output increased significantly when they interacted in the target second language with their native-speaking interlocutors. Findings also suggested that Ever Quest II, and possibly digital games in general, increased learners' motivation and engagement and encouraged learners to be active and to interact in the virtual world, thus giving them the opportunity to learn the target language through social interactions and scaffolding in learning informed by Vygotsky's (1978) sociocultural theory (Rankin et al., 2009).

Digital games create the opportunity for social interactions, whether text chat or dialogue, in and out of the game environment through different means. Social interactions are identified as beneficial in the sociocultural account of language learning (Peterson, 2012). Gaming researchers (e.g., H. Chen & Huang, 2010; Peterson, 2012; Sundqvist & Sylvén, 2014) propose that interaction through DGBLL contexts can be achieved through the following means: interacting through collaborating and competing with other players, interacting with game characters presented in the virtual environments, interacting and collaborating with other online players through blogs and discussion forums to discuss gaming issues, and interacting with friends and peers to discuss gaming experiences and challenges. These forms of interaction all

contribute to the players' language development through their social interaction with more knowledgeable and highly skilled members of society (Vygotsky, 1986).

Studies have looked at the effect of digital games on second language learning in East Asia and the Middle East with primary through high school students (Acquah & Katz, 2020). However, most of the research has been mixed methods with a large number of studies involving higher education EFL students, and focused on learning of English using computers. Findings showed that DGBLL was effective as a learning tool for language education, with results such as better vocabulary retention (S.-M. Lee, 2023); positive speaking outcomes (Hwang & Wang, 2016); developing problem-based English listening skills (Hwang et al., 2017); better communication skills (C.-J. Wu et al., 2014); increased learner confidence when communicating in the target language in digital environments (Reinders & Wattana, 2014); an increase of 30% in spelling and knowledge test results (Dourda et al., 2014); and improved pronunciation, with learners in the experimental group performing better than the control group in post-test scores (Young & Wang, 2014). Furthermore, findings of this systematic review (Acquah & Katz, 2020) show that playing digital games pushed the players' motivation and then also their level of interaction. The review shows that 70% of the outcomes were positive. The studies show that DGBL provides the opportunity to expand the classroom beyond four walls by bridging schools and enabling cross-cultural communication (Acquah & Katz, 2020).

Each study reviewed above focused on two important areas of digital games and language learning. All studies were intended for intermediate, high school or university students with different first languages and aimed to improve one or more fundamental language skills in the target language (reading, writing, speaking, listening) using commercial off-the-shelf games. This review also showed that most of the studies were not restricted to the school setting. Furthermore, the identified digital games used in the previous studies were role-playing, adventure, and simulation games, which provide language exposure and enhance interactions and communications among the players (Chik, 2014). Also, some studies investigated the perceptions of teachers and learners about the affordances of DGBLL for learning a second language.

However, only a few studies have analysed the affordances of digital games as a medium for EFL learning with primary students. Since this current study focuses on EFL education for primary students in the Saudi context, it is important to examine previous research that has investigated the use of digital games in primary contexts, where it is common for second language learning to start in the primary level (Acquah & Katz, 2020). Table 2.2 identifies 17 studies that have analysed gamification and second language acquisition in primary education in

different contexts and using different methodologies, participants, and data analysis methods. These studies, however, do not investigate the use of digital games for English language learning from a sociocultural approach or an understanding of literacy as a social practice.

Table 2.2

A Critical Review of Literature on DGBLL in Primary School Contexts

Reference	Methodology	Research participants	Focus and key findings
Suh et al. (2010)	Quantitative	302 × 5th grade and 6th grade students	Focus: To investigate the effectiveness of massive multiplayer online role-playing game-based instruction on elementary students' English education. Key findings: Findings suggest that MMORPGs help improve EFL learners' abilities to learn English. Experimental groups showed higher scores in listening, writing, and reading skills.
Butler et al. (2014)	Quantitative	3,945 × 4- to 12-year-olds	Focus: To examine the relationship between learners' use of online games and English performance in a related assessment. Key findings: There were varying relational patterns between young learners' scores and English performance depending on the games and difficulty levels of the assessment. The more attractive games did not necessarily yield strong learning results.
Dourda et al. (2014)	Quantitative and qualitative	17 × 11- to 12-year-olds	Focus: To test foreign language learning from an educational geography computer game. Findings: Students showed improvement in the knowledge test. Data showed an improvement in the students' vocabulary and spelling. Students seemed to comprehend texts more, and their use of reading strategies was enhanced. In addition, students reported more satisfaction, enjoyment and cooperation.
Pennala et al. (2014)	Quantitative	4 × 7-year-olds	Focus: To test the efficacy of game activities on the Finnish phonemic length to enhance accuracy. Key findings: Learning occurred through Graphogame, and follow-up assessments showed improvement for two out of the four children involved in the study.
Sandberg et al. (2014)	Quantitative	106 × 8- to 9.5-year-olds	Focus: To investigate the value of a gaming context on vocabulary learning using an English learning application on mobile phone. Key findings: Experimental group outperformed children from control group despite not spending more time on the learning material.
Lan (2015)	Quantitative and qualitative	132 × 4th to 6th grade students	Focus: To create a 3D virtual immersive EFL learning context as an English complementary course. Key findings: Positive results indicate that a virtual context in EFL learning would (a) support language education without the time and space constraints, (b) offer learners a game-like scenario, and (c) enhance the students' EFL performances.

Reference	Methodology	Research participants	Focus and key findings
Si (2015)	Quantitative	20 × 6- to 8-year-olds	Focus: To create a suitable learning environment for children to help them practise their language and culture skills. Key findings: • Children were motivated. • More students were engaged in the process of learning. • Language skills in relation to vocabulary and speaking were improved. • No improvement relating to listening skill was noticed.
Dalton and Devitt (2016)	Quantitative and qualitative	25 × 9- to 10-year-olds 15 × 10- to 11-year-olds	Focus: To assess the potential of using a 3D virtual environment for learning Irish by using task-based language learning and cooperative learning principles. Key findings: No significant gains from the language post-test, possibly due to the intervention being short. The most frequently occurring theme from the interviews was goal orientation. This reveals the children would prefer a game environment with clear goals.
Da Rocha Seixas et al. (2016)	Quantitative and qualitative	61 × 8-year-olds	Focus: To study the effectiveness of gamification in the engagement of elementary school students using badging platforms. Key findings: Badging platforms increased the students' motivation and engagement in addition to enhancing the students' cognitive skills.
Hwang and Wang (2016)	Quantitative and qualitative	50 × 6th grade students	Focus: To explore elementary students' performance after using digital computer games as an approach to learning vocabulary with different guiding strategies. Key findings: Experimental results showed that students learning with the cloze guiding strategy showed better performance than their counterparts learning with the multiple-choice guiding strategy.
Kayımbaşıoğlu et al. (2016)	Quantitative	60 × 5-year-olds	Focus: To observe the impact of the integration of gamification context on learning environments and language acquisition for preschool students. Key findings: Assessment results revealed significant performance improvement by 68% to 81% on the acquisition of knowledge.
Mazaji and Tabatabaei (2016)	Quantitative	60 × 8- to 12-year-olds	Focus: To test the effectiveness of digital games on learning vocabulary for Iranian EFL students. Key findings: The experimental group using digital games outperformed the control group using course books in vocabulary learning.
Yang et al. (2016)	Quantitative	50 × 9- to 10-year-olds	Focus: To investigate English learning performance after the implementation of DGBL with a badge mechanism. Key findings: Positive results show the positive influence a badge mechanism has on the self-efficacy and English performance of the learner.
Hsu (2017)	Quantitative	38 × 9-year-olds	Focus: To explore the effectiveness of two augmented reality (AR) educational game systems for elementary school students to learn English vocabulary.

Reference	Methodology	Research participants	Focus and key findings
			Key findings: Children had high learning effectiveness using task-based AR and self-directed AR. No important results of learning style were noticed on students' flow state.
Rawendy et al. (2017)	Quantitative	30 × 6- to 12-year-olds	Focus: To help primary school students learn second EFL using digital games and mnemonic content. Key findings: Students were motivated. Pre- and post-test results showed an improvement in the students' scores after integrating the game in the classroom.
Homer et al. (2018)	Quantitative	120 × 6- to 11-year-olds	Focus: To compare the results of the use of digital badges and points on behaviour and EFL learning after implementing digital badges and points in ClassDojo platform at an elementary school. Key findings: Pre- and post-test results showed a better performance and an improvement in oral post-test scores compared to the control group. There was no significant change in post-test scores in reading.
Utku and Dolgunsöz (2018)	Quantitative and qualitative	46 × 11- to 13-year-olds	Focus: To examine the impact of online games on vocabulary learning of young EFL learners. Key findings: Positive results showed that the experimental group was highly motivated and outperformed the control group.

Note. DGBLL = digital game-based language learning; EFL = English as a foreign language; MMORPGs = massively multiplayer online role-playing games.

All the studies presented in Table 2.2 focused on primary students aged from 5 to 13 years old in different contexts. The major areas of investigation included learning vocabulary and improving foreign language skills within a classroom, which implies a formal research context with or without teacher facilitation. Most research findings were positive, as students in the experimental group using digital games were likely to attain higher scores in the target language than their counterparts in the control group using course books. These promising results from the existing research provide valuable insights into the ways in which EFL primary teachers could use digital games as a supplementary material to facilitate foreign language learning.

Yet, the list of the previous studies presented in Table 2.2 illustrates that this current study adds something new to the literature because it focuses on learning a foreign language as a social practice, and it also involves participants in a comprehensive Minecraft Education Edition professional development program. It also implements an in-depth interview methodology, taking a thematic approach to data analysis informed by sociocultural theory. This is the first study to explore teachers' perspectives on the affordances of DGBLL for learning EFL as a social practice through Minecraft Education Edition. It investigates the

potential of this game-based pedagogical tool to improve English proficiency of primary-aged children in the Saudi Arabian context.

To conclude, previous research in different contexts has supported the effectiveness of digital games in enhancing second language learning. Most of these studies have investigated the effect of digital games on EFL learners at university level, while few have taken an in-depth qualitative approach adapting a sociocultural lens to examine digital games in supporting English language learning in the primary school context, indicating a gap in the literature that this current study aims to address.

2.3 Minecraft for Language Learning

Minecraft is a 3D digital sandbox video game and, more descriptively, a kind of virtual LEGO (Beale et al., 2016; Craft, 2016) that adds emergent gameplay possibilities to a simulation (Reinhardt, 2019). It was created in 2009 by Markus Persson in the Java programming language, and was then developed and officially released on November 18, 2011, by Mojang. Since its release, Minecraft has been expanded to several other platforms, such as mobile devices and personal computers and consoles. Minecraft has grown in community and had sold over 300 million copies by April 2023 (Clement, 2023), with 131 million monthly active users when people were staying home due to the COVID-19 pandemic (Vincent, 2020).

Minecraft has received much attention, owing in part to the new concept and player-driven narrative (Marklund et al., 2013). Minecraft features pixelated building blocks (Goldberg & Larsson, 2013) and open-ended play that allows players to freely create and manipulate their own created world (Milton et al., 2017). The gameplay in Minecraft is open and unguided, which places a great responsibility on its players to set their own goals and play the game as they see fit (Marklund et al., 2013). This format, along with the multiplayer online component that allows players to collaborate or compete against each other (Cilauro, 2015; Overby & Jones, 2015), provides opportunities to develop an interactive learning environment and to engage in language in order to play the game, which together promotes participatory culture (Jenkins, 2015).

Recent research suggests that using Minecraft in education offers many educational benefits, including collaboration, creativity, differentiation, digital citizenship, engagement, fun, independence, leadership, and relevance (Gallagher, 2014). The potential of Minecraft as a learning resource continues to be explored in current literature in fields such as geography (List & Bryant, 2014), mathematics (Bos et al., 2014), science (Short, 2012), art (Overby & Jones, 2015), literature (Lucci et al., 2016; Schifter & Cipollone, 2015; Shah et al., 2014),

humanities (J. Miller, 2014), and programming through the add-on ComputerCraft (Trombley & Miller, 2013). However, it is important to note that these educational studies are based on a very limited empirical scope.

Embracing the affordances of digital games for literacy learning in the 21st century is well established (Apperley & Beavis, 2013; Apperley & Walsh, 2012; Beavis et al., 2009; Buckingham & Burn, 2007; J. Gee, 2003; Steinkuehler, 2007; Zimmerman, 2008), with an increased focus on the learning affordances of Minecraft (Dezuanni et al., 2015; Richardson, 2015). Unlike other video game types with an emphasis on frequent repetition, drilling, and quizzing as the primary gameplay features, Minecraft provides learning with no specific learning content. In addition to being entertaining, Minecraft involves a considerable amount of critical thinking, engineering, collaboration with others in the game, and flexibility in what players can focus on (Ellison et al., 2016), in addition to being a non-violent game already in use for subject-specific educational purposes (List & Bryant, 2014).

Though only limited research is available on its application, Minecraft is widely played, is one of the most popular video games with primary-aged children, and has potential for fostering second language learning (Beavis et al., 2017; Kuhn & Stevens, 2017; Uusi-Mäkelä, 2015; York, 2015). It is important to note that Minecraft Education Edition is the same as the original game Minecraft, with only a few additions targeted for educators that make it more useful and appropriate to a school setting. These include features such as non-player characters that provide instructions, chalkboards to display learning tasks, a Classroom Mode for teacher oversight, and a Code Builder to support programming activities, all of which enhance its educational usability (Minecraft Education Team, 2021). Minecraft's open-ended feature and collaborative approach encourage student communication and context-based gaming (Kuhn & Stevens, 2017), thereby aligning it with a social constructivism perspective by giving players "the ability to learn how to learn" (Banks & Potts, 2010, p. 6).

While much of the existing literature highlights the pedagogical benefits and affordances of DGBLL in enhancing learners' engagement, motivation, and language development, it is equally important to adopt a critical stance toward its implementation in EFL classrooms and make visible the challenges for teachers and schools. Despite its pedagogical potential, the integration of DGBLL into formal educational settings is often hindered by practical constraints such as institutional policies, teachers' lack of preparedness, and concerns about curriculum alignment (Peterson, 2012). Additionally, some educators remain sceptical of the academic value of digital games, viewing them as distractions rather than legitimate educational tools (deHaan, 2019; Gutierrez et al., 2023). These tensions between the theoretical benefits and real-world constraints help explain why traditional methods continue to dominate EFL classrooms,

particularly in contexts such as Saudi Arabia, where systemic and cultural factors strongly influence pedagogical choices (Sulaimani, 2016).

2.4 Conclusion

The purpose of this chapter was to review international literature concerning second language learning, the affordances of digital games for learning EFL, and the potential of Minecraft Education Edition as a game-based pedagogical tool for supporting language learning as a social practice. This review has highlighted how language researchers have investigated advances and innovations in digital technologies for second language learning and how using digital games in the field of language education is offering rich opportunities for supporting English language development (Kruk & Peterson, 2020; Reinhardt, 2019). To help address the lack of English language skills in the Saudi context, this current study builds on this research related to game-based approaches to teaching EFL to investigate teachers' perspectives on using such pedagogical tools with primary-aged students to engage them in a rich social environment so they can interact, socialise, collaborate, and co-construct meaning through digital technologies. This approach provides opportunities to bring children's informal everyday practices into the classroom.

The following chapter highlights the methodological approach to this research. It describes, elaborates, and justifies the methodology for the study in relation to the research questions, as well as the sociocultural theoretical framework chosen for this study. It provides details regarding how sociocultural theory informs the study, outlines the research design, and describes the nature of the research sites and teacher participants, as well as the Minecraft Education Edition professional development element that is required as part of participation.

Chapter 3: Theoretical Framework

3.1 Introduction

The preceding literature review chapter established the foundation for building the theoretical framework that provided a lens to guide the research design and inform the analyses and interpretation of the data gathered as part of the study. It presented key international literature related to second language learning and the affordances of DGBLL for EFL learning. It also shed light on the importance of taking a game-based approach to teaching EFL to develop 21st century literacies among students. New literacies practices, sociocultural theory, digital literacies, and multiplayer games as tools in literacy pedagogy in a diverse and continually changing multicultural society were also discussed.

In this chapter, the following sections present the importance of the selected theoretical framework—informed by sociocultural theory and multimodal social semiotics—for studying the affordances of multiplayer digital games for advancing social interactions and language learning among EFL students. This approach was selected to investigate EFL teachers' perspectives on using Minecraft Education Edition as a pedagogical tool for supporting language learning as a social practice because it offers a theoretical perspective to investigate how sociocultural contexts can extend EFL learning.

Given the multimodal nature of children's practices when using technology (Kress, 2010), and due to Minecraft's popularity among primary school students (Reinhardt, 2019), this study requires a strong framework to guide the investigation of the social affordances of Minecraft Education Edition in the development of EFL students' English not only on a linguistic level but also on personal, academic, and social levels under the umbrella of the pedagogy of multiliteracies proposed by the New London Group (1996). Specifically, the study is informed by the sociocultural approach presented in this chapter to answer the three RQs, restated here for convenience. In the context of Saudi Arabia:

RQ1: What are primary teachers' perspectives on using DGBLL to promote English as a social practice for their students?

RQ2: How does the use of DGBLL help advance primary students' English as a social practice?

RQ3: How do teachers integrate DGBLL into their EFL pedagogical practice?

To answer these questions, the theoretical underpinnings presented in this chapter inform the analysis of teacher responses from a series of interviews before and after their

implementation of Minecraft Education Edition in the classroom with an understanding that literacy is a social practice that plays an important role in language acquisition (Street, 2013).

The literature reviewed in the previous chapter on new literacy practices and the social interactions of EFL students in digital environments illustrates their importance to this current study as it shows the social affordances of digital games for EFL students. Despite the growing awareness of the opportunities afforded by digital technologies that allow learners to socially interact through literacies in a variety of formats and modes that transcend the alphabetic world (Lotherington & Jenson, 2011), and while research on the multimodality potential or constraints of digital games for social interaction is ongoing, there is still a limited understanding of their full range (Bellotti et al., 2010; Gallup et al., 2016; Rakkolainen et al., 2021). Hence, it is still not clear what EFL teachers think about the social affordances of digital games for teaching EFL, making this current study a vital contribution to the field.

This study is situated within the framework of NLS, which seeks to understand the relationship between literacy practices and social and cultural contexts (Cope & Kalantzis, 2000). Drawing on NLS concepts and approaches, this study explores the potential of digital games as a form of digital multimodal literacy in EFL contexts (J. Gee, 2000). By examining how EFL teachers facilitate digital games with their students and the literacy practices that emerge from this engagement, this study seeks to deepen our understanding on the complex and dynamic ways in which digital games can facilitate language learning and social interactions (J. Gee, 2003; Lankshear & Knobel, 2011).

Specifically, this study builds on NLS research on multimodal literacies (Jewitt, 2008; Kress, 2003) to investigate the multimodal nature of digital games literacy and their potential to enhance language learning outcomes, using a sociocultural perspective. The study examines how DGBLL can support language learning as a socially situated and culturally mediated process that occurs through interactions with others and the surrounding environment, while also leveraging the diverse range of modalities present in digital games to enhance the language learning outcomes. By situating this study within the NLS framework, we can gain insight into the social and cultural dimensions of digital game literacy and their implications for teachers' pedagogical approaches to language learning in EFL contexts (Luke, 2000; Pahl & Rowsell, 2012).

Within the NLS framework, the study draws on sociocultural theoretical underpinnings to understand literacy practices within social and cultural contexts (Cope & Kalantzis, 2000). In this study the context is the technology-mediated environment offered by digital multimodal games that offer scaffolding—environments that provide support to extend the language learners' expertise beyond what they can achieve independently—to advance

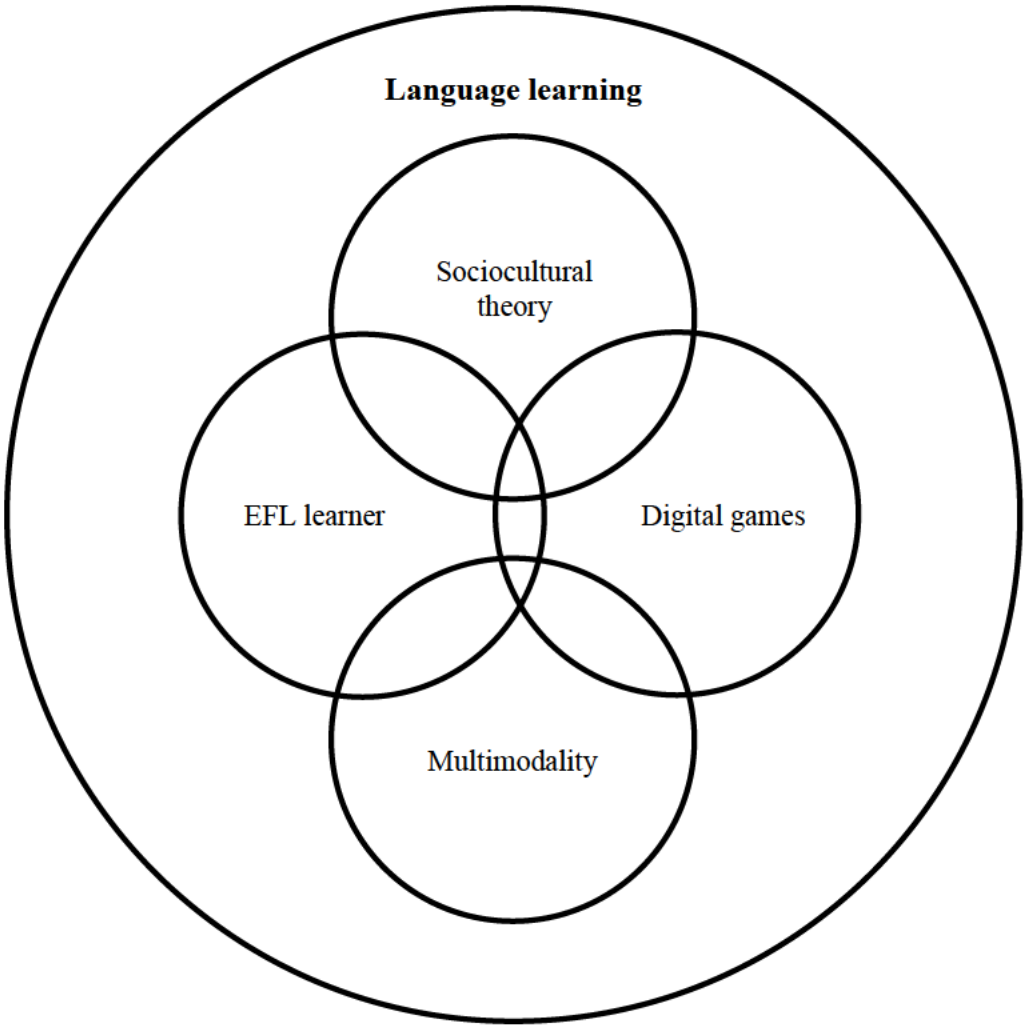
language learning. This scaffolding, discussed in some detail later, takes place as players interact and collaborate with peers, but language learning is also supported by scaffolds provided by the multimodal nature of the gaming environment where interactive audiovisual gameplay draws on text, audio, and moving images. Importantly, digital games provide players access to environments that are important for language learning that is facilitated by social interaction (Plass et al., 2015).

Vygotsky's sociocultural theory is one of the most well-known and most frequently cited theories that has influenced education to understand how learning takes place during social interactions between individuals as social beings (Jabbari, 2021; Sarmiento-Campos et al., 2022). On the other hand, the integration of non-traditional texts and application of multimodal approaches in this study recognises the rapidly changing demands of today's learners, an approach which acknowledges the role of digital literacies to support language learners while meeting evolving education standards. These two approaches to the study are closely integrated and interrelated within the contexts of online multiplayer games and the social interactions of students within the EFL education environment (Kress & van Leeuwen, 2001; S. Thorne & Reinhardt, 2008)

The framework illustrated in Figure 3.1 draws on sociocultural theory (Vygotsky, 1976) and multimodal theory (Jewitt, 2017) to present an integrated lens that emphasises the affordances of the zone of proximal development (Vygotsky, 1976), scaffolding (Vygotsky, 1976), multimodal literacy (New London Group, 1996), and affinity spaces (J. Gee, 2004, 2007) to advance language learning. The figure visually depicts the interrelated concepts and relationships of these theoretical constructs that are presented in this chapter and serves as a useful tool for understanding how digital games can facilitate language learning and social interactions among EFL students.

Figure 3.1

Representation of the Theoretical Framework for Understanding Digital Games in EFL Contexts



Note. EFL = English as a foreign language.

Figure 3.1 illustrates the theoretical framework that underpins this study. The intersecting circles represent the relationship between sociocultural theory, multimodal social semiotics, and DGBLL. These frameworks are interconnected in their emphasis on interaction, context, and learner agency within the EFL classroom. The sections that follow explain each component in detail, showing how they combine to inform the use of Minecraft Education Edition as a language learning tool.

In the context of EFL education, the adoption of sociocultural theory (Vygotsky, 1976) and social semiotics (Jewitt, 2017) is advocated in this study for broadening our understanding of the potential and constraints of DGBLL as a pedagogical approach for promoting social interactions among EFL students. The approaches illustrated above can provide insights into the complex social and cultural dynamics at play in the DGBLL context, as well as the various modes of communication and expression involved in the EFL context. By examining these concepts, this exploratory case study can shed light on the potential and

constraints of digital games as a tool for promoting language learning, and the findings can inform teachers' pedagogical approaches so that they have a better understanding of how digital games can be leveraged to better support social interactions and language education among EFL students.

3.2 A Sociocultural Approach to the Study

This study conceptualises literacy from a sociocultural perspective with the view that communication skills develop through effective social participation and can be advanced as young people engage in literacies across multiple modes. Extending the traditional concept of literacy development where the focus on reading and writing is transmission of essential skills, literacy as a social practice (Barton & Hamilton, 2000; J. Gee, 1992) emphasises the importance of the "social relationships and institutions within which literacy is embedded" (Barton & Hamilton, 2000, p. 16). That is, literacy practices take a variety of forms that are embedded and situated in everyday life within specific social and cultural contexts (Barton et al., 2000).

A sociocultural approach to teaching and learning underlies the contextually situated and mediated nature of mental activity (Vygotsky, 1978). Sociocultural theory highlights the important role of social interaction in the development of cognition, and it sees learning as an activity that is first socially mediated by a peer or expert before it is internalised (Rheinhardt, 2019). It is through cooperation and collaborative interactions with others on a variety of tasks that learners internalise socially shared experiences, with associated effects leading to the acquisition of useful strategies and knowledge (Scott & Palincsar, 2013).

In more recent years, researchers have drawn on sociocultural theory to justify the integration of digital games in language education. For example, Thorne (2008) and Reinders (2012) argued that digital games can serve as mediational tools that foster interaction, collaboration, and contextualised language use, all central tenets of sociocultural learning. This theoretical alignment underpins the current study's exploration of Minecraft Education Edition as a tool for promoting EFL learning through socially situated play.

Building on this foundation, sociocultural theory has been instrumental in justifying the use of digital games in the area of language education (Lantolf & Thorne, 2006; S. Thorne, 2008). This theoretical approach is built on the premise that cognitive development cannot be understood without reference to social activity. Furthermore, sociocultural theory is based on a belief that learning is a culturally and historically situated social process (K. Thorne, 2003) and is best achieved through collaboration and engaging in dialogic peer feedback. Nowadays, digital communication technology is perceived as a catalyst for a pedagogical shift in language learning (Kramsch & Thorne, 2001). As noted by S. Thorne and Reinhardt

(2008), there is a growing acknowledgement of the benefits of digital technology in helping second and foreign language learners improve their social communication skills both inside and outside the classroom. From a sociocultural perspective, early work pointed to the affordances of computer-mediated communication tools in language education to foster collaborative learning in a variety of ways (Caws, 2006).

Based on this perspective, Vygotsky developed an instructional area and coined the term *zone of proximal development* or ZPD, which is defined as the space between what a learner can do without help and what a learner can do with support. From this perspective, language emerges and develops through the learner's social interactions with other participants within a particular social context, which can be mediated by technologies within gaming environments (Rama et al., 2012). The ZPD brings in a social learning aspect to bridge the gap between what is known and what is unknown. The ZPD focuses on the learner's abilities to learn new concepts supported by more knowledgeable peers or tools as external support, which facilitates knowledge and leads to further cognitive and psychological development (Shaabi, 2010).

Children's attainment of the English language requires basic skills such as phonics, grammar, spelling and punctuation, and reading comprehension; however, when literacy is viewed as a social practice (Barton & Hamilton, 2000), the acquisition and application of such basic skills are only a part of what people do. Literacy is context embedded, used to achieve social goals, and imbued with the policies and ideologies of the social settings in which it occurs. As discussed in the literature review, from the perspective of sociocultural theory, digital games facilitate important opportunities for interaction, communication, collaboration, and scaffolding, and create spaces that reflect the ZPD in language learning (Nassaji & Swain, 2000).

Sociocultural theory has received considerable attention from scholars in the field of literacy, and it has been used as a theoretical framework for second language acquisition across an extensive body of literature (e.g., Firth & Wagner, 2007; Lantolf & Thorne, 2006; C. Lee & Smagorinsky, 2000; Nassaji & Swain, 2000). Important for this study, Vygotsky's (1978) sociocultural theory, based on constructivist learning theory, asserts the importance of the social situation and mediated nature of mental activities in language learning. This perspective is supported by Swain and Lapkin (2013), particularly with reference to second language learning, because this combines cognition and emotion into social learning, explaining that both comprehensible input and comprehensible output are required for successful second language learning. Drawing on Vygotsky's sociocultural theoretical framework, a number of second language learning researchers such as Lantolf (2000) have

criticised current practices that rely heavily on the individual's cognition by disconnecting language from social and contextual environments.

From a sociocultural theorist point of view, language development is considered a social discourse (Wertsch, 1998) that occurs through social and language interactions as individuals co-construct knowledge in a given social context (see, for example, Rama et al., 2012). Further, it is argued that online digital games can provide this interactive context because they contain a social context for language learners to experience and experiment with learning a particular language (J. Lee & Pass, 2014). It has been claimed that sociocultural theory has played a pivotal role in the justification of implementing DGBL in language education (Lantolf & Thorne, 2006; S. Thorne, 2008). Supporting this argument is the fact that when players meet other players online, they create contexts that demand language use. They communicate, collaborate, and compete, all in real time, which provides a great opportunity for exposure to comprehensible second language input as well as opportunities for second language output and feedback arising from natural communicative interaction (Reinders, 2017).

This sociocultural understanding provides a rich theoretical basis for informing second language learning research—for example, second language input as per Krashen (1982) and second language output as per Swain (2005). This previous research supports the argument that online digital games (as a well-designed experience) provide players with an interactive and collaborative community (social context) to support sociocultural engagement, where players can connect, communicate, trade items, and immerse themselves in activities closely related to real-life settings (construction of knowledge through activities)—a context that many traditional language classrooms fail to meet in the absence of purposeful communication and information exchange. In this way, sociocultural theory provides an ideal lens through which to investigate teachers' perspectives on their experiences integrating DGBLL into their practice in this current study.

3.2.1 The ZPD

The concept of ZPD was developed by Vygotsky in the end of the 1920s. It is where the transfer from "the social plane to the cognitive plane" happens (Antón, 1999, p. 304). Vygotsky defined the concept of ZPD as "the distance between the actual development level as determined by independent problem-solving and the level of potential development as determined through problem-solving under adult guidance or in collaboration with a more capable peer" (1978, p. 86). The term *proximal* implies that the provided support goes only slightly beyond the learner's current competence and complements and builds on their existing skills (Cole & Cole, 2001). In line with the above definition, Vygotsky establishes

two developmental levels in the learner. The first level describes the actual or current developmental level of the learner's achievement without help from others, while the second level is the higher level of potential development of the learner's ability when they are offered assistance from others (De Guerrero & Villamil, 2000).

Vygotsky (1978, p.90) believed that the ultimate goal of learning is to "generate and lead development which is the result of social learning through internalisation of culture and social relationships". In other words, when Vygotsky analysed the relationship between learning and development, he suggested that:

> teaching/learning helps awaken a variety of developmental processes that are able to operate only when children are interacting with people in their environment and in collaboration with their peers. Once these processes are internalised, they become part of the child's independent developmental achievement. (Vygotsky, 1979, p. 90)

Appel and Lantolf (1994) argue that during the different developmental processes of learning, children engage and interact with their peers or more knowledgeable others (MKOs) with higher ability level, who begin to instruct the children to solve problems strategically and give them implicit or explicit feedback (Lantolf et al., 2015); this support then diminishes gradually and the children are able to perform the required tasks independently without realising that they are actually involved in a strategic activity. Hence, it is noted that when working in the ZPD, it "is not the successful completion of tasks that is of importance, but the higher cognitive process that emerges as a result of the interaction" (Appel & Lantolf, 1994, p. 10).

Seminal researchers suggest that the active involvement and vital social interaction between the novice and more experienced peer develops into a mutual gain. This mutual gain shows as the novice gets guidance and support from the expert peer, who in turn benefits from the social interaction (Van Lier, 1998). This novice–expert social interaction helps the experienced peer embrace the needed strategic processes to closely examine the multifaceted understanding of what is easy or difficult for the novice learner, guided by a "long- term sense of direction and continuity, a local plan of action, and a moment-to-moment interactional decision-making" (Van Lier, 1996, p. 199).

When it comes to language education, the ZPD concept has been fruitfully applied in second language education research. It has proven to have a "great practical significance" as it shows the optimal way for instruction to benefit the learner by aligning mediation to the abilities that are emerging (Vygotsky, 2012). With reference to second language education, the ZPD is defined as "the difference between the L2 learner's development level as determined by independent language use, and the higher level of potential development as determined by how language is used in collaboration with a more capable interlocutor" (Ohta,

1995, p. 96). This zone is where the active interaction and collaboration with the more expert peer happen (Vygotsky, 1978), which helps the learners to increasingly develop new understandings of new concepts and higher levels of capability (de Silva Joyce & Feez, 2012).

According to Vygotsky (1978, p. 48) "the only good instruction … is the one that precedes and guides development". De Silva Joyce and Feez (2016, p. 30) applied the Vygotskian concept of ZPD to language learning and derived two key conclusions. Firstly, they found that teachers' exclusive focus on students' current level of independent language performance, without taking into account their potential to grow, would impede the students' progress. Secondly, the study demonstrated that effective language learning occurs when the teacher provides guidance, support, and collaboration to enable the students to perform successfully within the ZPD, which refers to the range of tasks that students can achieve with the appropriate support. By operating within this zone, students will be able to work towards their potential level of language performance, leading to significant learning and progress. Therefore, successful language learning requires an approach that considers the students' current abilities and potential for growth and provides appropriate support and guidance to enable them to reach their full potential.

J. Gee (2007) recognised digital gaming as beneficial for language learning, especially for young learners. This is mainly because DGBLL is often quite collaborative, as it allows the help of peers, mentors, and even a proxy in the form of the game's artificial intelligence (Becker, 2017). This active digital game environment, where players work together to achieve shared goals, acts as a virtual MKO and falls into Vygotsky's ZPD, where players tend to extend the boundaries of their ZPD (Becker, 2017).

Researchers also agree that digital games incorporate elements of challenge and progression that motivate learners to push themselves to achieve higher levels of competence (Dörnyei, 2010b). For example, studies have shown that learners who are encouraged to engage in digital language games as a learning context display higher thinking skills and show greater performance and development in their cognitive skills (Panichi, 2020). There is agreement that Vygotsky's sociocultural theory and the notion of ZPD form the core of the scaffolding concept (Krause et al., 2003) in learning. According to K. Li (2023), the concepts of ZPD and scaffolding have been found to be applicable in the context of DGBLL, as they promote learner engagement and facilitate language acquisition through providing tailored support and feedback. Scaffolding as a theoretical concept is discussed in more detail in the next section.

3.2.2 Scaffolding in the ZPD

Scaffolding is a concept that has emerged from Vygotsky's ZPD and was introduced by Wood et al. (1976). Scaffolding was first used as a metaphor to describe the type of assistance offered by adults or more knowledgeable peers to support and guide children's learning and development (Daniels, 2001; Hammond, 2001; Stone, 1998). Scaffolding has been used by an increasing number of educational researchers and practitioners, and has been applied to a variety of learning areas (Verenikina, 2008), such as mathematics education (B. Clarke, 2004; O'Toole & Plummer, 2004; Siemon & Virgona, 2003); ESL or teaching ESL (Hammond, 2001); and reading and writing (Kong, 2002). Bruner (1978) believes that in the early stages of learning a new concept or acquiring a new skill, children need scaffolding or active support from their parents or a more competent, knowledgeable peer.

Donato (1994) defines scaffolding as a dialogically constituted neuropsychological mechanism that increases the internalisation in novices of knowledge co-constructed in shared activity (Dongyu et al., 2013). B. Benson (1997) believes that scaffolding is actually a bridge used to build on what students already know to get something they do not know. Nonetheless, due to its different interpretations (Hammond, 2001), scaffolding does not provide educators with clear guidelines on how it should be used to achieve successful instruction. In fact, it seems to be becoming an umbrella term for any type of teacher support (Jacobs, 2001). When properly managed, however, scaffolding acts as an enabler not a disabler (B. Benson, 1997).

Since 1978, scholars have agreed that for scaffolding success, teachers must address each student's ZPD. And since a student's ZPD changes with increasing knowledge, the educational framework must continue to be individualised accordingly. The need to implement a scaffolding process arises when performing a task or understanding a new concept is beyond the student's capabilities but can be managed with the help of teachers, more capable peers, or technology (Raheem, 2011), which would allow shared, collaborative, and distributed learning between students and their teachers (J. Gee, 2000). In a scaffolded learning environment, and within the ZPD, teachers ought to provide a special kind of support for students to attain their purposes, such as accomplishing a new task or understanding a new concept that the students cannot understand independently. The teacher only helps students with skills that are beyond their current abilities (Sotiriadou & Hill, 2015). Once the students' expertise increases and they are able to understand and grasp the task or the new concept, the teacher begins the process of fading, or gradually removing the scaffolding, allowing the students to work independently (West et al., 2019).

Scaffolding is a powerful tool that has been deemed of great importance to offer assistance to help students acquire the necessary linguistic skills for EFL learning. Providing

them with the necessary guidance, feedback, and support enables them to improve their language proficiency and attain their language learning goals (Dantas-Whitney & Rilling, 2010; Hammond & Gibbons, 2005; Zisselsberger, 2016). In the context of DGBL, scaffolding is a critical component for facilitating effective learning. According to Papastergiou (2009), scaffolding in DGBL involves providing learners with targeted support in the form of instructions, feedback, and prompts to help them acquire new skills and knowledge, then apply them to the game environment. The support provided is gradually reduced as learners become more proficient, allowing them to take increasing responsibility for their learning (West et al., 2019), which helps the learners to optimise their learning experience (Sung & Hwang, 2013).

Scaffolding in DGBL can take various forms, such as tutorials, hints, prompts, or incorporating in-game feedback and assessment mechanisms to provide learners with appropriate support, and guidance throughout the learning process to help with learner progress (Gros, 2010). The use of DGBL environments can also provide an immersive and engaging experience, which motivates learners to continue with their learning and improves learning outcomes (Hainey et al., 2011; Hamari et al., 2014; Wouters et al., 2013).

In the education context, several studies have demonstrated the effectiveness of scaffolding as a valuable approach in DGBLL (Hou et al., 2023; Serrano, 2019). For instance, a meta-analysis by Cai et al. (2022) revealed that scaffolding in DGBLL effectively enhances student achievement by offering tailored support and feedback. Similarly, C.-H. Chen et al. (2020) found that scaffolding in both individual and collaborative game-based learning environments improves learning performance and intrinsic motivation by providing structured guidance and support.

Additionally, Ke and Grabowski (2007) reported that scaffolding in the form of game prompts and feedback facilitated the development of problem-solving skills in DGBL and created a positive impact on students' motivation and attitude towards their studies. Serrano (2019) highlighted the potential of scaffolding for personalising the learning experience, which would improve student outcomes by tailoring instruction to meet individual needs and preferences. This in turn would allow students to focus on areas where they need help and receive feedback that is relevant and actionable.

In the language learning context, a study by Cheng and Chen (2022) investigated the effects of scaffolding on collaborative discourse in DGBLL. The study demonstrated the effectiveness of scaffolding in DGBLL, which included prompts, feedback, and instructional videos to guide learners through the games and helped improve communication skills among EFL learners. Another study by Sykes and Reinhardt (2012) used a digital game to support learners' development of communicative competence in a foreign language. The game

included a range of scaffolding features, such as embedded prompts and feedback, as well as the ability to replay conversations to reinforce learning. Sykes and Reinhardt found that the scaffolding provided by the game supported the learners' communicative competence development and facilitated their language learning.

To conclude this section, the theoretical perspective of this study effectively incorporates key elements of Vygotsky's (1976) sociocultural theory, including the concepts of ZPD and scaffolding, to examine the potential benefits and limitations of using online digital games for EFL education purposes. Taking this approach sheds light on the complex social dynamics that emerge within the virtual and physical affinity spaces, as well as the impact on EFL learning experiences for students in both home and school contexts. Through this approach, the study can gain valuable insights into the ways in which sociocultural theory can inform the development of effective educational interventions that leverage the power of digital gaming environments to foster social interaction and enhance learning outcomes.

This study aims to extend beyond the sociocultural perspective (Vygotsky, 1976) by exploring other dimensions of human interaction and communication (Scanlon, 2017). The study emphasises the significance of examining multiple modes or channels of communication, such as verbal, nonverbal, and visual, and the way they are used to represent specific information and convey meaning (Scanlon, 2017). Adopting a multimodal perspective allows the examination of both verbal and nonverbal components of human interaction (Kress & van Leeuwen, 2001); it also provides a means to showcase the various forms of social interaction that occur in DGBLL contexts (Scanlon, 2017).

The following section provides a rationale for why the multimodal approach is suitable and presents a rationale for integrating critical concepts from NLS to enhance the understanding of the ways digital games are transforming social interactions through the lens of new literacies. This justification will involve exploring how existing and emerging literacies shape students' engagement with digital games. It will also illustrate the ways in which students engage with digital games, applying a multimodal lens to analyse specific examples of social interactions within DGBL. This will provide valuable insights into the unique affordances and challenges of the DGBL social and learning environment.

3.3 Multimodality

This study investigating teachers' perceptions of DGBLL emphasises the importance of multimodality as a theory and field of study that expands the understanding of meaning-making beyond the traditional sociocultural perspective, which primarily focuses on the role of communication (Kress & van Leeuwen, 2001). The study highlights the relevance of

multimodality for understanding social interactions among EFL students (Bacalja et al., 2022) by taking into consideration the various modes that individuals use to communicate and interact with others. This includes nonverbal and embodied aspects of communication. Multimodality offers a more comprehensive perspective on communicating and meaning-making (Kress & van Leeuwen, 2001) and particularly an understanding of the authentic social interactions among EFL students in DGBLL contexts, which is relevant in today's diverse and rapidly changing society.

Creating spaces in the classroom where students can explore the material world through multimodal play offers the opportunity "to expand the meanings of messages they produce by combining modes" (Wohlwend, 2008, p. 128). Teachers who are aware of the importance of social interaction for children's literacy learning and have the knowledge and skills to implement a culturally reactive pedagogy can create a classroom where students from different linguistic and cultural backgrounds actively engage in multimodal literacy activities (Gay, 2002; Taylor & Sobel, 2011).

This section discusses how multimodality can be applied to the analysis of language and social interactions, particularly in the DGBLL context. To this end, subsection 3.3.1 addresses the impact of the digital communication environment on language and communication (New London Group, 1996); 3.3.2 addresses the concept of social semiotics (Jewitt, 2008; Kress & van Leeuwen, 2001); 3.3.3 considers the modes in languages and how they work together (Kress, 2011), illustrated by the New London Group diagram (New London Group, 1996); 3.3.4 examines the alignment between the sociocultural view of language and multimodal social semiotics (Mills, 2010); and 3.3.5 provides a multimodal social semiotics analysis of Minecraft Education Edition as a pedagogical tool. By examining these elements of multimodality, this study aims to investigate the application of this theoretical framework for understanding language learning and social interactions in different contexts, including in the DGBLL context.

3.3.1 Digital Communication Environment

With the rise of digitalisation and the spread of technologies embedded in the daily textual practices of students, traditional approaches to literacy practices within educational contexts have been outdated (Tompkins, 2014). Therefore, literacy researchers have tried to broaden the scope of literacy to include what is beyond printed and written texts. They have argued in favour of more flexible definitions and practices that capture the shifting nature of literacy in a multimodal environment known as NLS (Coiro et al., 2014). These evolving multimodal environments tends to be more "participatory, collaborative, and distributed" in

nature and less “published, individuated, author-centric, and expert-dominated” (Lankshear & Knobel, 2007, p. 2267).

These new literacies include the “new technical stuff” (Lankshear & Knobel, 2007, p. 225) that conveys information by means of multimodal practices using a combination of semiotic resources that include visual, audio, gestural, and spatial, in addition to the traditional linguistic modes of written and oral forms (Cope & Kalantzis, 2009). In this sense, multimodal is defined as the combination of multiple semiotic resources for meaning-making and communication (Kress, 2014). According to the New London Group (1996), the proliferation of new media has created new forms of communication that combine multiple modes of representation, such as images, sounds, and texts, into a single message. This has led to a more complex and dynamic understanding of language, where meaning is not solely dependent on linguistic elements but also on the interaction of different modes (Jewitt, 2013).

The New London Group (1996) argues that this multimodal approach to communication can be seen as a form of social practice, where language use is situated within specific social and cultural contexts. In the DGBLL context, the use of multiple modes can be particularly effective in enhancing learners’ abilities to understand and internalise the language they are using, as well as to help develop their overall communicative competence. Janks (2010) notes that the use of multiple modes in communication reflects a broader shift towards a more visual and image driven culture, which has important implications for language and literacy practices. Digital media has enabled individuals to create and share images and videos that convey complex meanings and emotions, which has led to new forms of expression and communication that challenge the traditional notions of literacy. J. Gee (2003) suggests that the multimodal nature of digital games can be particularly effective in facilitating language learning in DGBLL contexts.

Digital games often combine text, images, audio, and interactivity in a way that is engaging and meaningful for the players (Gee, 2007; Reinhardt, 2019), which provides opportunities for language learners to practice and develop their language skills in authentic contexts. Understanding the multimodal nature of language and communication helps educators design more effective language learning experiences that leverage the affordances of digital media (Jewitt, 2009; Reinhardt, 2019) to support learners in developing their communicative competence. This study uses this aspect of the current literacy landscape and its affordances in an attempt to better support teachers’ and students’ literacy education and practices. This includes meaning-making practices in the digital age, giving rise to digital literacy practices mediated by digital technologies that are multimodal in nature and help

promote participation in collaborative activities, which in turn helps develop distributed knowledge and skills (Sang, 2017).

3.3.2 The Multimodal Social Semiotic View of Language and Its Relevance for Language Learning in the Digital Age

The multimodal social semiotic view of language is a theoretical framework that emphasises the interplay between different modes of communication, such as language, visual images, and sound, in the construction of meaning (Kress & van Leeuwen, 2001). This framework remains central to the present study. Recent research has applied the multimodal social semiotic framework to analyse learners' multimodal compositions in digital game-based environments, thus, highlighting its enduring relevance in contemporary language education practices (Shen et al., 2025). According to the multimodal social semiotic view of language, meaning is created through the interaction of different modes, and language is just one of the many resources available for communication (Kress, 2011). This view is based on the work of scholars such as Kress and van Leeuwen (2001) and Jewitt (2009), who have developed a theoretical framework to understand how different modes work together in communication. This framework emphasises the importance of analysing the social and cultural contexts in which communication takes place, as well as the various modes that are used to create meaning.

According to Kress and van Leeuwen (2001), communication is not limited to just words; it can also involve other modes of representation, such as images and sounds. These modes are separated from language, but they work together in a complex interplay to convey meaning. In the language education context, the use of all modes (e.g., visuals, text, sound, gestures) are multimodal semiotic resources that carry meaning (Kress, 2011). Jewitt (2013) argues that multimodal approaches to language learning are becoming increasingly important in the digital age, where the new technologies enable the creation and dissemination of multimodal texts. This view is supported by the New London Group (1996), who advocate for a pedagogy of multiliteracies that emphasises the importance of teaching students to read and produce texts across multiple modes and media.

In the context of language learning through digital games in EFL settings, the use of multiple modes can be particularly effective in enhancing the learners' ability to understand and internalise the language they are using. Digital games incorporate visual, audio, and gestural modes that provide students with a more engaging and effective experience (J. Gee, 2003; Hainey et al., 2011; Kafai & Burke, 2015; Squire, 2003; A. Wang & Lieberoth, 2016). Furthermore, by playing digital games that incorporate different cultural and social contexts,

learners can develop a deeper understanding of how language is used in different contexts and how it is influenced by cultural and social factors (R. Levy, 2011).

According to R. Levy (2011), a digital communication environment provides learners with access to a range of different contexts, and language learners in EFL classrooms can benefit from these different contexts in the learning process. By analysing the different modes of language and their interactions, teachers can develop a better understanding of the way modes are used to create meaning and can be leveraged to support language learning in EFL classrooms (Jewitt, 2015). Teachers can then use this understanding to develop more effective teaching strategies that leverage the power of multiple modes and enhance learners' communicative competence (Bower, 2016; Mayer, 2001).

3.3.3 Multiple Modes and Their Role in Language Learning

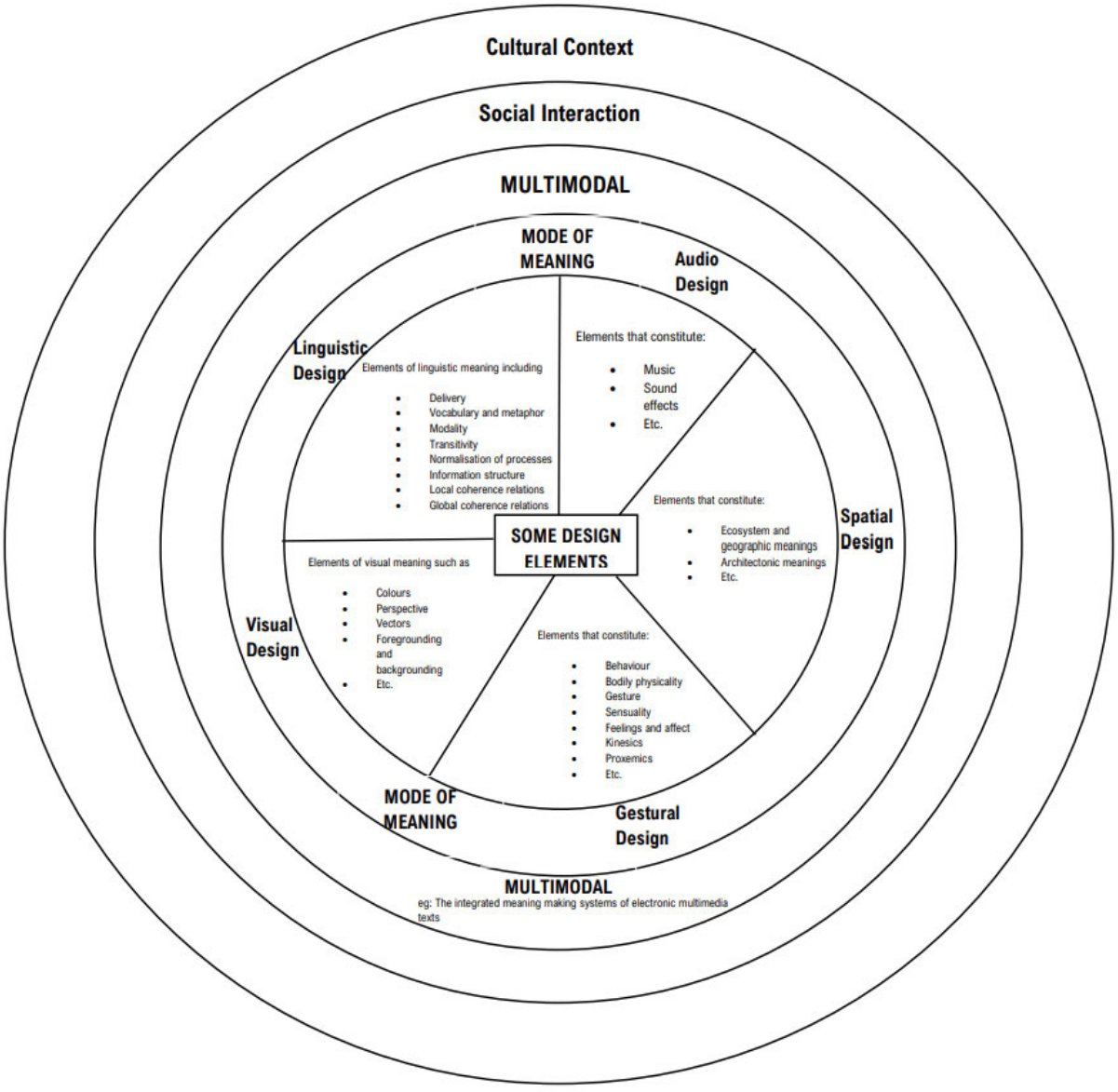
Modes can be defined as the means for conveying meaning and information as they involve visual, audio, linguistic, spatial, and gestural modes (Kress, 2011). According to Kress (2011), a mode is a socially recognised resource for communication that is composed of a particular materiality and a particular articulation. Multimodality theory highlights the significance of using multiple modes in communication, particularly in the language education context (Kress & van Leeuwen, 2006). Kress and van Leeuwen (2006) argue that by combining different modes of communication, such as text, image, and sound, educators can enhance the effectiveness of communication skills and provide their students with a richer and more engaging learning experience. The multimodal social view of language emphasises the role of cultural and social contexts in communication as well as the various modes that are used to create meaning (Kress, 2011).

This study draws on the work of the New London Group (1996), who noted that in the context of technological and social change, communication in the 21st century requires a new set of literacy skills that go beyond traditional reading and writing skills. Recent research continues to build upon this foundation by exploring how digital storytelling and multimodal composition in game-based learning environments can enhance learners' critical thinking and creative expression (Shen et al., 2025). The New London Group proposed the "multiliteracies pedagogy framework" to illustrate the complex nature of literacy in today's world. The diagram they provided conveys the dynamic and multimodal nature of communication in contemporary society. In other words, the diagram depicts the complex process of meaning-making in multimodal communication, as well as underscoring the importance of understanding the different modes of communication in order to effectively create and interpret contemporary multimodal texts.

In the language learning context, understanding the roles of each mode would encourage educators to incorporate a range of modes and design components into their teaching to better prepare students for the complex literacy demands of the 21st century (Cope & Kalantzis, 2015; Mills & Exley, 2014). It would also help learners make sense of a text and develop their language skills across multiple modes (Cope & Kalantzis, 2000). These modes are represented in Figure 3.2, which illustrates the interrelationship between important elements.

Figure 3.2

Representation of Multimodal Literacy and Social/Cultural Contexts



The second concentric circle in Figure 3.2 represents multimodality, which is fundamental to a pedagogy of multiliteracies. It involves the combination and

interrelationship of multiple modes of communication design, including linguistic, visual, audio, gestural, and spatial, to create meaning in a complex and nuanced way.

The linguistic design mode refers to the use of language, including spoken or written text. Elements of linguistic design include delivery, vocabulary and metaphor, modality, transitivity, normalisation of processes, information structure, local coherence relations, and global coherence relations. Elements of visual design include colours, perspective, vectors, foregrounding, and backgrounding. Gestural design includes elements that constitute behaviour, body language, kinesics, gesture, feelings and affects. Audio design involves music and sound effects. Spatial design includes elements that constitute the ecosystem in addition to geographical and architectural meanings.

The circle of social interaction highlights the fact that communication is not just about transmitting a message but is also about negotiating and establishing social relationships. In other words, meaning is not just created through the interaction of different modes of communication; it is also created through the social interactions between the communicators (Cope & Kalantzis, 2000). The circle of cultural context emphasises the role that culture plays in shaping meaning-making processes. Different cultures have different ways of using and interpreting different modes of communication. This affects the way a multimodal text is created and interpreted (Cope & Kalantzis, 2000); for example, colours, sounds, and gestures might have different meanings in different cultures.

The New London Group (1996) highlighted the significance of cultural context in influencing the interpretation and utilisation of the modes of communication. They asserted that meaning creation is always context specific and shaped by the social and cultural surroundings. Therefore, comprehending these contexts is crucial to assure effective communication. Observing how different cultures employ and interpret these modes of communication enables the development of a more nuanced understanding of how to create and interpret multimodal texts in various settings. Understanding the social and cultural context is therefore crucial for effective communication and interpretation of multimodal texts (Cope & Kalantzis, 2000).

Since the initial introduction of the multiliteracies framework by the New London Group (1996), scholars such as Cope and Kalantzis have further developed and refined the theory in response to the evolving demands of 21st-century communication. Their later work (Cope & Kalantzis, 2009, 2015) introduced the Learning by Design model, which emphasises the roles of collaboration, diversity, and learner agency in meaning-making. More recently, Kalantzis and Cope (2020) extended this work by offering a detailed grammar of multimodal meaning, which articulates how modes such as image, layout, gesture, and speech interact to

create meaning in contemporary digital environments. These updates reflect the dynamic nature of literacy in the digital age and reinforce the relevance of multiliteracies pedagogy for today's multimodal classrooms.

3.3.4 The Alignment Between Sociocultural View of Language and Multimodal Social Semiotics

Sociocultural view of language refers to the perspective that language is not only a tool for communication but also a social practice that is deeply rooted in culture and social interactions (Vygotsky, 1978). This view emphasises the importance of cultural meanings and social norms in shaping the way people use and interpret language. According to this view, language is not just a neutral medium for transmitting information; it is also embedded within the cultural values and assumptions that reflect the social identity of different groups (Vygotsky, 1978).

On the other hand, multimodal social semiotics refers to the study of how meaning is created through multiple modes of communication, such as images, sounds, gestures, and written and spoken language (Kress & van Leeuwen, 2001). This approach recognises that people use different modes of communication in different contexts, and that each mode has its own unique features and conventions for creating meaning. Multimodal social semiotics emphasises the importance of context and cultural knowledge in interpreting and producing meaning through different modes of communication (Kress & van Leeuwen, 2001).

Sociocultural view of language and multimodal social semiotics perspectives prioritise the cultural meanings of social groups in their approach to language and communication. Both perspectives emphasise the importance of understanding about how language and other modes of communication are shaped by and shape social and cultural practices. They also emphasise the way they are used to create and reinforce social relationships (Halliday & Hasan 1989; Kress & van Leeuwen, 2001).

Multimodal social semiotics expands on the sociocultural view, examining the interaction between different modes of communication, such as images, sound, and gestures, and the way they contribute to the construction of cultural meanings (Kress & van Leeuwen, 2001). The cultural and social context of communication is therefore important to understand how different modes of communication are used to create and negotiate meaning.

Mills's (2016) work aligns with both the sociocultural view of language and multimodal social semiotics, as she emphasises the importance of understanding the cultural meanings of different modes of communication and the social contexts in which they occur, in order to better understand and engage with diverse communities and their practices of communication.

In particular, Mills (2016) emphasises the idea that literacy practices are not just technical skills but are also social and cultural practices that reflect the values and identities of different groups. This aligns with the sociocultural view of language, which emphasises the importance of cultural meanings and social norms in shaping the way people use and interpret language (Vygotsky, 1978). Furthermore, Mills (2016) argues that literacy practices are shaped by social and cultural factors, such as the historical, political, and economic contexts in which they occur. For example, she notes that literacy practices in schools often reflect the dominant cultural values and power structures of society and may not be inclusive of the cultural practices and identities of all students. This work also emphasises the importance of recognising the diversity of literacy practices across different social and cultural contexts, and the need to engage with diverse communities and their practices of communication.

In addition to the sociocultural perspective, Mills's (2016) work also connects with multimodal social semiotics, which emphasises the importance of understanding how meaning is created through multiple modes of communication. It highlights the importance of multimodal literacy practices, such as using images, videos, and other forms of media to create meaning and communicate ideas. She argues that these practices are becoming increasingly important in the digital age, where people are exposed to a wide range of media and need to be able to critically evaluate and create multimodal texts.

Overall, the sociocultural view of language and multimodal social semiotics prioritise the cultural meanings of social groups in their approach to language and communication. They highlight the importance of understanding the social and cultural context of communication and literacy practices, and how these practices are used to create and reinforce language learning. Bringing these two lenses together in this study provides a rich base for understanding the teachers' perspectives on DGBLL in their EFL classroom contexts.

3.3.5 Multimodal Social Semiotics Understanding of Minecraft Play

Multimodal social semiotics is a useful framework for analysing and understanding the teachers' perspectives about Minecraft as a tool for language learning due to its emphasis on the interaction between different modes of communication and the role of social and cultural context in creating and interpreting meaning (Kress & van Leeuwen, 2001). Minecraft is a highly visual and interactive game that allows players to communicate using a range of different modes, including text, voice, and gestures. This makes the game a rich source of multimodal experiences that can be understood using the tools and concepts of multimodal social semiotics.

One way that multimodal social semiotics can be applied to understanding the affordances of Minecraft for language learning is through players' use of game texts and chat logs. These environments can be examined in terms of their linguistic features (syntax, semantics, and discourse) as well as their visual and spatial features (such as font, colour, and placement on the screen). Another way that multimodal social semiotics can be applied to examine Minecraft for language learning is through the investigation of player actions and gestures. Minecraft allows players to interact with the game environment and other players through a range of gestures and actions, such as pointing, waving, and building structures. These actions provide visual and spatial features, as well as having a communicative function in the game. These features offer players opportunities to use gesture and action to communicate and negotiate meaning.

Overall, the multimodal nature of Minecraft makes it an ideal tool for language learning, as it provides a rich source of data for the analysis of different modes of communication and their interaction. Multimodal social semiotics provides a useful lens for analysing teachers' perceptions of their students' interactions in gameplay, as it points out and emphasises the social and cultural context of communication in digital spaces and the different ways players engage in modes to create meaning.

3.4 Sociocultural Affordances of Digital Games

Digital games function as environments (Cornillie et al., 2012), and they provide context to language and space in which to use this language (Kuhn, 2018) that may support language-specific learning. When players are immersed in an online gaming environment, they form what J. Gee (2004) calls "affinity spaces" (p. 67). J. Gee (2007, p. 208) notes that playing digital games produces experiences that form affinity groups where "knowledge, tools and technologies are leveraged for powerful networking". Further, he describes an affinity space as "a place or set of places where people affiliate with others based primarily on shared activities, interests, and goals, not shared race, class culture, ethnicity, or gender" (Gee, 2004, p. 67) where informal learning is a common outcome. Learners in affinity groups are bonded to groups through shared endeavours, goals, and practices (J. Gee, 2007), based on shared interest across time and space (Curwood, 2014). The affinity spaces of online gaming communities are found to support the social practices and create social bonding among youths in online contexts (Ito, et al., 2009). The affinity spaces also help learners to situate meaning and engage in a multimodal space to collaborate, as well as embodying their experiences beyond their physical bodies to their virtual ones (Gee, 2003).

Affinity group learners in DGBLL engage in physical or virtual social interactions: they discuss the game's content, help each other solve game-related problems, and facilitate common activities to reach goals and objectives (J. Gee, 2005, 2007). J. Gee and Hayes (2011) regard gaming affinity spaces as especially important in terms of scaffolding good learning, and they reveal the lack of such approaches in traditional schooling. The notion of scaffolding is anchored in Vygotsky's (1978) sociocultural theory and the ZPD, which allows a collaborative construction of scaffolding of language that occurs through interaction (Weininger & Daniel, 1992) to receive support from a person with more knowledge and skills.

This support can be from teachers who reshape their understanding about literacy and literacy pedagogy to extend current traditional literacy practices in a constantly changing multicultural world and adapt to the unprecedented challenges the teachers confronted during the COVID-19 global pandemic; but in gaming, it can also be other gamers who are more competent peers with better language skills (Bond, 2020) who are able to expand the existing skills of the learner, providing a learning experience that allows for objectives beyond the reach of the player to be achieved. Research suggests that when players engage and interact in socially driven gameplay through collaborative interaction mediated by the target language (such as EFL), this can facilitate the target language development "in ways that may complement and extend the language learning that goes on in language classrooms" (Rama et al., 2012, p. 325).

From a social and cultural perspective, game-based learning is considered socially constructed and motivated (Barab & Duffy, 2000; Wenger, 2000). As in real-world learning, game-based learning has the potential to create a meaningful and socially supported learning context through social actions and interactions (Plass et al., 2015). Previous studies show that the use of sociocultural theory in DGBL interventions is designed to scaffold learners within their ZPD as gaming platforms are adaptive and personalised to foster the learners' development (Davis et al., 2018).

3.5 Digital Games and Second Language Learning

The fast-growing literature on game-based learning grounded in sociocultural perspectives suggests the positive potential of digital games in second language learning (Allen et al., 2014; S. Alqahtani, 2016; Alsayegh, 2016; Chik, 2014; Scholz & Schulze, 2017; Sundqvist & Wikström, 2015). From this perspective, game-based learning refers to the use of games to enhance the learning experience (Kapp, 2012). The literature reveals that emerging technologies and new designs for digital games provide immersive, detail-rich 3D virtual worlds, compelling narratives, and complex plots, which help engage second language

learners in an interactive, immersive, and purposeful use for second language learning (Newgarden & Zheng, 2016; Reinders & Wattana, 2015; Vosburg, 2017).

Some researchers have noted that digital games provide unique opportunities and engaging context for language learners to engage with the target language in authentic and meaningful ways. This happens through provision of a range of texts and situations that are not available in traditional language learning approaches (M. Miller & Hegelheimer, 2006; Peterson, 2012; Sykes & Reinhardt, 2012). This expanded environment for learning is because the digital game context provides learners with a low-anxiety, high motivation, and high-reward context for language learning (Sykes & Reinhardt, 2012).

Similarly, Peterson (2012) argues that digital games offer opportunities for learner autonomy and community building that traditional language classrooms cannot offer; further, Miller and Hegelheimer (2006) state that digital games can be used to create authentic language learning tasks that are described as engaging and challenging for language learners. This is particularly important in EFL contexts, where learners may have limited opportunities to practise their language skills in authentic situations outside the walls of the classroom (Golonka et al., 2014). Additionally, the development of online gaming communities encourages active socialisation into new multimodal literacy practices (Alexander, 2009; Benson & Chik, 2011; J. Gee & Hayes, 2011; Steinkuehler & Duncan, 2008).

From a socially informed perspective, Sourmelis et al. (2017, p. 44) state that "online social interaction through digital games allows second language learners to make language learning an authentic experience that involves interaction with native-speaking co-gamers" as they get the opportunity to engage in informal literacy practices within a context of informal language learning. In turn, M. Wu et al. (2014, p. 81), in their study of 18-year-old EFL students from Taiwan and the United States that used surveys, interviews, and observation to investigate participants' online social interactions, found that multidirectional communication through digital games enriched the opportunity to use English for communicative purposes via speaking, listening, reading, and writing with other interlocutors, in ways that allowed risk-taking and reflection in the target language.

In the same way, it is important to note that a DGBL context offers a unique platform for different kinds of interaction that participating players can engage in with others, both within and outside of the game (Reinhardt & Sykes, 2012). Reinhardt and Sykes (2012) identified three ways in which players engage in discourse when playing digital games. These interactions in their different forms can take place within the game, around the game, and through the online communities dedicated to playing the game (Reinhardt & Sykes, 2012).

The first method of interaction, within the game, concentrates on the discourse patterns found in the game itself (Sykes, 2018). It provides learners with the opportunity to communicate and engage with other players in a virtual environment, such as in the case of collaborative or competitive gameplay. Through in-game chat systems, voice communication, and test-based elements, learners are able to practise the target language by using the vocabulary and grammatical structures in context, negotiate meaning with others, and also get the chance to receive feedback on their language use (Peterson, 2012; S. Thorne et al., 2012).

The second method of interaction, around the game, involves learners engaging with other players and the game in a social context outside of the game. As situational practices, interactions around the game give rise to emergent discourses about rules and narratives that are role-dependent (Reinhardt, 2019). This includes interactions with friends, family, or classmates who share playing the game, as well as the communities who use the game as a platform for language learning and cultural exchange (Peterson, 2012). These interactions provide learners with opportunities to practise the speaking and listening skills through providing a relaxed and informal setting.

Finally, the third method of interaction, through the game, involves learners engaging with the game content, which helps to develop the target language skills. In this situation, the in-game players interact with each other to accomplish game-oriented tasks, and occasionally these digital discourses are extended to other areas of life (Reinhardt & Sykes, 2012).This includes interacting with in-game objects, puzzles, or quests that require reading, writing, and problem-solving skills, in addition to exploring the virtual worlds that offer exposure to a variety of cultures, languages, and perspectives. What makes interaction through the digital game context unique is the post-event possibility to archive and analyse the interactions. This helps players to undertake reflection and analysis so they can develop a practical, feasible, and reasonable goal (Sykes, 2018). Therefore, by harnessing the potential of interactions in the DGBL environment within, around, and through the game, language learners can benefit from an engaging and authentic learning environment and gain a rewarding language learning experience.

Minecraft is a popular game that showcases the diverse types of interactions available in digital games when played in the multiplayer mode. As in other DGBL contexts, players in the Minecraft context engage in different types of interactions that have a significant impact on the gameplay experience and can greatly influence the social and creative aspects of the game. The within-the-game interaction examples in Minecraft include building structures, exploring the game world, and interacting with non-playable characters in the multiplayer mode. The Minecraft world is made up of different types of blocks where players can interact together to build homes, farms, and monuments. Further in-game interactions include

exploration, whereby players can discover new areas and resources within the Minecraft world. Non-playable characters in Minecraft include villagers, who can be traded for items such as emeralds, and wandering traders, who offer rare items for trade.

Around-the-game interaction examples for Minecraft involve different kinds of communication and collaboration with other players outside the game. These interactions can take place through online forums, social media, or voice-chat platforms that allow players to communicate while playing to share tips and tricks, ask for help, or showcase their builds (Bainbridge, 2012). Finally, examples for through-the-game interactions include players engaging with each other using the multiplayer mode within the Minecraft world. These different types of interactions in the Minecraft world provide the players with diverse and engaging gameplay experience that appeals to players of different ages and skill levels. From building structures and exploring the game world in single-player mode, to engaging in multiplayer mode and communicating with other players in forums and social media, Minecraft allows players to engage in a range of within-the-game, around-the-game, and through-the-game interactions. Through these interactions, players can build social connections, express their creativity, and explore the limitless possibilities of Minecraft's world.

Such interactions are closely related to the theoretical perspectives of sociocultural theory, multimodality, and NLS. Based on sociocultural theory, which advocates that learning and development are situated in social and cultural contexts and are facilitated through social interactions with others (Vygotsky, 1976), multiplayer mode in the Minecraft context provides a rich social context for learning and development, as players engage in cooperative play and develop their communication and collaboration skills. Furthermore, multimodality and NLS emphasise the importance of engaging with different modes of communication and expression, including visual, auditory, and interactive modes (Kress, 2003; Lankshear & Knobel, 2011). Minecraft's gameplay encourages players to engage with a range of modes of expression, from building and designing structures in a visually rich game world, to communicating with other players through text chat and voice chat. Overall, Minecraft's different types of interactions offer a unique and engaging gameplay experience that provides opportunities for social, cognitive, and creative development, as well as engagement with different modes of expression and communication. A such, Minecraft serves as an excellent example of the ways in which digital games can be used to promote learning and development from a sociocultural, multimodal, and new literacies perspective.

3.6 Digital Games and Multimodal Literacies

As previously discussed, multimodality refers to the use of multiple modes of communication, including visual, auditory, spatial, and linguistic modalities, to create meaning (Kress, 2011). In other words, it is the idea that communication is not limited to one mode (such as text) but rather involves a range of modes that work together to convey meaning. The concept of multimodality has become increasingly important in the 21st century, as new technologies and forms of communication have emerged that rely on multiple modes of communication (New London Group, 1996).

J. Gee's (2003) work has been foundational in highlighting the strength of digital games in promoting new literacy practices. Jewitt (2008) states that digital games have a high degree of multimodality in the sense that they build on combinations of images, animations, texts, and sound. Today, digital games are by far the most popular literacy practice used by young children (Kahila et al., 2021) and can run on different platform such as PlayStation, Xbox, personal computers, and mobile devices (Reinhardt, 2019). They also have different designs, genres, and contexts, which contribute to different forms of social practices (Reinhardt, 2019). Within the framework of NLS, this study approaches digital games as socially situated practices (Coiro et al., 2014).

Digital games are one example of how multimodality in new literacies can be incorporated into learning environments to enhance engagement and learning outcomes. The multimodal affordances of digital games for language learning can be particularly important and beneficial for learners who may struggle with traditional forms of language instruction, such as reading and writing (Chapelle & Sauro, 2017). Digital games, with their complex multimodal affordances, provide language learners with an immersive and interactive environment that engages them in authentic language use (K. Li et al., 2022). By incorporating different modes of communication, digital games can provide second language learners with a more engaging and accessible way to practise using language in context.

Multimodality is not just about the different modes of communication themselves, but also about how they work together to create meaning. In a DGBLL context, one example of combined modes of interaction involves the integration of visual and auditory elements to create a particular atmosphere or mood by using the power of audiovisual integration. In other words, visual elements (such as graphics, animations, and colours) and auditory elements (such as sound effects, music, and voiceovers) are designed to complement and enhance each other, creating a more immersive and engaging experience for the player.

Research has shown that audiovisual integration can enhance learning outcomes by promoting deeper cognitive processing and facilitating memory retrieval, as well as increasing the learners' attention and motivation (Mayer, 2014). By blending these different forms of communication, DGBLL platforms create a more engaging and interactive experience for language learners, which allows them not only to see and hear the language being used but also to experience it in a more embodied and multisensory way (Caws & Hamel, 2016).

By leveraging the power of audiovisual integration, digital games can create a more engaging and effective learning experience for language learners, while the interactive elements may provide opportunities for learners to practise using language in a meaningful way (Newcombe & Brick, 2017). This integration of different modalities can help to create a more immersive and engaging learning experience, which in turn can enhance language learning outcomes. Thus, research on learning in virtual worlds described as authentic learning environments draws significantly on the role of different modes for meaning-making across different contexts in guiding thinking and problem-solving practices and other 21st-century learning outcomes during multimodal social interaction (Rowsell & Collier, 2017).

3.7 Minecraft Education Edition as a Multimodal Learning Tool

This study aims to gain a comprehensive understanding of how digital games at school and at home can be used as a way to explore new forms of learning in digital environments to enhance the recognition and acknowledgement of multimodal learning in home and school contexts, and also in order to explore the connection between using digital games as a multimodal text and the way EFL students can learn. As in other multiplayer digital games, players in the context of Minecraft Education Edition communicate socially by using verbal or in-game text chat system. In their collaborative practice, learners' engagement in conversations in the context of online digital games requires them to turn take, collaborate, co-construct and redesign the language (Peterson, 2019)

Players also use the in-game chat system to communicate with and get support and guidance from their peers or more experienced players. Furthermore, as an online multiplayer game, Minecraft gives players the opportunity to playfully interact through the meaning potential of images (Twining, 2010), that is, through visual designs and figures like "Creepers", which can kill the players' characters, in addition to the resources the players use to create and build their own world (Rubin & Camm, 2013). Furthermore, players' use of virtual gestures in Minecraft and body movements (hand, body, and facial gestures) have the potential to co-construct and reinforce the meanings of the spoken or written words and images to support their communication needs (Bezemer, 2017). Online gamers use in-game

avatars, and if a player fails to understand the gestures of other players' avatars it could result in the death of one's avatar (J. Gee, 2015b). In virtual worlds, avatars offer the opportunity for social interactions as they virtually represent the gamers in the virtual world; therefore, the death of an avatar interrupts the social interactions among players (Lemke, 2017).

The audio signals in the virtual environment in online digital games such as Minecraft are regarded as interactive, realistic, and consistent with information communicated through the visual mode (Lake, 2010). Audio signals help players to be aware of their surroundings, for example, by conveying information about obstacles to be avoided, which helps the players to make progress and achieve success (Oren, 2008). An example in Minecraft is the Creeper hissing sound, which warns players about sudden attacks.

As the preceding discussion shows, using Minecraft Education Edition in this study enables a focus on digital gaming contexts and how participants make meaning in multimodal ways by using multimodal practices. The study investigates what is beyond the traditional and "habitual conjunction of language, print literacy and learning" (Jewitt, 2008, p. 241) by taking a multimodal approach. This involves an expanded view of learning without a heavy reliance on text alone. It also responds to the dominance of images and modes of communication that are re-mediated by digital technologies in the 21st century, where language is placed and embedded within wider social semiotics (Jewitt, 2009). Embracing a multimodality lens in this study will enable rich descriptions of the authentic participation of EFL students as they engage in online gaming environments and peer-to-peer interactions, as well as the perspectives of the teachers about the social interaction affordances that occur between the students.

Although sociocultural and multimodal theories strongly support the use of DGBLL in language learning, the successful application of these frameworks depends heavily on context. For instance, digital game environments may not always align with institutional expectations or teachers' readiness, thereby limiting their transformative potential (Reinhardt, 2019). A critical lens is thus needed to examine not only the affordances, but also the constraints and contradictions in applying these theories within traditional school systems.

3.8 Conclusion

This chapter has provided an overview of key theoretical perspectives and concepts that inform language learning in EFL classrooms. From a sociocultural perspective, language is seen as a collaborative and interactive process that is shaped by social and cultural contexts. Multimodal approaches to language learning recognise the importance of multiple modes in meaning-making and provide learners with opportunities to engage with language in different contexts and modalities. The use of DGBL provides opportunities for learners to engage in

complex multimodal meaning-making and collaborate with others in affinity groups. As digital technologies continue to shape the way we communicate and learn, it is important for EFL classrooms to embrace these new affordances and explore their potential for enhancing language learning.

Informed by the sociocultural theoretical perspectives and multimodality discussed in this chapter, the following chapter provides details of the research methods adopted for this study, including the research design, selection of participants, Minecraft Education Edition professional development for EFL teachers, phases of data collection, approach to data analysis, and ethical considerations. These methods and analysis are used to answer the research questions detailed at the beginning of this chapter.

Chapter 4: Methods

4.1 Introduction

Chapter 2 presented a comprehensive review of the literature that informs this study, while Chapter 3 detailed the theoretical perspectives underpinning the research, focusing on sociocultural and multimodal approaches. This chapter outlines the methodology employed to address the research questions. Specifically, it describes, elaborates, and justifies the methods used to explore primary teachers' perspectives on the potential role of DGBLL—specifically, Minecraft Education Edition—to support social learning environments for teaching primary school children EFL. Interviews were conducted with EFL primary school teachers to address three specific RQs:

RQ1: What are primary teachers' perspectives on using DGBLL to promote English as a social practice for their students?

RQ2: How does the use of DGBLL advance primary students' English as a social practice?

RQ3: How do teachers integrate DGBLL into their EFL pedagogical practice?

Answering these questions addresses a significant gap in the literature on the use of DGBLL in primary school settings in contexts where English is a foreign or second language, such as Saudi Arabia. These questions aimed to explore the role of social interactions and digital literacies in primary EFL contexts, which have not been extensively studied (Carolus et al., 2019; Pérez-Escoda et al., 2016). Additionally, the investigation aimed to provide valuable insights for EFL teachers and policymakers to navigate the evolving landscape of English language education in alignment with the goals of Vision 2030 for Saudi Arabia (Ministry of Education, 2024). Recent studies underline the importance of digital literacies in educational contexts by showing how the use of digital tools can enhance social interaction and social language learning (Carolus et al., 2019; Pérez-Escoda et al., 2016; L. Dixon et al., 2012).

As noted previously, this study is situated within the fields of NLS and EFL education, to provide a rich qualitative investigation to understand the potential for integration of digital games in language learning. NLS emphasises the importance of understanding literacy practices within their sociocultural contexts and recognises the multimodal nature of these practices (Barton & Hamilton, 2000; J. Gee, 2003). This aligns with the focus of this study, which investigates how Minecraft Education Edition can facilitate social and multimodal learning environments for EFL students.

In the contemporary educational landscape, DGBLL is attracting significant attention from researchers in language learning and educational technology. Recent studies have highlighted the transformative impact of DGBLL on language learning, emphasising its potential to enhance learner engagement, autonomy, and linguistic competencies (Becker, 2017; C.-H. Chen et al., 2020). This study builds on this foundation by investigating the role of Minecraft Education Edition in creating social interactive and engaging learning environments for primary school students in Saudi Arabia.

The chapter begins by outlining the research design and providing a detailed account of the nature of the data collection sites and the criteria used for the selection of participants. It then discusses the data collection methods, including the development and implementation of semi-structured interview protocols, and the professional development sessions designed to introduce teachers to Minecraft and guide them in its implementation. Thematic data analysis guided by sociocultural and multimodal frameworks is used to interpret the data, aligning with the study's focus on Minecraft, a popular sandbox game that is used both in the classroom and at home to support language learning (J. Gee, 2007; Kress, 2010). This dual setting allows for a comprehensive exploration of how DGBL can facilitate social and multimodal learning environments for EFL students and enhance social English language learning.

As highlighted in the previous chapters, this study aims to investigate EFL teachers' perspectives on using DGBLL as a pedagogical tool in a context that has traditionally relied on didactic teaching methods (M. Alqahtani, 2015). To facilitate this investigation, the study focuses on the use of Minecraft Education Edition to support English language learning as a social practice. An essential element of this study is the professional development of EFL teachers in integrating Minecraft Education Edition into their curriculum. This professional development aims to equip teachers with the necessary skills and knowledge to effectively use digital games for language learning, aligning with the broader goals of enhancing teaching practices and student engagement through technology (Collin & Karsenti, 2011).

To address the research objectives, this chapter discusses the rationale for selecting Minecraft Education Edition as the DGBLL tool. It also outlines the professional development activities designed to equip teachers with the necessary skills and knowledge to effectively incorporate this tool into their teaching practices. Finally, the chapter details the ethical considerations and processes adhered to throughout the study, ensuring the integrity and ethical rigour of the research. The aim is that by the end of this chapter, readers have an understanding of the research design, the methods of data collection and analysis, and the ethical considerations that guided this study. This comprehensive methodology section is crucial for addressing the research questions and illustrating the approach to the study.

4.2 Research Design

4.2.1 Exploratory Case Study

This study adopts an exploratory case study design (Yin, 2017) and focuses on a bounded system: primary school EFL teachers 'experiences of integrating Minecraft Education Edition following professional development, within the Saudi Arabian context. The "case" in this study is the collective experience of 10 EFL teachers from two Riyadh-based primary schools. While interviews served as the primary data collection method, the study aimed to generate in-depth insights into the teachers' evolving perspectives and practices. As an exploratory case study, the purpose was not to triangulate multiple types of data but rather to explore an under-researched phenomenon within its real-world setting, as recommended for early-stage investigations (Yin, 2017).

This study included 10 participants and employed an exploratory case study design, a method particularly well-suited for investigating complex phenomena within real-life contexts (Baxter & Jack, 2008; Stake, 1995; Yin, 2017). The choice of an exploratory case study is crucial for answering the central research question because this design allows for an in-depth exploration of primary school EFL teachers' perceptions and experiences with DGBLL, particularly using multiplayer digital games like Minecraft to support social language learning environments. This approach facilitates a comprehensive understanding of current teaching methodologies, teachers' openness to DGBLL, and their experiences in creating interactive game-based approaches in their English learning environments. Conducting the research in two primary schools in Riyadh, Saudi Arabia, provided a unique lens to understand the implementation of digital games within a traditional, didactic educational environment.

The exploratory case study method is particularly suited for this research as it allows for a detailed examination (Yin, 2017) of how digital games can be integrated into EFL classrooms, an area with limited prior research (Zhang & Hasim, 2023). By focusing on real-life contexts and teachers' experiences, this design is valuable for generating hypotheses or theories regarding the integration of digital games in foreign language learning contexts (Yin, 2017). Unlike methods that begin with predefined hypotheses, the exploratory case study seeks to uncover new insights into how digital games influence EFL students' social interactions (Simons, 2009).

The study draws on theoretical frameworks of multimodality (Kress, 2010) and sociocultural theory (Vygotsky, 1978) to understand how multiplayer digital games mediate social interactions. Multimodality emphasises the use of various modes of communication—such as visual, auditory, and textual—in constructing meaning and facilitating learning. In this

study, digital games serve as multimodal texts that provide rich, interactive environments for language learning (J. Gee, 2007; Kress, 2010; Squire, 2011). Sociocultural theory stresses the significance of social interactions and cultural contexts in cognitive development (Daniels et al., 2007; Rogoff, 2003). It examines how multiplayer digital games mediate social interactions among students, providing a context for collaborative learning and language practice (de Freitas, 2018; J. Gee & Hayes, 2011).

The study design is also informed by NLS, which emphasises understanding literacy practices within their sociocultural contexts (J. Gee, 2003; Street, 2003). In this context, multiplayer games like Minecraft offer significant affordances for social interaction and multimodal communication, essential elements in language learning (J. Gee, 2007; Lankshear & Knobel, 2011). Using an exploratory case study design, this research investigates the situated literacy practices of EFL students as they engage with Minecraft, allowing for an in-depth exploration of how the platform facilitates social interactions and language learning within the specific cultural and educational context of Saudi Arabia.

Given that this study aimed to explore EFL teachers' perspectives, interviews served as the exclusive source of formal data collection. Triangulation was not pursued, in line with the exploratory and in-depth nature of the case study design (Yin, 2017).

4.2.2 Data Collection Points

Data collection was conducted at three distinct points during the study. Interviews were conducted once prior to the Minecraft professional development sessions and twice over 6 weeks as the participants integrated Minecraft into their EFL program. Interviews were conducted for 1 hour at each point with individual participants over the virtual platform Zoom (see Table 4.1).

Table 4.1

Overview of Data Collection Process

Phase	Timing	Participants	Duration & method
Interview Phase 1	Pre-implementation	10 teachers	1-hour individual Zoom interviews
Interview Phase 2	Mid-implementation	10 teachers	1-hour individual Zoom interviews
Interview Phase 3	Post-implementation	10 teachers	1-hour individual Zoom interviews

Note. Each participant took part in the three semi-structured interviews, which resulted in approximately 30 hours of transcribed data. Interviews were conducted in English or Arabic, depending on participants' preferences.

Semi-structured questions were conducted in English or Arabic, depending on the preference of the participants, audio recorded and later transcribed by the researcher, who is fluent in English and Arabic. This structured approach offered a thorough overview of the evolving perspectives and practices of teachers regarding DGBLL integration into their classes. Furthermore, the study design allows for detailed data collection through semi-structured interviews, providing rich, qualitative data on teachers' perspectives and experiences (Creswell, 2013). A detailed exposition of this methodology, including the significance of each data collection point, will be elaborated upon later in this chapter. Table 4.2 summarises the data collection phases.

Table 4.2

Summary of Data Collection Phases

Interview phase	Timing	Purpose of the interview
Pre-implementation	Before PD sessions	To explore initial attitudes, expectations, and baseline familiarity with DGBLL and Minecraft
Mid-implementation	Week 3 of Minecraft integration	To understand emerging experiences, challenges, and instructional adjustments
Post-implementation	Week 6 of Minecraft integration	To reflect on impact, outcomes, and pedagogical insights gained

Note. DGBLL = digital game-based language learning.

Semi-structured interviews are an essential method in qualitative research. They provide the necessary flexibility to investigate the participants' experiences while allowing for the emergence of new insights (Creswell, 2013). In this exploratory case study, three sets of semi-structured interviews were conducted at three data collection points with 10 EFL teachers. As mentioned above, the first interview was conducted prior to the Minecraft Education Edition professional learning, and the second and third interviews were conducted during the teaching trial as participants implemented the digital tool as part of their EFL classes. The interviews were employed to investigate the participants' pedagogy prior to professional development, to track the progression of teachers in using DGBLL for teaching English, and to understand the teachers' experiences in creating social learning environments. The aim was to understand the teachers' current teaching practices, the progress they made after the professional development sessions, and the challenges they encountered while implementing Minecraft Education Edition in their English classrooms. Additionally, the interviews explored how they prepared the lessons, including designing Minecraft-based activities, and how they integrated them into the curriculum.

These interviews were also designed to capture how the teachers' practices reflected or were informed by sociocultural and multimodal perspectives. Semi-structured interviews were chosen due to their ability to yield rich, detailed data that encapsulate the complexities of teaching practices and experiences (Patton, 2015). This method is particularly effective in case study research, where the objective is to explore phenomena deeply within their real-life context (Yin, 2017). The flexibility of semi-structured interviews allows the researcher to probe deeper into participants' responses and adapt questions based on their answers, ensuring a comprehensive understanding of the teachers' experiences and perspectives (Patton, 2015; Yin, 2017). These data can then be analysed to identify key themes and patterns, offering insights into how digital games support social learning and language development. Although classroom observations and document analysis could have provided valuable data, they were beyond the scope of the study's design and objectives.

The iterative nature of the exploratory case study allows for continuous refinement of research questions and methods, ensuring that the study remains responsive to emerging findings and insights (Stake, 1995). By aligning the exploratory case study design with the established theoretical frameworks noted in the previous chapter, this investigation can contribute deeper understanding of the experiences of teachers integrating DGBLL into the EFL curriculum. The study's findings can then inform future educational practices and policymaking, promoting more interactive and engaging learning environments in primary education. This is particularly significant in the context of Saudi Arabia's Vision 2030 (Ministry of Education, 2024), which emphasises the importance of innovative and effective educational practices.

4.3 Research Sites

The selection of research sites is critical to the integrity and relevance of an exploratory case study, as it situates the research within the natural contexts of the participants' daily social interactions and practices (Yin, 2017). This study was conducted at two primary schools in Riyadh, Saudi Arabia. These sites were selected based on their interest in implementing new approaches to enhance primary EFL students' social language learning through DGBLL tools, specifically Minecraft Education Edition.

Although detailed site-level data were not collected as part of the formal design, the two participating schools can be briefly described to help situate this research study. One school was an international primary school, while the other was a government primary school. Both schools were located in Riyadh, the capital city of Saudi Arabia. The international school offered a more flexible curriculum and a greater autonomy in implementing technology-rich

activities, whereas the government school followed the national curriculum and operated within a more structured framework. Both schools were relatively well-resourced and expressed strong interest in adopting innovative pedagogical practices such as DGBLL. These institutions served as an access point to the teacher participants and provided a varied, yet contextually relevant backdrop for exploring DGBLL integration within EFL classrooms.

The selection of the two research sites was guided by their potential to provide rich data on the experiences of teachers implementing DGBLL into primary EFL classrooms. This selection was crucial for answering the research questions of the study, which focused on primary teachers' perspectives on using DGBLL to promote English as a social practice for their students and the evolving practices and experiences of teachers as they implemented these tools. The participating schools expressed a keen interest in exploring innovative methods to improve social language learning outcomes, making them ideal for this exploratory case study (Stake, 1995). Traditionally, these schools have applied didactic approaches to teaching with instruction directly from the teacher, who holds all the knowledge, to the student. Their interest in DGBLL reflects a desire to complement these traditional methods with new approaches aimed at enhancing student engagement and learning, as highlighted by researchers who emphasise the benefits of digital games in educational settings (J. Gee, 2007; Sykes et al., 2010; Zhang & Hasim, 2023). This interest aligned with the research aims of understanding how Minecraft Education Edition can be used to support social learning and language development in EFL contexts (Yin, 2017).

Although traditional teaching practices still dominate the broader Saudi educational landscape, the two participating schools in this study were selected because of their demonstrated interest in adopting more innovative and technology-enhanced approaches to teaching. This openness, which had been gradually developing and was accelerated during the COVID-19 pandemic, positioned these schools as suitable sites for exploring the integration of DGBLL using Minecraft Education Edition.

Both schools in this study are located in Riyadh, Saudi Arabia, and cater to a varied student population. The leadership team and EFL teachers at these schools were interested in gaining insights into the effectiveness of digital games in educational settings, making them ideal research sites (Stake, 1995). Furthermore, teachers in these school were known to have positive attitudes towards technology and had prior experiences with various digital tools, particularly since the COVID-19 pandemic, which accelerated the need to facilitate the integration of new technologies. Moreover, the schools' interest in innovative educational methods aligned with the study's aims. This alignment ensured that the research would be

relevant and beneficial to the participating schools, thereby enhancing the validity and applicability of the findings (Yin, 2017).

4.4 Participants

The selection of participants is crucial in an exploratory case study, as it ensures that the research captures a diverse range of perspectives and experiences relevant to the research questions (Patton, 2015; Yin, 2017). This study focused exclusively on primary school EFL teachers from two schools in Riyadh, Saudi Arabia. A total of 10 teachers participated in the study, with five teachers from each school. Invited by their school principals, these teachers voluntarily agreed to participate and gave informed consent driven by their interest in exploring innovative methods to enhance social language learning.

4.4.1 Rationale for Choosing Primary School EFL Teachers

The selection of primary school EFL teachers as participants in this study is based on several scholarly considerations. Primary educators play a vital role in the early stages of language acquisition, where effective instruction can significantly shape students' language skills and academic success (Bialystok, 2001). Investigating innovative methods like DGBLL within this context is crucial for understanding their potential to enhance early language education. Primary school teachers generally have more flexibility to try new teaching methods compared to their secondary school counterparts, who often encounter stricter curricular requirements (J. Richards & Rodgers, 2014). This flexibility is advantageous for exploratory studies that aim to implement and evaluate new educational technologies, such as Minecraft Education Edition. Moreover, primary school settings provide a supportive environment for fostering social interactions and collaborative learning, which are critical components of language acquisition (Brown, 2007).

According to Vygotsky's (1978) sociocultural theory, social interaction plays a fundamental role in the development of cognition, and primary school classrooms are uniquely positioned to facilitate these interactions through structured and playful activities (Wood, 1998). The involvement of primary school teachers in their students' comprehensive development, including the social and emotional aspects, makes them particularly well-suited for studies examining the broader impacts of educational interventions (Pianta et al., 2008). Their perspectives can provide invaluable insights into how DGBLL tools influence not only language proficiency but also social skills and classroom dynamics.

Furthermore, early language interventions have been shown to significantly enhance students' motivation and engagement (Ryan & Deci, 2000). By focusing on primary school

teachers, this study aims to explore the potential of DGBLL to create engaging and interactive learning environments that actively involve young learners in social language learning activities. Selecting primary school EFL teachers for this study allows for the exploration of their unique perspective in observing and influencing early language development, thereby yielding rich, contextual insights into the efficacy of DGBLL in promoting social language learning.

4.4.2 Participant Selection Criteria and Recruitment

The choice of participants was driven by the study's aim to explore primary school EFL teachers' perspectives on the integration of Minecraft Education Edition in their classrooms. Purposeful sampling was employed to identify and select participants who were most likely to contribute valuable information to the study. Purposeful sampling is effective in identifying information-rich cases that can provide valuable insights and a deep understanding of the phenomena under investigation (Patton, 2015). This approach is commonly used in qualitative research to facilitate the selection of participants who meet specific criteria and can offer deep insights into the research questions (Palinkas et al., 2015; Suri, 2011).

The criteria for selecting participants included that they be female EFL teachers who would voluntarily participate. Due to cultural sensitivities, only female teachers were invited to take part in this study because it was facilitated by a female researcher. The teachers having an interest in exploring innovative educational methods, such as Minecraft Education Edition, to enhance language learning (J. Gee, 2007) was also a key consideration.

After informed consent was obtained from the school principals, participants were invited through email invitations. Interested teachers were given detailed information about the study and were invited to participate. Consent forms were distributed and collected electronically to ensure informed participation (Creswell, 2013). This recruitment strategy ensured that participants were well-informed and willing to contribute to the research (Palinkas et al., 2015). Participants were reminded of their right to withdraw at any time during the study.

4.4.3 Teacher Participants in the Study

The participants had teaching experience ranging from 4 to 16 years and held various educational qualifications, including degrees in English literature, educational leadership, and specialised certifications such as TESOL and Cambridge-certified teacher training. Some of these teachers also held leadership positions within their schools, serving as heads of departments or coordinators for different sections. Participants also had an interest in

participating in the professional development sessions on Minecraft Education Edition provided by Microsoft in Riyadh in Saudi Arabia. This professional development involved online sessions designed to introduce the teachers to Minecraft Education Edition and its potential applications in EFL classrooms. Additionally, when participants required extra help, they were offered further information or connected with support from Microsoft staff for more complex issues. This support structure ensured that teachers had continuous assistance throughout the implementation of Minecraft processes.

After the professional learning experiences with Minecraft, teachers were responsible for creating lessons integrating new approaches into the existing curriculum and specific lessons, making necessary adjustments, and looking for additional resources to enhance the game-based learning experience. They also observed the impact of these practices on the students' social interactions and language development during the pedagogical integration. By focusing on the teachers' perspectives before integrating Minecraft and after their professional learning, the study aimed to capture the affordances and complexities of digital game-based approaches into the EFL curriculum. The teachers' narratives were documented to provide rich data on the potential of DGBLL to support social and language development, with the aim of highlighting the practical implications and benefits observed in the classroom.

To illustrate the participants' backgrounds, Table 4.3 summarises the demographic information of the 10 participating teachers. This includes their years of teaching experience, educational backgrounds, and the grade levels they were teaching at the time of the study. This information is crucial for contextualising the findings and understanding the diverse perspectives brought by the teachers.

Table 4.3

Overview of Participants in the Study

Teacher pseudonym	School pseudonym	Years of experience	Background	Current teaching year level
Aisha	Peppermint primary school	4	Bachelor degree in English, training in TESOL	Grade 6
Majd	Peppermint primary school	5	Bachelor degree, technology training	Grades 3 and 4
Fatima	Peppermint primary school	12	English literature and language degree, EFL training	Grades 5 and 6
Nouf	Peppermint primary school	6	Bachelor degree in English literature	Grades 3 and 4
Al Batool	Peppermint primary school	10	Bachelor degree in English education	Grades 3 and 4
Ayah	Oakwood primary school	8	Bachelor degree in English education, TESOL certificate	Grades 4 and 5
Mariam	Oakwood primary school	12	Bachelor degree in education, Master of Arts in TESOL	Grades 6 and 7
Hessa	Oakwood primary school	9	Bachelor degree in English Literature, TESOL certificate	Grade 4
Hala	Oakwood primary school	14	Bachelor degree in education, Master of Arts in educational leadership	Grades 5 and 6
Sarah	Oakwood primary school	16	Bachelor of Arts in English, TESOL certification	Grades 5 and 6

Note. EFL = English as a foreign language; TESOL = teaching English to speakers of other languages.

Across the two participating schools, all 10 participating teachers were female and had varying levels of experience, ranging from 4 to 16 years in EFL teaching. As noted in Table 4.3, many teachers held postgraduate qualifications or TESOL certifications. Most of them were specialist EFL teachers who regularly taught English across multiple grade levels, particularly Years 4 to 6. During the Minecraft professional development sessions, the researcher observed that teachers brought diverse teaching styles and levels of digital confidence to the training. Some of the teachers were quick to experiment with Minecraft's pedagogical possibilities, while others were more cautious, but they gradually grew in confidence. These differences were reflected in how they implemented Minecraft later in their classrooms and shaped the themes that emerged in their interview responses. Class sizes reported by participants typically ranged from 25 to 30 students. While the study did not formally observe teaching practices, these contextual insights help enrich understanding of the professional environment in which DGBLL was introduced.

4.5 Professional Development in Minecraft Education Edition

The first interview was conducted with participating teachers prior to their professional learning on using Minecraft Education Edition. Investigating participant perspectives prior to their professional development was an important design feature to ensure baseline understanding of teachers' perspectives on integrating DGBLL. Professional development is a crucial component in preparing EFL teachers to integrate new technologies and methodologies into their teaching practices. Effective professional development enables teachers to gain the skills and confidence needed to implement innovative teaching methods, which is essential for improving educational outcomes (Desimone, 2009). In the context of this exploratory case study, the professional development sessions were essential to equip EFL teachers with the skills and knowledge necessary to effectively use Minecraft Education Edition as a teaching tool, thereby allowing them to explore new approaches to enhance language learning. This aligns with Yin's (2017) emphasis on the importance of comprehensive training in ensuring the successful implementation of innovative educational practices within case study research.

To facilitate this training, Microsoft was approached to provide comprehensive training for the participating teachers. This collaboration with Microsoft ensured that the teachers received high-quality professional development tailored to the educational use of the freely available Minecraft Education Edition. The sessions aimed to support the teachers in developing and implementing Minecraft-based lesson plans and were also structured to provide both theoretical and practical knowledge. The professional development sessions were divided into two phases, each spanning 2 days from 9 a.m. to 5 p.m., to cater to different levels of familiarity and expertise among the teachers. This structured approach ensured comprehensive training, enabling teachers to effectively integrate Minecraft Education Edition into their EFL teaching practices and explore new approaches to enhance social language learning (Desimone, 2009; Yin, 2017).

4.5.1 First Training Session (March 17–18, 2023)

The first 2-day session included the 10 participants in this study as part of a broader audience of teachers from across the Kingdom of Saudi Arabia who had become increasingly interested in Minecraft after their initial trials and wanted to gain more professional expertise. This session facilitated over 2 days was led by Microsoft Innovative Educator Experts and focused on professional learning on the affordances of the game and creating lesson plans. Teachers were provided with practical examples shared by experienced Minecraft educators to give them the expertise to design engaging lesson plans incorporating Minecraft into their

classes. This training session highlighted the foundational aspects of using Minecraft in educational settings and focused on the integration of digital games to promote social and language learning (J. Gee, 2007).

The inclusion of ready-made classroom examples and practical applications aligns with Peterson's (2016) discussion on the effective use of digital games for second language learning, which emphasises the importance of integrating practical examples to facilitate learning. Additionally, the expansion of teachers' capabilities to foster social interactions through Minecraft is supported by Zheng et al. (2020), who highlight the role of digital games in promoting social and language development through immersive, interactive environments. The professional learnings covered essential components such as basic Minecraft introduction and classroom integration as teachers were introduced to the fundamentals of Minecraft and how it could be effectively used in the classroom setting.

Professional development on accessing lessons from the library and using Arabic resources equipped participants to access lessons from the Minecraft library, with a specific focus on available Arabic language resources to enhance the relevance of the content for their students. Lesson plan structure was also covered to explain the essential elements of a well-structured lesson plan and provided a framework for organising instructional content. Furthermore, exploration of teaching tools familiarised participants with various tools within Minecraft, including non-player characters, boards, signs, buttons, and cameras, equipping them to create interactive and engaging learning experiences.

A Minecraft Teacher Academy overview provided insights into the Minecraft Teacher Academy, including an overview of its content and guidance on navigating advanced topics, along with practical application tips and practical activities integrated into the training to give teachers hands-on experience in implementing Minecraft-based activities within their lessons. Question and answer sessions allowed participants to seek clarification on any aspects of Minecraft integration, lesson planning, or teaching tools.

The professional development sessions were integral to the exploratory case study design and qualitative research methodology of this study. Exploratory case studies aim to investigate phenomena in depth within their real-life context, allowing for the emergence of new insights and understanding (Yin, 2017). By providing structured training and hands-on experience, the professional development sessions enabled teachers to develop the necessary skills to integrate Minecraft Education Edition into their EFL classrooms effectively. This aligns with the principles of qualitative research, which emphasise the importance of context and the subjective experiences of participants (Creswell, 2013).

While the professional development sessions were not part of the formal data collection process and were not designed or delivered by the researcher, they provided a preparatory support for the participating EFL teachers. These sessions served as necessary precondition for enabling the teachers to engage meaningfully with Minecraft Education Edition in their EFL classrooms and were attended by both the teacher participants and the researcher to provide common understandings. By equipping the teachers with foundational knowledge and practical skills, the training contributed to their ability to implement the digital game-based approach explored in this study. As such, the professional development served as an important contextual element within the broader research design, by supporting the implementation of Minecraft-based pedagogy that was later explored through the participants' interviews and reflections (Yin, 2017).

4.5.2 Second Training Session (June 13–14, 2023)

The second 2-day session involved the study participants in professional learnings to build on the foundational skills from the first session and expanded teachers' capabilities in using Minecraft to foster social interactions and enhance language learning. This process allowed for continuous refinement of teaching strategies and integration methods and ensured that the study remained responsive to emerging insights and developments (Yin, 2017). The professional development sessions provided a rich context to explore how teachers could apply new technologies in their teaching practices and the impact of these applications on student learning outcomes. Professional development also supports reflective practice, which is a core component of qualitative research. Reflective practice allows participants to critically assess their experiences and generate new understandings (Schön, 2017). By facilitating this reflective process, the professional development sessions contributed to a deeper exploration of how Minecraft Education Edition can be used to enhance social language learning in EFL contexts.

The importance of professional development in this study cannot be overstated. Effective professional development is crucial for enabling teachers to integrate new teaching tools and strategies into their practice. It provides them with the knowledge, skills, and confidence needed to implement innovative teaching methods (Desimone, 2009). In this study, the professional development sessions were essential to prepare the EFL teachers to use Minecraft Education Edition effectively, thereby supporting the consistency and pedagogical depth of the study's implementation. While the researcher did not have any direct control over the content or delivery of these sessions, they offered a shared foundation that supported the teachers' implementation of Minecraft-based lessons in a structured and consistent manner.

The iterative nature of the professional development, beginning with initial training, followed by lesson implementation and subsequent reflections, exemplifies the exploratory approach. The professional development sessions also played a critical role in ensuring the ethical conduct of the study. By providing comprehensive training and support, the sessions ensured that teachers were fully informed and capable of implementing Minecraft-based activities in a manner that was both pedagogically reliable and ethically responsible (Yin, 2017). By examining the perspectives of teachers who participated in the professional development sessions, the study aimed to broaden the understanding of how multiplayer games like Minecraft Education Edition can facilitate social language learning in EFL contexts (Peterson, 2016; Zheng et al., 2020).

Participation in the professional development sessions was voluntary, and the training was provided free of charge by Microsoft to support the integration of Minecraft Education Edition in schools. While Minecraft Education Edition offers valuable pedagogical affordances, it is also important to recognise that its commercial nature may influence school adoption decisions, depending on the institutional budgets, licensing policies, and access to resources. However, in this study, the use of Minecraft was facilitated through freely available licenses during the training period, which mitigated the immediate financial constraints for the participating schools.

4.6 Using Minecraft Education Edition in the Classroom

Following the professional development, teachers were involved in preparing lesson plans that aligned with the English curriculum and integrated Minecraft-based activities. This process allowed them to develop and implement lessons that used the game to enhance social and language learning among students, as digital games can create immersive environments that promote language use and social interaction (Sykes et al., 2010). Interviews were conducted with participants at two points during their 6-week implementation of Minecraft in their EFL classes. Teachers implemented Minecraft lessons in their EFL classrooms twice a week for 45 minutes, where they observed and reflected on the outcomes. Their involvement in the entire process—from professional development to lesson planning and implementation—provided comprehensive insights into the practical applications and challenges of using Minecraft Education Edition in a real-world educational context. This holistic approach is a hallmark of case study research, which aims to explore complex phenomena within their natural settings (Yin, 2017).

4.7 Interview Design Protocols to Investigate Teacher Perspectives

Although these teachers had previously used educational games and websites specifically to enhance their students' grammar skills, their selection for this study was primarily based on their willingness to try new and innovative teaching methods and their interest in exploring DGBLL to improve social English language learning. Their familiarity with English language teaching methods, including the use of technology and online teaching tools, reflects the evolving nature of education, especially in response to the challenges posed by the COVID-19 pandemic (Basilaia & Kvavadze, 2020). This diverse group of teachers brought a rich array of expertise and perspectives to the study, where they offered valuable insights into their teaching practices and the impact of technology on their classrooms within the Saudi Arabian educational landscape. Their use of technology aligns with the principles of NLS, which emphasise that literacy practices are deeply embedded in social and cultural contexts (Street, 2003). By incorporating digital tools like Minecraft Education Edition, these teachers are engaging in modern literacy practices that reflect the evolving nature of communication and learning in the 21st century.

The design of the semi-structured interviews was informed by sociocultural and multimodal perspectives, both of which emphasise the significance of social interaction and the use of multiple modes of communication in learning (Kress, 2010; Vygotsky, 1978). Sociocultural theory highlights the role of social interactions in cognitive development. By exploring how EFL teachers create interactive learning environments using the Minecraft platform, the interviews aimed to uncover how social interactions in the classroom contribute to social English language development.

Multimodal perspectives consider how various modes of communication (visual, auditory, textual) are integrated to enhance language learning (Kress, 2010). The interview questions were designed to investigate how EFL teachers used the multimodal features of Minecraft Education Edition to support social language learning, emphasising the importance of integrating different modes of communication to create engaging and effective learning experiences. The interview questions were designed to investigate how teachers incorporate these practices into their classrooms using the Minecraft platform. By focusing on EFL education, the interviews aimed to understand how DGBL tools like Minecraft Education Edition can enhance English language learning in culturally relevant ways (J. Richards & Rodgers, 2014). The use of semi-structured interviews facilitated an exploration of how EFL teachers' literacy practices are situated within their specific educational contexts, aligning with the principles of NLS (J. Gee, 2015a).

The integration of the sociocultural and multimodal frameworks ensured that the semi-structured interviews not only gathered data on the teachers' current practices and attitudes but also provided a deep understanding of the underlying educational theories at play. By aligning the interviews with sociocultural theory, the study emphasises the importance of social interaction in language development. This is crucial for exploring how teachers can leverage Minecraft Education Edition to create interactive learning environments that foster English language skills.

Multimodal perspectives add another layer of analysis by examining how different modes of communication are used in teaching. This is particularly relevant for Minecraft Education Edition, which offers a rich, multimodal platform for language learning. By investigating how EFL teachers use these features, the study can provide insights into the effectiveness of multimodal learning environments in EFL education. The alignment with NLS further contextualises the research within broader social and cultural frameworks. By exploring how literacy practices are embedded in social contexts, the interviews can reveal how multiplayer digital games like Minecraft are not just tools for learning but also mediums that reflect and shape cultural practices in language learning (J. Gee, 2015a; Street, 2003).

The structured yet flexible approach of semi-structured interviews is particularly well-suited for this research. It allows for an in-depth exploration of the complexities of teaching practices and provides the flexibility needed to adapt to the participants' responses, ensuring a comprehensive understanding of the subject matter. This method, therefore, aligns perfectly with the exploratory nature of the case study, aimed at uncovering new insights and understanding the dynamics of integrating DGBLL in EFL education (Creswell, 2013; Patton, 2015; Yin, 2017).

As noted earlier, the interviews were conducted at three points—once prior to the Minecraft Education Edition professional learning and twice during the teachers' trials of implementing the tool in their EFL classes. The initial set of semi-structured interviews was designed to establish a comprehensive understanding of the current pedagogical practices of the EFL teachers before the implementation of Minecraft Education Edition. This phase aimed to capture the teachers' existing strategies, their openness to incorporating DGBLL, and their perspectives on the affordances of such tools to foster social learning environments. The insights gathered here set the stage for the subsequent phases of the study, providing a baseline for evaluating the impact of professional development and the integration of Minecraft in EFL classrooms.

The interviews after the Minecraft professional learning were conducted at Week 3 and Week 6 of the implementation in classrooms. The purpose of these second and third

interviews was to explore teachers' initial experiences and challenges after their integration of Minecraft in their classrooms (Week 3) and to document the progress and any adjustments made as teachers gained more experience and feedback from their students (Week 6). The interviews at Week 3 provided a detailed exploration of the progress and challenges encountered by the EFL teachers while integrating Minecraft into their classrooms. These insights were crucial for understanding the initial impacts of DGBLL on teaching practices and the students' engagement and social language learning. As the study moved to the interview in Week 6, the focus was on developing more in-depth insights into teachers' experiences. These interviews were designed to investigate teachers' perspectives on using DGBLL, focusing on the advantages and disadvantages of integrating Minecraft and the specific strategies employed in lesson planning.

The full protocols used in the interviews at the three data points are included in Appendix A. The next section outlines the techniques used to analyse the interview responses. It is important to note that in qualitative interview research, variation in the length and depth of participants' responses is common and reflects differences in participants' communication styles, experiences, and engagement level, rather than inconsistency in data collection (Patton, 2015).

4.8 Data Analysis of Interview Reponses

The coding of interview data to establish themes that emerged followed a systematic approach to ensure comprehensive and reliable data analysis. The coding process was informed by a comprehensive understanding of the theoretical lens being applied to the data and iterative processes with my supervisory team to established reliability of the themes that emerged. The coding process involved the following five steps.

1. *Initial coding*. Each interview transcript was read multiple times to gain a deep understanding of the content. Initial codes were assigned to segments of the text that appeared relevant to the research questions. These initial codes were descriptive and aimed to capture the essence of the data (Braun & Clarke, 2006). This step involved identifying significant statements, phrases, and patterns within the transcripts, which were then labelled with initial codes that described the content.
2. *Code development*. The codes were developed inductively from the data; in other words, they emerged from the data itself rather than being based on a pre-existing framework. Patterns and recurring topics were identified, and codes were created to represent these patterns (V. Clarke & Braun, 2013). This inductive approach

allowed the data to guide the coding process, to ensure that the analysis remained grounded in the participants' perspectives and experiences.

3. *Code refinement*. After the initial coding, the codes were reviewed and refined. This involved merging similar codes, splitting broader codes into more specific ones, and ensuring that each code accurately reflected the data it represented. This iterative process helped develop a comprehensive coding scheme (Braun & Clarke, 2019). During this phase, codes were constantly compared against the data to ensure they were comprehensive and reflective of the nuances within the transcripts.
4. *Theme development*. Once the codes were refined, they were organised into broader themes that captured the overarching patterns in the data. This involved clustering related codes and identifying higher level concepts that linked them together (Braun & Clarke, 2012). The themes were then reviewed and refined to ensure they provided a coherent and insightful representation of the data.
5. *Verification and validation*. To ensure the reliability and validity of the coding process, the themes and codes were iteratively cross-checked by my two supervisors. Discrepancies were discussed and resolved through consensus, to enhance the trustworthiness of the findings (Lincoln & Guba, 1985).

4.9 Theoretical Bases to Coding Themes

As the study is situated at the intersection of NLS and EFL education, the coding themes were informed by these theoretical perspectives. This approach aimed to understand teacher perspectives informed by these fields to explore the integration of DGBL tools such as Minecraft Education Edition in EFL classrooms. NLS asserts that literacy involves not only the ability to read and write but also the skills to use and understand texts within specific social contexts (J. Gee, 2003; Street, 2003). By examining themes that emerged on how DGBLL impacts on literacy practices in EFL classroom learning, this analysis of the data seeks to bridge these domains and offer insights into the evolving nature of literacy in digital contexts.

Data analysis was grounded in two theoretical frameworks under the overarching perspective of NLS, as detailed in Chapter 3. To recap, it was guided by understandings of sociocultural theory and multimodal literacy. The sociocultural lens is rooted in the work of Vygotsky, with this theory emphasising the importance of social interaction and cultural context in learning. According to Vygotsky (1978), learning occurs through social interactions and the use of cultural tools. Within the NLS framework, sociocultural theory helped analyse the teacher responses related to the way digital games like Minecraft can create rich social environments that promote collaborative learning and the development of social language

skills through interaction. This perspective is particularly relevant in EFL contexts, where social interactions facilitated by digital tools can enhance language learning and cultural understanding.

From a multimodal literacy framework, interview data were analysed with consideration of the multiple modes (visual, auditory, textual) through which meaning is made and understood. In a multimodal environment, meaning is communicated through a combination of modes. Kress and van Leeuwen (2001) argue that literacy in the modern age involves navigating and integrating these various modes. Under the NLS framework, multimodal literacy is critical for understanding how EFL students use different modes in digital environments like Minecraft to communicate, collaborate, and learn English in a social context. This approach provided theory to generate valuable insights into how multimodal texts can support language learning in EFL classrooms.

4.9.1 Example of Coding Scheme for Interview Questions Related to RQ1

The interview questions related to RQ1 were designed to investigate the teachers' current practices and their receptiveness to using DGBLL. These questions align with sociocultural and multimodal theories by exploring how teachers facilitate social interactions and use multiple modes of communication in their teaching. In qualitative research, aligning interview questions with theoretical frameworks helps ensure that the data collected addresses the research questions in a meaningful way (V. Clarke & Braun, 2013). As discussed in Chapter 3, this study used sociocultural theory (Vygotsky, 1978) and multimodal literacy (Kress & van Leeuwen, 2001) as guiding frameworks to explore the integration of Minecraft Education Edition in EFL classrooms.

Table 4.4 presents a selection of interview questions asked at the first data collection point prior to the Minecraft professional learning, their alignment with the theoretical frameworks, and coding examples derived from the data. This structure illustrates how the interviews were designed to elicit responses that reflect key aspects of sociocultural theory and multimodal literacy, and how these responses were subsequently coded.

Table 4.4

Alignment of Interview Questions at Point 1 and Coding Examples

Interview question	Theoretical framework	Participant response	Coding theme and subtheme
How do you currently foster a social learning environment in your class to encourage your students to use oral English language?	Sociocultural theory	(0103) We never pass a class without either using pair or group work in order to encourage them to interact using English with others in a real situation.	Main theme: Pedagogical approach Subthemes: collaboration
How do students engage with visual resources when they engage in learning English?	Multimodal theory	(0104) Sometimes in vocabulary we use a short video that is describing the situation. So, this will help students to match the word, or connect it with some examples from real life. And that will help them to understand the word better.	Main theme: Multimodal affordances Subtheme: scaffolding

4.9.2 Example of Coding Scheme for Interview Questions Related to RQ2

The interview questions related to RQ2 focus on the practical outcomes of using DGBLL in terms of language development and social interaction. These questions were designed to capture the impact of DGBLL on students' English language skills and their social practices at two points over the 6-week trial of the pedagogies in classrooms. They explore how DGBLL, specifically Minecraft, facilitates social learning and enhances students' language skills. By examining changes in teaching practices and student engagement, these questions address the social dynamics that contribute to language learning. The focus on peer-to-peer learning and community building aligns with Vygotsky's (1978) emphasis on social interaction as a driver for cognitive development.

Furthermore, these questions investigate the multimodal aspects of DGBLL by exploring how the use of various modes of communication—visual, auditory, and textual—within Minecraft supports social language learning. By focusing on students' engagement with the multimodal elements in Minecraft and the benefits of integrating multiple modes in their learning activities, the interview questions aimed to uncover how multimodal experiences in Minecraft enhance language development. This approach is consistent with Kress's (2010) theory of multimodal literacy, which emphasises that learning is more effective when multiple semiotic resources are used, providing a richer context for meaning-making.

Interviews at Point 2 were conducted following 3 weeks of lessons enriched with the integration of Minecraft in the classroom (occurring after the teachers had undergone Minecraft professional development), while interviews at Point 3 followed an extended

engagement period of 6 weeks of lessons. This provided an opportunity to build up understandings of the teachers' perspectives and identify the common patterns that characterised the teachers' pedagogical strategies, as well as the dynamics of the classroom environment. This iterative process also helped to develop relationships with the teachers to create a comfortable space for them to share their experiences more deeply.

Coding the interview data centred around the common themes and subthemes transcending these interviews at two points, to reveal the enduring aspects of using Minecraft to enhance social language learning. The questions explored the perspectives, challenges, and strategies of educators and the engagement and motivation of the students. Additionally, the questions examined the multimodal affordances of Minecraft, and opportunities to connect the students with diverse modes of communication and real-world contexts.

Table 4.5 presents a selection of interview questions asked at the second and third data collection points, their alignment with the theoretical frameworks, and coding examples derived from the data. This structure demonstrates how the interviews were designed to capture responses reflecting key aspects of sociocultural theory and multimodal literacy, and how these responses were subsequently coded.

Table 4.5

Alignment of Interview Questions at Points 2 and 3 and Coding Examples

Interview question	Theoretical framework	Participant response	Coding theme and subtheme
How have your students responded to using Minecraft and what have you noticed about their engagement with multimodal elements as they play?	Multimodal theory	(0206) The interaction with these characters helps them to gain more information, to make decisions, to be more creative, according to the sound, when they hear something, the sound, let's say the sound of the rain, the sound of the thunder, they might read that there is something scary is going to happen, or something dangerous.	Main theme: Multimodal affordances Subtheme: scaffolding
How have you seen the classroom community change since incorporating Minecraft in your teaching?	Sociocultural theory	(0208) The students were more engaged, they were more collaborative, they were more helpful. As we said, they helped each other, they were working as a teamwork despite the differences in their abilities. They overcame all the difficulties since they were working together and helping each other. Whenever a student faces any difficulty and spelling a word out, saying something, the other one helped him.	Main theme: Classroom as a community of practice Subtheme: building community

4.9.3 Example of Coding Scheme for Interview Questions Related to RQ3

The interview questions related to RQ3 explored the practicalities of incorporating DGBLL into the lesson plans and teaching strategies. Questions aimed to understand how

teachers integrate digital games into their curriculum and the challenges they faced over the 6-week period. From a sociocultural perspective, the interview questions were designed to investigate how Minecraft facilitates social interactions and enhances language learning, aligning with Vygotsky's (1978) view of learning as a socially mediated process. By examining the benefits and challenges of using DGBLL, these questions addressed the practical application of sociocultural theory in creating inclusive and interactive learning environments. Additionally, the interview questions explored the multimodal aspects of DGBLL by focusing on the design and implementation of lesson plans that leverage Minecraft's multimodal capabilities. This approach is consistent with Kress's (2010) theory of multimodal literacy, which emphasises the importance of integrating various semiotic resources in teaching. Together, these questions included questions asked at Point 2 with some additional questions asked at Point 3 to ensure a comprehensive investigation of how Minecraft Education Edition enhances social language learning and multimodal engagement in primary EFL classrooms.

Table 4.6 presents a selection of interview questions that were extensions asked at the third data collection point, their alignment with the theoretical frameworks, and coding examples derived from the data. This structure demonstrates how the interviews were designed to capture responses reflecting key aspects of sociocultural theory and multimodal literacy, and how these responses were subsequently coded.

Table 4.6

Alignment of Interview Questions at Point 3 and Coding Examples

Interview question	Theoretical framework	Participant response	Coding theme and subtheme
How do you design your lesson plans to incorporate Minecraft as a tool for promoting English as a social practice?	Sociocultural theory	Teacher (0210): When designing the activities, I tried to keep in mind designing a multistep activity. Activities were designed for group work or for pair work, okay, I give roles to my students during the lesson. Like some students who had even before we start the lesson, some students had to explain the steps, two or three of the shy students or the students who were experts in the game were given the roles of teacher assistants, like they were going around helping students who needed to help. Students, during that game, students were asked to wait for turns to ask for help. All these things help their social practices, like the ones they have to practise in real life.	Main theme: Pedagogical approach Subtheme: Collaboration
How do you differentiate your lesson plans to accommodate students with varying English proficiency levels when using Minecraft?	Sociocultural theory	Teacher (0207): We try our best to include every student in the activity. With below-level students, I can as a teacher assign tasks, for example, reviewing that they have done from teaching vocabulary, I just assign the activity below the level the student. Teacher (0208): Actually, I prefer the mixed ability. And this is because the mixed-ability students, high achievers, they try to help the low achievers. So, it helps more while playing. Sometimes I replace or modified activities to better meet the students' needs. Sometimes I go for easier activity. And sometimes for harder, so it depends.	Main theme: Pedagogical approach Subtheme: Adapting/adjusting instruction for diverse learning needs

The categorisation and alignment of these interview questions with sociocultural and multimodal theories ensured that the study comprehensively investigated the teachers' perspective about how DGBLL could facilitate social learning environments and enhance English language learning through social interactions and multimodal resources. This dual theoretical framework allowed for a nuanced exploration of both the social dynamics and the multimodal resources that can facilitate language learning in a digital game-based environment. The careful design of the interview questions ensured that the study could effectively investigate the potential of DGBLL in promoting English as a social practice among primary students.

4.9.4 Overview of Final Coding Themes

Table 4.7 provides an overview of the final coding themes derived from the interview data for each of the research questions. The main themes and subthemes captured the teachers' perspectives and experiences with using Minecraft Education Edition in their EFL classrooms. These themes reflect the various aspects of technology integration, pedagogical approaches, classroom dynamics, and social and multimodal affordances, thus providing a comprehensive understanding of how DGBL influences social language teaching and learning practices**.**

Table 4.7

Examples of Final Coding Themes and Subthemes Derived From the Teacher Interviews

Theme	Subtheme	Sample quote
RQ1: Perspectives on using DGBLL to promote English as a social practice for their students		
Pedagogical approach	Collaboration/building community	I believe it's like we form a small community, I try my best not to make them not compete with each other. (Aisha)
Perspectives on using technology in the classroom	Challenges and strategies in implementing Minecraft-supported learning	When I have a grammar lesson, in order to check for understanding, I prepared by the end of each part, look at game, 10 to 15 questions to check their understanding. (Fatima)
Authentic language practice for EFL learning	Challenges with English proficiency	They use Arabic ... They're comfortable with it ... We are trying our best as a community. (Aisha)
	Encouraging English communication	I encourage them to speak and communicate with their peers in English as much as possible. (Aisha)
	Uses of various digital tools and resources	I use PowerPoint presentations and videos to clarify topics and engage students. (Fatima)
	Focus on skills development	The primary focus was on skills acquisition rather than fostering extensive social interaction. (Nouf)
Multimodal engagement	Use of gestures	Lower achievers rely on gestures to convey their messages when English words fall short. (Aisha)
Multimodal affordances	Deep understanding/ scaffolding	I present a story about an animal or a farm using pictures and videos to help them understand and remember words. (Aisha)
DGBLL for EFL learning	Concerns and challenges in integrating DGBLL	I feel that some students will not concentrate on playing for learning. They only concentrate on playing on the for the purpose of playing. (Hessa)
	Potential of DGBLL as a motivational and assessment tool	we explain our lesson then, we had a quiz on Padlet or Quizlet. And they play it as a game. And in the same time, it's an informal assessment (Hessa)
RQ2: How does the use of DGBLL help advance primary students' English as a social practice?		
Sociocultural affordances for learning	Peer interactions	Strong students assist weak students in accomplishing certain tasks. (Hala)
	Scaffolding	I assign different roles ... For example, building a certain community. (Mariam)

Theme	Subtheme	Sample quote
	Collaborative learning	Minecraft is more effective. It makes them elaborate, talk more, have open conversations. (Majd)
Zone of proximal development (ZPD)	Support from more knowledgeable others (MKOs)	If anyone didn't know anything, for example, there's a student that doesn't know how to build the model, her classmates help her. (Mariam)
	Adapting to ZPD	Minecraft has helped me identify some weaknesses or skills that my students lack. So, I have adapted my lesson plan to target all students' levels. (Mariam)
	Games as support	If I put [the task] on the screen and they see it and read it and I would say it out loud to them ... You will see them approaching and being engaged and following the instruction. (Majd)
	Student-led scaffolding	They were able to help each other even if we have difficulty or students have any difficulty in playing ... The others help them so they were able to help each other. (Hessa)
	Linguistic environment	Minecraft served as an immersive linguistic environment that scaffolded the language development. (Sarah)
Multimodal social semiotic view of language and relevance for language learning in the digital age	Development of literacy skills	I want them to develop all the skills for grammar, reading, oral vocabulary, writing, all the skills. (Ayah)
	Engagement with multiple modes	When it comes to unfamiliar vocabulary words, yes they try to use gestures. (Fatima)
Multimodal social semiotics understanding of Minecraft play	Assessment and feedback	Minecraft has facilitated the testing process okay and the feedback process, both the last two steps in the teaching process that Minecraft made it easier. (Mariam)
	Multimodal interaction with the game elements	They know how to build or to break the bricks. (Majd)
	Designing learning environment in Minecraft	In a virtual reality like Minecraft, it's easier just to go to the sea and understand what a marine life is. (Aisha)
	Code-based modifications and literacy skills	… when it comes to writing, they can use it when they search for the items I'm going to ask them to use to build; also [if] they are going to code, they need to learn writing, they can't do it without the writing skill, so they can improve it. (Majd)
	Creativity, social interaction, and collaboration	It was an interactive learning, meaning, they started to share, give, to share ideas; they give feedback to each other, and there was an interactive learning environment during my English classes. With this environment, I didn't see it before when not using Minecraft. (Hessa)
Sociocultural affordances of digital games	Collaborative and social learning in Minecraft	Minecraft is more fun and engaging and the students are working collaboratively (Mariam)
Multimodal affordances	Multimodal learning in Minecraft	Students explore the world just like in real life. (Hessa)

Theme	Subtheme	Sample quote
	Vocabulary acquisition through multimodal experiences	I let the character spin so they understand what the word means. (Al Batool)
	Visualising and understanding abstract concepts	I told her to click on that, on the cube, so she understands what to say. (Aisha)
	Enhancing spelling and communication skills via in-game communication	The students were able to exchange some oral expressions, and they were able to type them down in the chat box. (Hala)
RQ3: How do teachers integrate DGBLL into their EFL pedagogical practice?		
Pedagogical approach	Teacher scaffolding (facilitation)	I have to go and put them back on track again. (Aisha)
	Differentiation, support	Through group-work activities, strong students assist weak students in accomplishing certain tasks. (Hala)
	Language development	Some of the lesson objectives are to teach certain vocabularies that are embedded in my lesson plan when I design the Minecraft game. (Hala)
	Collaboration	Activities were designed for group work or for pair work, okay, I give roles to my students during the lesson. (Sarah)
	Adapting/adjusting instruction	If I'm sure that he or she cannot mingle with the group, I can just give her a specific task. (Al Batool)
Integrating multimodal DGBLL into EFL pedagogical practice	Modifying game environment	I try my best to find different ways of teaching one lesson at different levels. (Aisha)
	Social interaction and collaboration	They were using reading and writing to chat with each other, asking each other's help while playing. (Sarah)
	Visual and auditory modes	If I just say "cube", they wouldn't know what is a cube, but if they visualise it and then in front of them in a device they see a cube, so they will associate a cube … with what they see. (Aisha)
	Movement and virtual environments	When I let the character move in a specific way and I ask them to describe how the character moved, they understand that the adverb describes the movement of this character. (Al Batool)
Home–school connection	Homework assignments in Minecraft	The students play Minecraft at home and they show me what they build. For them, it's fun but for me, I gave them two homework assignments and they did it. (Al Batool)
	Continuous engagement	They get inside the school in the early morning, and they come to me and say, "Teacher, I want to see you," and it's not their class time. (Majd)
	Flexibility for absent students	Sometimes we have absent students, so they are engaged even if they are absent. (Aisha)

Note. DGBLL = digital game-based language learning; EFL = English as a foreign language; MKOs = more knowledgeable others; RQ = research question; ZPD = zone of proximal development.

The examples of the final coding themes and subthemes shown in Table 4.7 were developed through iterative analysis of semi-structured interviews conducted with primary school EFL teachers in Riyadh, Saudi Arabia. These interviews explored the teachers' perspectives on using DGBLL to foster English as a social practice among their students. The final codes were used for data analysis in Chapter 5, where detailed insights and findings will be presented.

For RQ1—What are primary teachers' perspectives on using DGBLL to promote English as a social practice for their students?—data were gathered through semi-structured interviews with EFL teachers, who incorporated various digital tools and collaborative strategies in their classrooms. The coding themes emphasise the teachers' perspectives about the creation of classroom communities, the use of digital tools, and the evaluation of these tools' effectiveness in promoting social interaction. Furthermore, the strategies teachers employed to balance the use of students' first language and English were carefully analysed.

RQ2—How does using DGBLL help advance primary students' English as a social practice?—involved a detailed analysis of the teachers' descriptions of peer interactions and scaffolding within the Minecraft environment. The coding themes focus on the sociocultural benefits of gaming, peer support mechanisms, and the adaptability of Minecraft to address individual learning needs. This analysis underscores the alignment with Vygotsky's concepts of the ZPD and MKOs by highlighting the dynamic interplay between the students' social interactions, multimodal engagement, and language development.

RQ3—How do teachers integrate DGBLL into their EFL pedagogical practice?—explored the methods teachers used to facilitate learning and differentiation within the Minecraft environment. Themes include teacher facilitation, differentiation strategies, and the integration of visual, auditory, and physical elements to enhance learning. The home–school connection was also examined by focusing on how the Minecraft platform extended language learning beyond the classroom and maintained student engagement beyond the school's walls.

In conclusion, the coding themes and subthemes developed from the semi-structured interviews provide a strong framework for analysing how DGBLL, particularly through Minecraft Education Edition, can be effectively integrated into EFL classrooms. The thematic analysis was instrumental in uncovering both the potential and challenges of using DGBLL to promote English as a social practice. This systematic approach emphasised the necessity of thoughtful implementation and continuous adaptation of digital tools to meet the diverse social and learning needs of students. By grounding the study in the sociocultural and multimodal theories, this research offers a significant contribution to the methodology of

DGBL and offers practical insights for teachers who seek to enhance their students' social language learning through innovative technological means.

4.10 Research Ethics

This study was conducted in accordance with the Australian Code for the Responsible Conduct of Research and the National Statement on Ethical Conduct in Human Research. Prior to the commencement of the study, ethical approval was obtained through the Australian Catholic University Human Research Ethics Committee processes to ensure adherence to all necessary ethical guidelines and standards (Ethics Register Number: 2021-253E; see Appendix B). Individual school principals in Saudi Arabia then provided informed consent (see Appendix C) and invited their teachers who were interested in Minecraft Education Edition professional development to participate. Subsequently, all participant teachers provided informed consent. This ensured that the research was conducted in an ethical manner, respecting the rights and confidentiality of the participants (Yin, 2017). Participants were informed that they could withdraw from the study at any stage. An example of the consent form signed by the teachers is provided in Appendix D.

Cultural sensitivities were carefully considered throughout the study. For example, only female participants were included in deference to the cultural norms, and interview questions were asked in either English or Arabic, based on the participants' preferences. Participants were also informed they could turn off the camera during the Zoom interview, and only audio recordings of interviews were saved for transcription. All interview transcripts were translated by the candidate , who has a comprehensive understanding of both English and Arabic languages. Participants were also provided with the opportunity to member check their interview data (Carlson, 2010).

As a researcher with a professional background in education and familiarity with the local EFL teaching context, I approached this study with an insider perspective. This insider status allowed me to build trust with participants and to interpret their perspectives within the broader cultural and educational norms of Saudi Arabia. However, conscious efforts were made throughout the research process to remain reflexive and to minimise bias. My role was to facilitate the teachers' voices rather than impose personal interpretations. Ethical considerations, cultural sensitivity, and adherence to the principles of qualitative research rigour guided the research design, data collection, and analysis (Creswell, 2013; Patton, 2015).

4.11 Conclusion

This qualitative study involved semi-structured interviews conducted at three points to investigate the perspectives of 10 teachers on integrating Minecraft as a pedagogical tool in their teaching practices. These interviews were conducted to provide rich, qualitative data essential for exploring the complexities of DGBLL and its impact on EFL. Qualitative analysis methods generated key themes to represent the participant responses. This methodological approach allowed for an in-depth exploration of the social and multimodal aspects of language learning that aligns with the theoretical frameworks of sociocultural theory (Vygotsky, 1978) and multimodal literacy (Kress, 2010) under the umbrella of NLS (Street, 2003).

The methodological approach using semi-structured interviews is well supported by sociocultural theory, which underscores the significance of social interactions and cultural contexts in learning (Vygotsky, 1978). This approach allowed for the exploration of how EFL teachers facilitated social learning environments by using the Minecraft platform as a pedagogical tool, thereby fostering an interactive and collaborative classroom atmosphere.

Multimodal literacy theory, as articulated by Kress (2010), emphasises the integration of various modes of communication—such as visual, auditory, and textual—in educational practices. The interviews were designed to capture how these multimodal elements were leveraged in the classroom through Minecraft, which provided insights into how digital games can enhance language learning by engaging multiple senses and forms of expression.

The principles of NLS further contextualised the research within broader social and cultural frameworks, thereby highlighting that literacy practices are deeply embedded in the contexts in which they occur (Street, 2003). The interview questions were crafted to uncover how EFL teachers incorporated these sociocultural literacy practices into their teaching using Minecraft, thereby aligning with the NLS perspective that literacy is a socially situated practice. By capturing the narratives and reflections of the EFL teachers, the interviews were designed to provide valuable insights into the practical aspects of integrating DGBLL tools into the curriculum. This methodological approach is crucial for developing a nuanced understanding of how digital games can be effectively used to promote social language learning, as supported by the theories of multimodality and sociocultural learning (Kress, 2010; Vygotsky, 1978).

The iterative nature of the interviews, conducted before and after the professional development sessions, ensured that the research could capture emerging insights and changes in the teachers' experiences. This flexibility is a hallmark of qualitative research, which prioritises understanding the participants' perspectives within their specific educational contexts (Patton,

2015). In conclusion, the semi-structured interviews were a vital methodological tool in this exploratory case study. They allowed for a detailed and contextually rich exploration of the EFL teachers' integration of Minecraft and provided essential insights that aligned with the theoretical frameworks of sociocultural and multimodal theories.

Chapter 5: Findings

5.1 Introduction

In the dynamic landscape of modern education, the integration of technology into teaching and learning practices has become a pivotal point of exploration and innovation. The previous chapter provided details of the methods adopted to investigate teacher perspectives on the potential of DGBLL to facilitate multimodal social environments for advancing EFL learning. It provided details related to the research design, the nature of the data collection sites, and the criteria used for selection of the participants, and documented the semi-structured interview protocols and approach to the thematic data analysis. This chapter delves into the heart of the study and presents the interview findings, which seek to uncover teacher perspectives on the multifaceted role of technology and specifically Minecraft Education Edition in EFL educational settings. This research journey was guided by a central question and three interrelated sub-questions that collectively form the foundation for analysis of the interviews with EFL teachers based in Riyadh, Saudi Arabia. The main question was:

> What are primary teachers' perspectives on the potential of DGBLL for supporting social learning environments for teaching primary school children EFL?

The three sub-questions were:

> RQ1: What are primary teachers' perspectives on using DGBLL to promote English as a social practice for their students?
>
> RQ2: How does the use of DGBLL help advance primary students' English as a social practice?
>
> RQ3: How do teachers integrate DGBLL into their EFL pedagogical practice?

In this chapter, findings for each RQ are presented in turn, with themes illustrated through the voices of the teachers who participated in the study. Before this presentation of the findings, the following section provides some contextual framing on the background of the 10 teachers who participated in the study. and details of the Minecraft Education Edition professional development they undertook with Microsoft in Riyadh, Saudi Arabia. As the interviews with the EFL teachers were conducted before and after their participation in the professional development sessions, these details are important to understand the contextual framing of the study. It is important to note that the findings presented in this chapter are based on the teachers' reported experiences and reflections on integrating Minecraft Education Edition in their EFL classrooms. As the study did not involve classroom

observations, descriptions of classroom activities are based solely on the teachers' narratives during the interviews.

5.1.1 Background on the Teachers Who Took Part in the Study

The findings from the interviews with the 10 teachers provided comprehensive insight into their diverse range of experiences and backgrounds within the teaching profession, particularly within the context of the two schools located in Riyadh, Saudi Arabia. These teachers collectively possessed a wealth of knowledge and experience in the field, with teaching experience spanning from 4 to 16 years. They brought varied educational backgrounds, including degrees in English literature, educational leadership, and specialised certificates such as TESOL and Cambridge-certified teacher training.

All participants were primary-level teachers, specialising in specific subjects, such as English or social studies. Additionally, a few teachers held leadership positions within their schools, serving as heads of departments or coordinators for different sections. These roles within the Saudi educational system highlighted their ability to adapt and excel within a culturally specific and dynamic context. Participants' familiarity with English language teaching methods, including the use of technology and online teaching tools, reflects the evolving nature of education, especially in response to the challenges posed by the COVID-19 pandemic, which affected schools worldwide, including those in Riyadh, Saudi Arabia. During COVID-19 schools were forced to conduct lessons online for their students, advancing the visibility of and reliance on technologies for communication. This diverse group of teachers brings a rich array of expertise and perspectives to the findings that are detailed in this chapter and offer valuable insights into their teaching practices and the impact of technology on their classrooms within the Saudi Arabian educational landscape.

5.2 RQ1: What Are Primary Teachers' Perspectives on Using DGBLL to Promote English as a Social Practice for Their Students?

To address this question, interviews conducted prior to the Minecraft Education Edition professional development were analysed to identify significant main themes and subthemes that emerged to understand how the range of 10 teachers positioned DGBLL in their classrooms as a tool for language learning. Findings on the teachers' perspectives on using DGBLL in the classroom before integrating Minecraft Education Edition in their teaching are now presented. Although Saudi primary schools largely maintain traditional classroom practices, the participating schools in this study began showing interest in digital innovations during the COVID-19 pandemic. This context explains the teachers' receptiveness to

exploring DGBLL, even though traditional approaches continued to characterise much of their teaching.Therefore, RQ1 captures their perspectives on social interaction in language learning and their openness to the potential of digital games to support these practices.

5.2.1 Building Socially Interactive EFL Classrooms

In this study, literacy is conceptualised as a sociocultural practice with the view that communication skills develop through effective social participation. Extending the traditional concept of literacy development, a social practice perspective (Barton & Hamilton, 2012; J. Gee, 1992) emphasises the importance of the "social relationships and institutions within which literacy is embedded" (Barton & Hamilton, 2000, p. 16). In this way, this section is focused on how literacy practices take a variety of forms that are embedded and situated in everyday life within specific social and cultural contexts (Barton et al., 2000).

In the context of EFL classrooms, while not yet integrating Minecraft Education Edition, teachers were interested in fostering communities of engaged learners through various digital tools, such as Doorman videos and Quizlets, as they believed these platforms strengthened the classroom community. These tools, according to the teachers, created platforms for interactive and engaging learning experiences that served as a catalyst for community development. Aisha tried to avoid excessive competition between students, and this is a prime example of her dedication to foster a sense of inclusivity and belonging among her students where her students feel valued and supported. She stated: "I believe it's like we form a small community, but I try my best not to make them compete with each other."

Collaboration was integral to building community. Teachers like Aisha (Year 6 teacher), Majd (Year 4 teacher), and others highlighted the significance of peer tutoring and problem-solving in pairs or groups, where students actively correct each other's mistakes and share their knowledge. Aisha's observation that "they correct each other's mistakes" exemplifies how these collaborative strategies contribute to the students' language development within their ZPD, as students were supported to improve their language learning through interactions with peers who had more advanced English skills. Additionally, teachers like Mariam (Year 6 teacher), Hessa (Year 4 teacher), and Hala (Year 5 and 6 teacher) stressed the value of cooperative learning, encouraging students to learn from each other, with Mariam noting: "We just encourage the students to learn from each other." These collaborative pedagogical strategies position the students as MKOs, which encourages a supportive and interactive classroom environment (Vygotsky, 1978).

Hence, when considering digital tools from a sociocultural perspective, it becomes essential to critically assess whether they facilitate genuine, meaningful social interaction, a

crucial aspect of building community. Some digital tools may unintentionally prioritise individual or competitive tasks over collaborative elements that promote deep social engagement (Reinhardt, 2019). For instance, Nouf's assignment of reading tasks and online quizzes, while engaging, may not have fully facilitated the desired level of social interaction among students. Nouf (Year 4 teacher) explained: "One time, I asked them, for example, to read this story ... they were really happy to have this chance. Each one of them started to spot the most important event in this story." This illustrates how the task, while fostering engagement, might not have facilitated social interaction. This example highlights how digital tools do not necessarily foster social interactions or oral language use. The importance of critically evaluating digital tools to ensure that they align with the goal of creating a vibrant and inclusive classroom community, where collaboration plays a vital role in nurturing meaningful interpersonal interactions for language learning, was made visible.

In their interviews, teachers emphasised the integration of various games and applications to enhance language learning and social interaction in the EFL classroom. They harnessed the potential of these tools for diverse skills development. For example, Fatima (Year 5 and 6 teacher) mentioned the use of platforms like Canva and educational games such as Blooket and Kahoot! for skills development and assessment, emphasising the importance of technology in modern education. Their responses suggested receptiveness to the idea of introducing DGBLL through the integration of Minecraft Education Edition.

The teachers acknowledged the benefits of digital tools for fostering teamwork, collaboration, and communication. However, some limitations became apparent. Sarah (Year 5 and 6 teacher) explained that while her students were encouraged to speak English in the classroom, they might resort to using phrases of description in situations where they struggled with vocabulary:

> They are supposed to speak English all the time, of course, because the language of instruction in our school is English. But of course, some of them find it difficult to complete full dialogue or a full conversation in English. Sometimes they actually use, you know, I always press on this, they use phrases, specific phrases, to give the meaning to me because they can't express it in vocabulary, in the vocabulary they need. (Sarah)

Sarah, in the narrative above, illustrates the way her students use phrases of words rather than specific vocabulary when they struggle with nuances of the English language. The use of first language, Arabic, by students in the classroom was a problem the teachers commented upon. According to the teachers, students often found comfort in using the Arabic language as their means of communication. Aisha, for example, highlighted how students

resorted to Arabic when they encountered challenges in understanding or communicating. To address this, teachers like Aisha have implemented strategies such as introducing games that discouraged the use of Arabic during classes, to encourage her students to use English in the classroom setting. She said:

> They use Arabic ... they are comfortable with it ... we are trying our best as a community. I won't, I won't say they don't use Arabic, they definitely use Arabic, because it's their comfort zone, where they get into whenever they feel like, "Oh, I'm not doing well, I'm not understanding anything." But I am trying my very best to ship them back to speak English. I encourage them to speak and communicate with their peers in English as much as possible. (Aisha)

Despite Aisha's efforts to foster English, it's evident that students occasionally reverted to Arabic when they struggled to find the appropriate words or expressions in English. This tendency to use Arabic may be influenced by the comfort zone it offers, which helps make students feel more at ease and may serve as a scaffold to English. In such cases, the EFL teachers employed a balanced approach by allowing their students to initially express themselves in Arabic, then the teachers translated their students' thoughts into English to promote the language acquisition. In this way, the teachers made the links for their students between the two languages, advancing the learning that students would not have been capable of on their own.

In this context, the choice of games and applications in the classroom was viewed as significant; however, the teachers' ability to create a fully immersive English-speaking environment appeared to be limited (Reinhardt, 2019). The challenge is in addressing the students' inclination to use Arabic and facilitating a gradual shift towards English as the primary language of communication. Thus, selecting digital games that actively encourage English language use and support the teachers' strategies for promoting English as a social practice was identified as essential.

The teachers in this study used games and applications to facilitate development of various language skills in their English classrooms, which in this context is seen as creating a ZPD for their students. Aisha talked about providing her students with multiple resources to help them engage with English learning, catering to diverse preferences. Majd highlighted the effectiveness of visual resources, such as videos and PowerPoint presentations, in capturing students' attention and enhancing their understanding of grammatical rules and storytelling. Fatima mentioned the use of PowerPoint presentations and videos as valuable tools to clarify topics and engage students in class. Similarly, Nouf employed interactive games and hands-on

activities to teach vocabulary and story elements, but the primary focus was on the skills acquisition rather than fostering extensive social interaction.

However, when it came to fostering authentic conversation and social interaction, the examples were limited. Only a few teachers attempted to encourage students to engage in real-life problem-solving discussions. For instance, Aisha introduced a "don't speak Arabic" game to promote English communication among her students. Nevertheless, the focus remained more on language skills development rather than in-depth social interactions and oral language transactions between peers.

The teachers' excerpts suggest that while games and applications were valuable tools for teaching language skills, they may not fully replicate the extensive in-game social interactions reported to be fostered in DGBLL contexts. This observation highlights the importance of selecting the right tools and strategies for specific language learning goals, particularly when aiming to promote English as a social practice in the classroom.

Nouf, who taught at a government school, initially showed some hesitation with using digital tools during the PD sessions, but she gradually adopted Minecraft as part of her vocabulary instruction. She used the game to help students create visual representations of new words, integrating it with her storytelling lessons. Her students, typically in mid-sized classes, responded positively to the in-game interactive elements, and her cautious but steady engagement with Minecraft reflected a pedagogical style grounded in the structure and gradual exploration. This example shows how teachers adapted DGBLL to suit their comfort level in addition to the EFL classroom needs.

5.2.2 Multimodal Strategies in EFL Practice

Teachers' perceptions emphasised the importance of multimodality for language learning. As a theory and field of study, multimodality expands the understanding of meaning-making beyond the traditional sociocultural perspective, which primarily focuses on the role of communication (Kress & van Leeuwen, 2001). Of interest at this stage of the study were beliefs about the relevance of multimodality for supporting social interactions among EFL students (Bacalja et al., 2022) by taking into consideration the various modes that individuals use to communicate and interact with others. This includes nonverbal and embodied aspects of communication, as multimodality offers a more comprehensive perspective on communicating and meaning-making (Kress & van Leeuwen, 2001).

Multimodal engagement emerged as a key factor for motivating students, according to the majority of teachers. Responses identified that teachers believed their students learnt through a range of modes. The EFL teachers in this study commonly perceived the use of gestures as a

valuable tool in the English language learning process within their classrooms. They emphasised the significance of gestures for social interaction, particularly among students who were still developing their spoken English skills. Aisha, for instance, noted that lower achievers tended to rely on gestures to convey their messages when English words fell short.

Majd also highlighted the active role of gestures in vocabulary acquisition, where students act out words to aid comprehension. This agreement among the teachers aligns with the concept of multimodality, which emphasises the importance of using multiple modes of communication, including gestures, to support language learning (Kress & van Leeuwen, 2001). These gestures serve as a means for students to actively participate and engage in the language learning process, as they construct meaning through both verbal and nonverbal forms of expression (Vygotsky, 1976). Thus, the integration of gestures as a form of multimodal engagement contributes to a richer and more interactive EFL classroom environment and promotes language development in alignment with sociocultural theory.

According to the teachers in this study, the use of multimodal resources and digital tools in the classroom scaffolded and facilitated the development of various essential language skills among the students, providing them with a deep understanding of the English language. These skills can be categorised into the following two main areas:

Vocabulary Acquisition. Teachers like Aisha and Majd used visual aids, such as pictures and videos, to enrich the students' vocabulary to help them understand and remember words better. Aisha mentioned: "For example, when I present a story about an animal or a farm, when I present a cow, I don't have to mimic the sound and explain more. When it comes to what is a cup, I can just show a picture or video, and they will relate that this is a cup."

Grammar and Syntax. Majd used multimedia resources to explain grammatical rules that enhanced her students' understanding of sentence structures. She said: "So for the visual, they love visuals, anything visual, especially when I put the PowerPoints in front of them as a video about grammatical rules."

These examples illustrate how the teachers leveraged multimodal resources to foster vocabulary acquisition and enhance understanding of grammar and syntax among their students. While Minecraft Education Edition had not yet been introduced into their classrooms, these findings indicate that for this cohort of teachers integrating DGBLL may well be valued, given the multimodal affordances of such games for language learning.

5.2.3 Emerging Attitudes Towards DGBLL Integration

When considering the integration of DGBLL in their classrooms, a diverse range of perspectives emerged among the teachers. Hessa expressed her concern that some students

might view technology primarily as a form of entertainment rather than a tool for learning, highlighting the need to strike a balance between student engagement and effective instruction. She pointed out the potential challenge of ensuring that students concentrated on the educational aspects of games rather than solely playing for amusement:

> Maybe students will use it as a game and not as something to get knowledge from ... I don't know, maybe I feel that some students will not concentrate on playing for learning. They only concentrate on playing for the purpose of playing. (Hessa)

Sarah, on the other hand, noted that despite increased comfort with technology following the COVID-19 pandemic, resistance to incorporating digital games remained due to limitations in school facilities and teachers' training. She also highlighted that some teachers were hesitant to embrace games in their classes due to perceived difficulties and the level of preparation they believed would be required:

> Maybe the lack of training, sometimes the resistance of teachers ... some teachers really find it difficult to go this deep into digitalising their classes, they prefer the traditional ways, and some teachers feel that integrating games into their classes means a lot of preparation; some teachers think it will be difficult, and they resist. (Sarah)

However, amidst these concerns, teachers like Aisha recognised the potential of digital games not only as assessment tools but also as motivational instruments. Aisha emphasised the value of assigning online games to gauge students' understanding of lessons and assess their progress in various language skills, including grammar, reading, writing, and vocabulary:

> Assigning an online game where they use their devices is a great way to know each student's level and how they progressed. Did they understand the assignment for example? When it comes to grammar, or reading or writing or even vocabulary, did they understand the lesson or not? (Aisha)

Here, Aisha associates digital games with opportunities for assessment. Ultimately, the diverse range of viewpoints reflected the ongoing evolution of technology's role in language education and the need for educators to adapt their strategies to meet the evolving needs of their students. Aisha, who taught in a well-resourced school with access to digital tools, was one of the more digitally confident participants during the professional development sessions. She frequently showed initiative in adapting technology to assess the students' understanding, particularly in grammar and writing. Her classes were generally mid-sized and included upper-primary students who were accustomed to working with devices. Aisha's pedagogical style reflected a structured yet open approach, where games like Minecraft were used strategically to support both formative assessment and motivation.

5.2.4 Summary of RQ1 Findings

In conclusion, while the teachers in the study cohort were not currently integrating DGBLL in their classrooms, they appeared to have appreciated the value of digital tools and the benefits of fostering English language learning through multimodal experiences. As this chapter moves onto the second phase of the interviews, it investigates the significance of multimodality in facilitating a deeper understanding of social interactions among EFL students (Bacalja et al., 2022). The integration of multimodal approaches brings forth new opportunities for meaningful in-game social interactions, aligning more closely with sociocultural theories of language development and highlighting the dynamic nature of English as a social practice in contemporary educational settings.

During the initial phase, teachers harnessed a diverse array of digital tools to create engaging learning experiences and foster a sense of community among students. While these tools held great promise, the focus often leaned towards their educational aspects and engagement value, potentially overshadowing their ability to facilitate in-depth social interaction within the games themselves. However, as the study progressed into its second phase, the integration of DGBLL brought forth new opportunities for meaningful in-game social interactions, aligning more closely with sociocultural theories of language development. This shift highlights the importance of striking a balance between technology integration and authentic social interaction in EFL classrooms, ultimately enhancing students' language learning experiences.

5.3 RQ2: How Does the Use of DGBLL Help Advance Primary Students' English as a Social Practice?

In the realm of modern education, DGBLL has emerged as a powerful catalyst, reshaping the way primary students acquire and engage with the English language. This section presents teacher interview responses after completion of the Minecraft Education Edition professional learning sessions as they embedded the digital tool in their classes. It investigates how using DGBLL helps advance primary students' English as a social practice. Through a comprehensive analysis informed by sociocultural and multimodal theories, this study explores the multifaceted impact of DGBLL on language learning, as perceived by teachers. This section examines the teachers' perspectives and redefines EFL language learning for primary students while embracing innovative, immersive learning experiences.

5.3.1 Advancing Social Interaction Through Minecraft

The findings shed light on how Minecraft, as an educational tool, offers sociocultural affordances that align with sociocultural theories of learning, specifically Vygotsky's ZPD and the concept of scaffolding (Vygotsky, 1978). These findings are supported by direct quotes from the teachers who elaborated on the peer interactions fostered through gaming.

Hala, for instance, mentioned that through group work on Minecraft activities "strong students assist weak students in accomplishing certain tasks". This observation reflects Vygotsky's ZPD, which posits that learners can achieve more with the support of peers or MKOs. In Minecraft, students collaborate, help each other, and collectively work towards accomplishing tasks, illustrating the affordance of peer support.

Additionally, the concept of scaffolding is evident in Minecraft-based language learning according to teacher responses. Mariam explained, "I assign different roles … For example, building a certain community, I would assign students to be the spokesperson of the group and then another one to enter vocabularies." Mariam's practice aligns with the scaffolding theory (Vygotsky, 1978), where teachers provide support and structure to assist learners in achieving their goals. In Minecraft, teachers can scaffold learning experiences by assigning roles, providing guidance, and gradually increasing the complexity of tasks, thus allowing students to interact socially and progress in their language development.

Furthermore, Minecraft's collaborative nature reflects the sociocultural notion that learning is a social activity. Majd noted, "Minecraft is more effective. It makes them elaborate, talk more, have open conversations," while Al Batool (Year 4 teacher) also noted, "They can help each other to understand the signs." This supports the idea that social interaction and dialogue are integral to language development; furthermore, it fosters a supportive atmosphere where students readily assist one another, offering guidance and assistance during gameplay, a key aspect of language learning emphasised in sociocultural theory.

Thus, the teachers' perspectives on Minecraft in relation to sociocultural affordances align with theories of learning, including Vygotsky's ZPD and the concept of scaffolding. In this way, the teachers were cognisant that Minecraft provides a platform for collaborative, peer-supported language learning experiences, which are in harmony with the principles of sociocultural theory.

5.3.1.1 The ZPD

Minecraft, as an educational tool, offers opportunities for advancing student language learning. This support reflects the concept of the ZPD, a pivotal construct introduced by Lev

Vygotsky (1978). ZPD represents the intellectual capabilities of a learner that are yet to mature, but with guidance and support from a more knowledgeable other, such as a peer or teacher, can be achieved. The teachers' experiences show how Minecraft becomes a scaffolding platform by propelling the students through their ZPD.

Mariam shed light on her MKO role within the Minecraft environment. She said, "If anyone didn't know anything, and for example, there's a student that doesn't know how to build the model or something, her classmates help her." Here, Mariam described how the students naturally took on the role of MKOs for their peers. They provided guidance, support, and mentorship to fellow students who were less experienced in playing Minecraft. This peer-assisted learning dynamic aligns with Vygotsky's MKO concept, where more knowledgeable individuals assist others in their ZPD (Vygotsky, 1978).

Similarly, Mariam's experience underlined Minecraft's capacity to identify and address the students' individual ZPDs. She noted: "Minecraft has helped me identify some weaknesses or skills that my students lack. So, I have adapted my lesson plan to target all students' levels." This adaptability is a characteristic of the ZPD concept. By recognising the students' varying levels of readiness, teachers can scaffold learning experiences within the Minecraft platform to cater to each student's ZPD (Vygotsky, 1978).

Moreover, Hala reflected on the limitations of other educational games compared to Minecraft by stating: "They had more limitations because I was the one; my role was more evident in playing those games. I was maybe dominant." In contrast, Minecraft empowered her students to take ownership of their learning, which aligns with Vygotsky's idea that successful scaffolding allows learners to eventually master the tasks independently (Vygotsky, 1978).

In this study, Minecraft emerged as an ideal platform for realising the students' ZPD, embodying by this Vygotsky's philosophy that learning occurs most effectively within the zone where learners can accomplish tasks with guidance, thus fostering both a cognitive development and a sense of achievement (Vygotsky, 1978). Minecraft's unique blend of creativity, collaboration, and adaptability provides a fertile ground for nurturing students as they navigate their individual ZPD.

5.3.1.2 Scaffolding in the ZPD

Building on the concept of ZPD discussed in the previous section, this section focuses specifically on the role of scaffolding as a practical instructional strategy that supports learners within their ZPD during DGBLL activities. The concept of scaffolding, rooted in Vygotsky's sociocultural theory, fits well in the Minecraft-based learning environment. Scaffolding, in the context of education, refers to the support and guidance provided by

teachers or peers to learners as they engage in tasks that lie within their ZPD (Wood et al., 1976). In the case of Minecraft, teachers act as scaffold builders by providing the necessary support structures to help students progress from their current level of understanding to a higher level of competence. This pedagogical approach is clearly exemplified by the teachers' experiences and insights.

Majd shared an example of scaffolding in the Minecraft classroom: "If I put [the task] on the screen, and they would see it and read it, and I would say it out loud to them ... you will see them paying attention and being engaged and following the instruction." In this example outlining a scaffolded approach to task design, Majd combined visual aids, verbal instructions, and step-by-step guidance to ensure that her students had a clear path to follow. This approach aligns with Vygotsky's notion of scaffolding, where the teacher offers structured support to facilitate the students' learning.

Likewise, Hessa had a similar experience in her classroom: "They were able to help each other even if we have difficulty or students have any difficulty in playing .... The others help them so they were able to help each other." In this context, the students took on the role of scaffold builders for their peers. They voluntarily offered assistance, guidance, and explanations when their fellow students encountered challenges or difficulties during the gameplay. This student-led scaffolding shows the collaborative and supportive atmosphere developed within the Minecraft environment.

This example underscores the significance of not only teacher-led scaffolding but also peer scaffolding, aligning with Vygotsky's idea that learning is inherently social and that learners can play an active role in each other's development. In Minecraft, students collectively contribute to one another's ZPD advancement, fostering a community of learners who scaffold their peers to achieve shared educational goals. In her interview, Sarah reinforced the importance of scaffolding in the Minecraft context; she described Minecraft as creating a "comprehensive" English language environment for communication. She emphasised how Minecraft served as an immersive linguistic environment that scaffolded the language development. Within the game, students constantly interacted with their peers, negotiated meaning, and employed the English language to achieve shared goals. This ongoing linguistic interaction, where communication is essential for gameplay, exemplified the concept of scaffolding by providing the students with the linguistic support they needed to progress.

These examples show how Minecraft, as a pedagogical tool, supported the scaffolding process, and by this fostered an environment where teachers and more knowledgeable peers were able to provide the necessary guidance, assistance, and support structures for students to reach their full potential within their ZPDs. This aligns with the core principles of the

sociocultural theory, which emphasise the critical role of social interaction and support in language development.

Sociocultural theory, developed by Vygotsky, emphasises the importance of social interaction, cultural context, and mediated tools in learning (Vygotsky, 1978). Minecraft's sociocultural affordance aligns with this theory, as the game provides a platform for collaborative and social learning experiences. Examples from the teachers' comments highlight how Minecraft encourages social interaction and collaboration among the students.

Mariam mentioned that Minecraft fosters social interaction by stating that "Minecraft is more fun and engaging and the students are working collaboratively…Since children like challenge, especially in technology". This demonstrates how the competitive nature of Minecraft motivates students to interact and collaborate with each other, which aligns with sociocultural theory's emphasis on peer interaction (Vygotsky, 1978). Nouf also emphasised the importance of collaboration in Minecraft:

> There was no collaboration actually in the games that I used to do and to use with my students before. It was no collaboration, or let's say not, not no, but less than the collaboration and the social interaction that I have observed when using Minecraft, it was wider. (Nouf)

Similarly, Hessa said, "It increased collaboration and student engagement in discussions and among English classes," and Sarah noted, "I noticed the great collaboration, great teamwork."

The teachers' excerpts align with sociocultural theory's focus on learning through social engagement and collaboration within a cultural context. These quotes illustrate how Minecraft's sociocultural affordances, such as collaboration and social interaction, align with the sociocultural learning theory as they provide students with opportunities to learn through interactions with peers within a cultural context. Furthermore, Hala noted the significant shift in the students' engagement and collaboration with Minecraft compared to traditional games: "Minecraft was a change and added great value to my teaching this year." She added, "My students were very engaged during their communication; they showed interest and non-stop learning." This transformation reflects the sociocultural affordances of Minecraft by emphasising its role as a sociocultural tool in promoting collaborative and culturally situated learning experiences.

In conclusion, the teachers' perspectives and direct quotes highlight how Minecraft's sociocultural affordances align with the sociocultural learning theory by emphasising the importance of social interaction, collaboration, and cultural context in the learning process. Minecraft serves as a powerful sociocultural tool that enhances language learning experiences by facilitating social engagement and cultural interaction among students.

5.3.2 Supporting Language Learning Through Multimodal Practice

The multimodal social semiotic view of language emphasises the importance of language being expressed not only through words but also through various modes of communication, such as images, sounds, and gestures (Jewitt, 2009). In the digital age, where communication increasingly transcends traditional written and spoken language, Minecraft has emerged as a prime example of a platform that facilitates the integration of these multiple modes for language learning. Although teachers occasionally used broader terms when discussing digital tools, the examples presented in this section specifically relate to their experience with Minecraft Education Edition in the classroom. As previously described, participants implemented activities such as collaborative building projects and storytelling tasks using Minecraft. These affordances, including immersive world-building and task-based collaboration, provided opportunities for authentic English language use within a game-based context.

When reflecting on her students' engagement in the Minecraft virtual platform, Ayah (Year 4 and 5 teacher) reflected on the affordances and stated, "I want them to develop all the skills for grammar, reading, oral vocabulary, writing, all the skills." Ayah implied she believes Minecraft offers a space where students can engage in a range of language modalities for communicating during the collaborative gameplay, supports reading, writing, listening, and speaking as students interact with in-game text and communicate with peers. Additionally, Minecraft supports reading and writing skills as the students interact with the in-game text, follow instructions, and engage in written communication within the virtual world of Minecraft. In this way, the multimodal aspects of Minecraft foster the development of language skills.

Furthermore, Hala mentioned that Minecraft was a refreshing change in her teaching approach as she highlighted the platform's capacity to encourage students to communicate and collaborate effectively. She noted: "It added great value to my teaching this year … We didn't have any chat forums or discussion boards as in Minecraft to encourage the interaction in all the games that I used before." Hala's observation shed light on Minecraft's distinctive features that provide a multifaceted platform for communication and collaboration within a virtual world, which aligns with the principles of the multimodal social semiotic view of language.

Additionally, Mariam discussed how Minecraft supported the development of literacy skills by integrating various modes of communication. She explained: "Minecraft has facilitated the testing process, okay, and the feedback process, both the last two steps in the teaching process that Minecraft made it easier." Mariam's insight shows how Minecraft serves as a tool for assessing students' language skills through a combination of verbal, written, and visual communication. She stated:

> I tell them the meaning of the word and they can guess the word or they can just challenge each other in, in spelling and telling the spelling of a word that's already built in their world, and try to use it in a sentence. (Mariam)

This comprehensive approach Mariam was using with her students for assessment not only evaluated the students' language skills but also provided them with valuable feedback for improvement. Mariam further elaborated on using Minecraft for grammar instruction by saying:

> If I'm teaching prepositions in grammar, I might ask them to try to do the world, okay. For example, I have "on", so they can put an object on another object and write "on"; for example "under" they can just bring an object or creature or whatever, and just put them under a building or something. So, they can just adapt the prepositions. They can tell me the name or show me the meanings of prepositions by building worlds and using the words or the preposition in a correct way. (Mariam)

She also highlighted the convenience of remote learning by stating, "At home, they can simply use Minecraft, and I can monitor them." These insights show how Minecraft offers a dynamic platform for language assessment, skill development, and remote learning, thus enhancing the students' social language proficiency in multiple dimensions. Overall, teachers' perspectives show Minecraft's capacity to engage students across multiple modalities of language, including speech, text, and visual elements, which is in harmony with the principles of the multimodal social semiotic view of language. In the digital age, where communication is increasingly multimodal and driven by visuals, sounds, and gestures, Minecraft's immersive environment reflects the changing landscape of language learning in an interconnected world (Jewitt, 2009).

The teachers' perspectives show that Minecraft's play platform offers EFL students an opportunity to explore and experiment with various semiotic resources, which aligns with the multimodal social semiotics perspective. Within the game, students engage with multiple modes of communication beyond the traditional language context, such as visual symbols, spatial arrangements, and even computer coding (Jewitt, 2009). This multimodal engagement is exemplified by Majd's observation that students "know how to build or break the bricks", reflecting their proficiency in manipulating the game's visual and spatial elements. Furthermore, Minecraft encourages students to engage in semiotic play, where they actively play and create meaning through the use of multimodal resources (Bezemer & Kress, 2008).

Aisha's description of designing Minecraft worlds to support her language teaching objectives exemplifies this perspective. For example, she crafted Minecraft environments that required students to navigate and interact using a range of semiotic resources such as the "marine life", which promoted language development together with visual and spatial literacy.

This alignment between Minecraft plays and multimodal social semiotics shows a shift in language learning from traditional linguistic modes to a broader, more holistic conception of literacy (Jewitt, 2009).

Moreover, the game's support for code-based modifications introduces yet another semiotic dimension. Majd highlighted how students are encouraged to engage with the game coding to customise their gameplay experiences. She noted that her students

> can read inside the game, the instruction and the website and the coding, and actually even when it comes to writing, they can use it when they search for the items I'm going to ask them to use to build; also [if] they are going to code, they need to learn writing, they can't do it without the writing skill, so they can improve it. (Majd)

Furthermore, Hessa's recognition of increased creativity, social interaction, and collaboration in Minecraft corroborated the theory's assertion that Minecraft fosters a dynamic learning environment where students communicate, share ideas, and work together. Hessa said: "In Minecraft, there is more creativity and social interaction and collaboration between students than the other educational games I used before." She added:

> In Minecraft, kids have to be interactive to be creative. And they go to explore the world just like in real life, as if they are in real life and not in a game. It is beyond a game, beyond [the] classroom. (Hessa)

This real-life immersion, as highlighted by Hessa, aligns with the theoretical concept of semiotic domains, where Minecraft serves as a context for students to apply language and multimodal resources as if they were in authentic real-world situations; this also aligns with theories that underscore the role of authentic contexts in language learning (J. Gee, 2003).

In essence, Minecraft serves as an educational platform where students not only acquire language skills but also become proficient in navigating and creating meaning in a multimodal landscape. This experience underscores the game's potential to equip students with the multifaceted literacy skills demanded by the digital age, aligning with the principles of multimodal social semiotics (Jewitt, 2009).

Multimodal learning theory suggests that learners benefit from engaging with information presented in multiple modes, such as text, visuals, audio, and interaction (Kress, 2010). Minecraft offers various modes of communication and engagement, which encourages a multimodal language learning experience. The data analysis of the teachers' perspectives highlighted how Minecraft integrates multiple modes to enhance EFL language learning.

Hessa emphasised the multimodal nature of Minecraft when she stated that her students "go to explore the world just like in real life, as if they are in real life and not in a game. It is beyond a game, beyond [the] classroom." This aligns with multimodal learning theory, as it

emphasises that learning should go beyond traditional text-based methods and incorporate diverse modes for better comprehension. Hessa pointed out how Minecraft encourages students to work together in groups:

> We can say that there is a, there is real communication and teamwork as we can see they all, they are all communicating, they are working as one team, they are helping each other. So, all the students share one world, which is the virtual world, and there they need to share their ideas and work together as a team. (Hessa)

This collaborative aspect of Minecraft integrates multiple modes of communication, such as verbal interaction and visual representation, which enriches language learning.

These quotes show how Minecraft's multimodal affordances align with multimodal learning theory by offering a diverse range of modes for students to engage with, which fosters deeper language learning experiences. Furthermore, Ayah highlighted that Minecraft goes beyond traditional games, stating, "Minecraft is more social. They work together in a group, they feel the multimodality." She added, "They feel it as if it's real life, as if they are doing that in real life." This example shows the immersive nature of Minecraft, which integrates visual, auditory, and interactive modes to create an authentic language learning environment.

Moreover, Minecraft's capacity to bring abstract concepts to life provides a unique advantage. For example, teacher Aisha noted that in a traditional classroom, bringing physical objects like marine life specimens can be challenging. However, Minecraft offers a solution by allowing students to explore such topics in a virtual environment. Aisha noted that Minecraft made it easier to understand concepts like marine life by providing a tangible experience within the game world. This feature is particularly valuable for language learning, as it facilitates experiential learning by making abstract concepts more concrete and understandable.

Al Batool shared an example that involved vocabulary acquisition: "I have the word 'spin', it means a spin or turnaround. So, when you let the character spin, they understand what the word means." This example demonstrates how Minecraft helps in expanding the students' vocabularies by providing concrete experiences that appeal to their senses and help them grasp the word meanings easily.

Moreover, Aisha illustrated how Minecraft supports vocabulary development by describing a scenario where a student struggled to communicate her need for "wood", but eventually the student understood the term through their interaction with the game environment. This experience emphasises how Minecraft can bridge language gaps the students might have and enhance their vocabulary acquisition. Aisha shared another example that shows how Minecraft facilitates vocabulary learning:

> If I just say "cube", they wouldn't know what is a cube, but if they visualise it and then in front of them in a device they see a cube, so they will associate a cube … with what they see. So, it becomes … easier to teach English. (Aisha)

This example shows how providing concrete representations through visualisations of abstract concepts as students build and explore in the virtual word of Minecraft helps them grasp the meaning more effectively. Furthermore, Hala mentioned that students exchanged oral expressions in Minecraft by typing them in the "chat box", which contributed to their spelling skills. This demonstrates how Minecraft's chat functionality encourages students to practise spelling and reinforces their language skills.

In conclusion, the teachers' perspectives show how Minecraft's integration of multiple modes aligns with multimodal learning theory. By offering a rich variety of modes for communication and engagement, Minecraft enhances the language learning experience in EFL contexts by providing a multimodal environment that goes beyond traditional language learning methods.

5.3.3 Transforming Language Teaching Through Digital Game Integration

The alignment between the sociocultural view of language and multimodal social semiotics is evident in how teachers perceive Minecraft as an educational tool for language learning. The sociocultural view of language emphasises the importance of social interaction and cultural context in language acquisition, which is reflected in Minecraft's ability to create an immersive and collaborative language learning environment.

Majd noted: "Minecraft is more effective. And it's making them elaborate and want to talk more. They would open the conversation more and more to take it, to talk to each other in English." Majd said some of the students "use headphones" while others use the "chat box". This highlights the sociocultural aspect of language learning, where students engage in meaningful interactions and discussions within the virtual world of Minecraft.

Moreover, multimodal social semiotics stresses the significance of multiple modes of communication beyond the traditional language skills. Minecraft's multimodal nature, which incorporates text chat, voice communication, and visual elements, aligns with this theory. Aisha noted: "Sometimes we have absent students, so they are engaged even if they are absent." This indicates the unique advantage of Minecraft as a tool for keeping absent students connected to the learning process through its rich multimodal environment where students engage with various semiotic resources. Even when physically absent from class, students can actively participate and engage in the language learning activities. Similarly, students can engage with their friends and sometimes teachers via the Minecraft platform at

home, which provides the students with an additional avenue for language practice and enhances the collaboration and communication among the students.

In this way, Minecraft serves as a powerful tool that aligns with both the sociocultural view of language and multimodal social semiotics. It provides EFL students with a holistic language learning experience that is deeply rooted in social interaction and diverse modes of communication. The findings reveal how Minecraft as a digital game aligns with theories of language learning and offers unique advantages for second language learning. The use of digital games in language learning is supported by the theory that gamification can enhance motivation and engagement (Deterding et al., 2011). Teachers' perspectives on Minecraft demonstrate how this digital game integrates language learning with gameplay, thus fostering both linguistic and motivational benefits.

Aisha noted the engagement factor by saying: "Minecraft is way better than the other games that I'm using. Because in other games, there is no interaction at all". This aligns with the gamification theory which emphasises the importance of interactive and engaging experiences for EFL language learners. Moreover, the teachers' comments align with the theory of situated learning (Lave & Wenger, 1991), which posits that learning is most effective when it occurs in authentic, real-world contexts. In Minecraft, EFL students engage in tasks that mimic real-life scenarios, such as collaborative building and problem-solving. Hala noted: "Minecraft was a change" and she added "It adds great value to my teaching" and she elaborated "we didn't have any [chat forums or discussion board as if as in Minecraft to encourage the interaction] in all the games that I used before" which shows that Minecraft provided a context-rich environment for language learning.

Additionally, the theory of CALL emphasises the use of technology to facilitate language learning (M. Levy & Stockwell, 2006). Minecraft' s integration of digital tools and features aligns with this perspective. Teacher Fatima mentioned "Minecraft doesn't stress the students, gives them time, they can spend two three hours just building their own worlds." This example by teacher Fatima how the game provides learners with opportunities to explore and learn at their own pace.

In conclusion, the teachers' perspectives on Minecraft in second language learning show its alignment with theories of gamification, situated learning, and CALL. The teachers' excerpts evidencing Minecraft's immersive and interactive nature provide valuable insights into its potential as a digital game for foreign language acquisition.The findings reveal how Minecraft, as a digital game, aligns with theories of multimodal literacies and offers unique opportunities for learners to engage with various modes of communication and representation. Multimodal literacy theory emphasises the importance of using multiple modes, such as text,

images, sound, and spatial organisation, for meaning-making and communication (Kress & van Leeuwen, 2001). Teachers' perspectives on Minecraft demonstrate how this game facilitates multimodal literacy development.

Aisha highlighted Minecraft's multimodal nature in this comment: "Minecraft is multimodal, but other games are just one mode, like just interactive that you have to, for example, apply, that you have to take and put in the right place." She compared the Minecraft platform to other games by saying, "Other games are just like normal games, like an interactive worksheet, for example, or, or a puzzle that they have to solve." This aligns with the theory of multimodal literacy, which emphasises the need for learners to engage with diverse modes of representation for effective communication and learning.

Furthermore, the theory of digital literacy (Buckingham, 2013) shows the importance of developing digital skills and competencies. Minecraft's incorporation of digital tools and interfaces aligns with this perspective. Teacher Mariam noted: "We just modify Minecraft to serve our curriculum. If I want to teach grammar, I modify the world to serve me in grammar. If I want to teach vocabulary, I require the world to serve me in vocabulary". This shows how Minecraft allows teachers to adapt the game to their specific language learning goals, which promotes digital literacy.

Additionally, the teachers' comments align with the theory of new literacies (Lankshear & Knobel, 2011), which emphasises the evolving nature of literacy in digital contexts. In Minecraft, students engage in a wide range of literacy practices, from reading and writing in the chat box to interpreting visual cues in the game world. Hala, reflecting on the changing nature of her practices utilising digital tools to foster expanded notions of literacy explained:

> They had more limitations before using Minecraft because my role was more evident in playing those games. I was dominant; I would say, I would just play the game on the screen. Okay, we have a smartboard, I would ask only questions, but there was no actual collaboration or actual engagement. Oh, that's what maybe I would say—that the student engagement was limited. But with Minecraft, it was extended more, and the collaboration was clearer. (Hala)

Thus, according to Hala, Minecraft expands the scope of new literacies in language learning.

5.3.4 Summary of RQ2 Findings

In conclusion, teachers' responses were reported to investigate their perspectives on the use of DGBLL to advance primary students' English as a social practice. Findings indicated that sociocultural and multimodal affordance of the digital platform enhanced student social language learning. In this way, Minecraft offered a rich multimodal environment and

provided a valuable tool for enhancing student engagement with diverse modes of communication and representation.

5.4 RQ3: How Do Teachers Integrate DGBLL into Their EFL Pedagogical Practice?

In this section, teachers' interview responses are analysed through sociocultural and multimodal perspectives to offer a deeper understanding of how they integrate DGBLL into their EFL pedagogical practices and the strategies they employ.

5.4.1 Teachers' Pedagogical Integration of DGBLL

Sociocultural theory, rooted in the work of Vygotsky (1978), emphasises the significance of social interactions, cultural context, and the guidance provided by more knowledgeable individuals, such as teachers, in the process of learning language as a social practice. This theoretical perspective provides a framework to explore how teachers integrated Minecraft as a tool for DGBLL in their environment.

One key aspect of interest is the role of teachers as facilitators of learning within the Minecraft environment. Teachers, like Aisha, often found themselves redirecting students or adjusting tasks to encourage collaboration (Vygotsky, 1978). This is evidenced in Aisha's statement, "I have to go and put them back on track again," as she scaffolded and guided students back towards productive interactions. Aisha was describing a situation where students were sidetracked from the learning task while playing Minecraft. Her intervention to remind them of the task's importance and redirect their focus demonstrates her role as a mediator of their learning experiences. Vygotsky's sociocultural theory suggests that teachers play a crucial role in helping students internalise knowledge by providing support and guidance during interactions (Vygotsky, 1978).

According to the teachers, Minecraft also offered a rich pedagogical tool for supporting student differences to foster language learning. Through observations of student interactions, the needs of individual learners were identified. For example, Hala noted:

> Group-work activities help me in differentiation, where strong students assist weak students in accomplishing certain tasks. Also, differentiation as I said earlier with the different learning styles. So, I have all of this available in one place. (Hala)

In Hala's narrative she highlights the supportive role of Minecraft in differentiation. In the game, students work together to build structures, solve challenges, and achieve shared objectives with opportunities to observe and support diverse student needs. This provides a pedagogical approach to support collaborative problem-solving within the ZPD. In Minecraft, students collectively work within their ZPD, supporting one another as they tackle complex

tasks. This collaborative effort not only enhances language skills but also fosters a sense of community and shared learning.

Sociocultural theory emphasises that language learning occurs through meaningful interactions (Vygotsky, 1978), and the teachers appeared to value Minecraft as a pedagogical tool for fostering student interactions for language learning. Minecraft was seen to encourage students to use language as a tool for communication and achieving common goals.

The pedagogical affordances for development of communication skills were valued by Hala:

> Some of the lesson objectives is to teach certain vocabularies, and these are actually the vocabs that are embedded … in my lesson plan when I design the Minecraft game, so I am teaching certain vocab, what I mean, and sometimes other students would just add, strong students would add vocab from their background, but I have a focus, I have a main focus usually when I teach, when I design my Minecraft lessons. (Hala)

Hala believed that Minecraft fostered communication and the students "learn now with new words, unfamiliar words for them". This highlights the role of Minecraft in expanding the students' vocabulary. In the game, EFL students encounter new words and phrases as they communicate and collaborate with their peers, advancing their skills in using English with each other. These collaborations lead to natural language learning, as the students use language in context to convey ideas, give instructions, and express themselves. This practical learning aligns with Vygotsky's concept of language development as a social activity that occurs within an authentic communication context.

Ayah also used Minecraft to "modify the activity according to the target", adapting Minecraft activities to align with specific language learning targets. Students started with simpler tasks and the tasks gradually increased in complexity as students progressed. Minecraft was also implemented to facilitate collaboration across varying levels of language proficiency. All the teachers expressed that they preferred mixed-ability groups. For example, Mariam stated: "We prefer mixed-ability groups because they help each other in an indirect way." She added, "Strong students assist weak students." The teachers believed that Minecraft provided a pedagogical approach that encouraged this peer support.

In summary, the teachers valued peer learning, meaningful communication, scaffolding, and collaboration across skill levels and used Minecraft-supported language learning. These examples and explanations demonstrate how Minecraft's immersive environment aligns with EFL pedagogical practice.

Multimodal perspectives focus on how different modes of communication, such as verbal and nonverbal, are used in learning. Minecraft's rich environment was valued by the teachers for offering various modes through which students engaged in language learning.

Aisha's approach to modifying the game environment to suit different students' levels demonstrates how Minecraft encourages multimodal learning. Students engaged with the game in various ways, from navigating the virtual world to using chat to communicate with peers. Aisha said, "I try my best to find different ways of teaching one lesson in a different level," highlighting the multimodal nature of Minecraft-supported learning for enhancing comprehension and retention (Kress & van Leeuwen, 2001).

Teachers consistently noted that Minecraft could be used as a tool to foster greater social interaction and collaboration among the EFL students compared to other educational games. Minecraft's virtual world, chat functionality, and group activities created an immersive environment where students could engage with their peers. In this way, integrating Minecraft supported the social aspect of learning (Vygotsky, 1978). The multimodal aspects of the game were highly valued due to the various sensory modalities and modes of interaction to enhance learning (Jewitt, 2012). In this way, Minecraft harnessed the power of multiple sensory and interactional channels to facilitate vocabulary acquisition and overall language development.

5.4.1.1 Visual Mode for Language Learning

Vocabulary acquisition through Minecraft is supported through multimodal learning principles as the game provides students with a rich, immersive context for acquiring vocabulary organically (O'Halloran, 2011). In this game-based approach, the teacher facilitates opportunities for the EFL students to encounter and understand vocabulary terms within the specific context of the game, fostering a deeper and more meaningful comprehension. This was exemplified by Al Batool's approach to teaching new words in Minecraft.

In her classroom, Al Batool introduced words like "spin", which means "turn around". To facilitate a deeper understanding, the teacher allowed the in-game character to spin, which provided a vivid visual demonstration of the term's meaning within the virtual world. Furthermore, another word, "encircle", was introduced with an instruction to "form a circular surround". These explanations within the Minecraft environment offered the EFL students a tangible and contextual understanding of these vocabulary words. They saw the words in action, which was a multimodal approach that engaged their sensory perception and connected the words to real-world experiences. This immersive context within the Minecraft virtual environment enhances vocabulary comprehension and retention and aligns with the principles of multimodal learning (O'Halloran, 2011).

Minecraft was also embedded in lessons to support students to explore and grasp vocabulary through visuals (Jewitt, 2012). Aisha's approach to introducing the "marine life" in the Minecraft virtual environment demonstrates this concept:

> I want to teach them about marine life, [but] it's hard to bring a fish and a whatever that lives in the sea … to the class. It's hard, but in a virtual reality like Minecraft, it's easier just to go to the sea and understand what a marine life is, and the kind of fish that live in the sea. (Aisha)

Within the game, students constructed and explored underwater environments. By encountering and observing marine creatures in their virtual habitat, students directly connected the vocabulary terms to concrete visual representations. This hands-on visual experience significantly enhanced their understanding of these concepts. In line with the multimodal perspective, Minecraft's visual vocabulary learning promotes a holistic approach to language development, wherein sensory engagement and visual cues play pivotal roles (Jewitt, 2012).

5.4.1.2 Auditory Mode for Language Learning

The auditory dimension of learning in Minecraft complements the multimodal perspective by introducing an additional layer to the learning experience (Kress & van Leeuwen, 2001). In the game, students have the opportunity to interact with the vocabulary words, and a noteworthy feature is the ability to hear the pronunciation of words upon interaction. This auditory feedback not only enhances vocabulary learning but also aids in improving the EFL students' pronunciation. Mariam's description of students clicking on words in Minecraft to hear their pronunciation illustrates how the auditory channel increases their vocabulary development. In the multimodal learning context, auditory cues introduce a supplementary dimension to language comprehension, which enriches the overall learning experience (Kress & van Leeuwen, 2001).

As Mariam pointed out, "When they click on the word, they can hear its pronunciation." This auditory feature holds significant value as it provides students with the opportunity to both see and hear words, which helps to reinforce their understanding and pronunciation. By incorporating this auditory element into the vocabulary learning process, teachers harness the principles of multimodal learning, which advocate for a comprehensive sensory engagement to facilitate deeper comprehension and retention of language (Kress, 2010).

5.4.1.3 Movement in Language Learning

Minecraft's integration into EFL pedagogical practices extends to grammar and language development, enhanced through multimodal learning experiences (Kress, 2010). In

particular, the game's immersive environment offers the students opportunities to practise and understand grammatical concepts, such as adverbs, in a multimodal context. These learning moments often occurred during Minecraft-based tasks where students collaborated to build structures and solve challenges using English vocabulary. Al Batool's experience in teaching adverbs within Minecraft exemplifies this integration:

> Adverbs describe how or when or where the action happened, okay. So, when I let the character, for example, move in a specific way, and I ask them [to] describe how the character moved. So here they understand that the adverb will describe the movement of this character. So, it describes the verb, so they start to write sentences or to say sentences describing what the characters do [and this] can help them to improve themselves and writing and reading skills. (Al Batool)

In a grammar lesson focused on adverbs, students actively engaged with the concept while navigating the game. They described how characters moved, connecting adverbs to the verb's action. This hands-on, multimodal approach encouraged the students to write and speak sentences describing character actions. By associating adverbs with character movement, students not only enhance their grammar skills but also improve their reading and writing abilities. In the multimodal perspective, this approach underscores the importance of sensory engagement, interaction, and contextual understanding in language development (Jewitt, 2012).

5.4.2 Minecraft's Virtual Environments for Language Learning

Collaborative learning experiences within Minecraft are based on multimodal learning principles (Lotherington & Jenson, 2011) whereby students collectively construct knowledge by working in virtual worlds together on projects. A remarkable instance of collaborative language learning emerged from a reading lesson involving the story of a tailor and a giant. Ayah retold her experience:

> A reading lesson, we took a reading lesson, okay. It was about a tailor and a giant. Each student took a task here. They needed to build, to build the tailor's house, they needed to make the giant, they needed to talk about the tricks that happened between these characters. So, for example, one student made the tailor's tricks, the other made the giant's tricks, and they told you, they set the scene, … they even set the place, the mountain, they used the vocabulary words that are in the lesson, they used [them] in signs, okay. They wrote words on the signs and they used sentences by using the new vocabulary words. So, they were not only memorising the vocabulary words, they were also using the language or using the words they were learning. (Ayah)

Here, each student had a specific role and responsibility that contributed to a shared objective within the Minecraft virtual environment. Some students focused on building the tailor's house, other students focused on creating the giant character, and yet more on narrating the tricks played between these characters. This collaborative effort extended to setting the scene, which included crafting the mountain backdrop. Significantly, students actively used vocabulary words from their lessons by incorporating them into signs placed within the game to involve both reading and writing. These signs not only featured the vocabulary words, but the students also formed sentences by using the newly acquired language through application of the new language learning in context. Consequently, this collaborative language learning exercise extended beyond a simple rote memorisation and promoted active application and use of the language skills. In accordance with multimodal learning principles, Minecraft leveraged social interaction as an effective catalyst for language development, where students collaboratively constructed and used their vocabulary knowledge (Lotherington & Jenson, 2011).

Aisha also shared a teaching experience that exemplified the benefits of multimodal aspects for language learning. She recalled how one of her students was struggling to communicate the word "wood". According to Aisha, she struggled to say the word:

> So, she started to form a tree with her hand, but her peers couldn't understand that, so she struggled. But then eventually, I told her to click on that, on the link on the game so she would understand what to say. So, once she clicked on the corresponding link, she could understand its word. So, she started to gain more vocabulary using this method since then. (Aisha)

Aisha noticed that her student initially used a gestural mode by attempting to form the shape of a tree with her hands to convey the idea of "wood". However, her peers were not able to understand her, which led to frustration and communication breakdown. This aspect of the situation exemplifies the importance of multimodality in language learning, where learners employ various modes of communication, including gestures and visual cues, to convey meaning (Norris & Jones, 2005).

Through recognising the need for multimodal support, Aisha intervened by directing the student's attention to a specific element in the game, which was associated with the word "wood". By clicking on the word, the student not only heard the word pronounced but also saw a visual representation of "wood". This multimodal experience, combining auditory and visual modalities, provided the student with a more comprehensive understanding of the term.

As a result of this intervention, the student's vocabulary acquisition improved. Aisha's use of the game as a multimodal tool allowed the student to connect the spoken word with the

visual representation, which helped to enhance her language learning process (Kress & van Leeuwen, 2006). The integration of multiple modes, including gesture, audio, and visual elements within the Minecraft environment, contributed to a richer and more effective language learning experience.

5.4.3 Multimodal Language Learning Strategies in the Classroom

A multimodal perspective in language education recognises the critical role of integrating diverse modes of communication to enhance the learning process (J. Gee, 2003; Kress & van Leeuwen, 2020). This perspective emphasises the value of embracing various means of expression and comprehension in the educational context. In this discussion, two examples, from Hessa and Sarah, demonstrate how students combined multiple modalities in their language learning journey (J. Gee, 2003). The first example is from teacher Hessa:

> They were able to chat with their friends using the vocabulary words or the spelling words that we usually use in the reading lessons. And sometimes they tried building blocks by writing the words they write; they build a block. And this block is the word they learned in the spelling. And they use the English language sometimes and the everyday language at other times; they were learning and playing at the same time. (Hessa)

The second example is from teacher Sarah:

> They were using reading and writing to chat with each other, asking each other's help while playing to finish the tasks, and at the same time they were, sometimes they got excited and started calling each other. So, they used oral language. And it was really spontaneous, spontaneous without any efforts. (Sarah)

In Hessa's classroom, students engaged in a multifaceted approach to language learning. They not only used vocabulary and spelling words from reading lessons in written chat conversations but also employed a physical and visual element by building blocks corresponding to the words they were learning. This practice embodies a multimodal perspective (Kress & van Leeuwen, 2020) as it combines the written language with physical and visual modalities, which provides the students with a richer and more embodied learning experience.

Sarah's students also embraced a multimodal approach to language learning. They used reading and writing skills to communicate with each other during gameplay, thus reinforcing the importance of digital literacy. Additionally, they spontaneously incorporated oral language when their excitement rose, which showed their ability to transition between different modes of communication (Jewitt, 2009).

The integration of reading, writing, and oral language in this context exemplifies the interconnectedness of language modes in the learning process. Furthermore, it demonstrates how students naturally draw upon various modalities to achieve their communicative goals (Kress & van Leeuwen, 2020).

5.4.4 Extending Language Learning Beyond the Classroom (Home–School Connection)

As part of their efforts to integrate DGBLL into their EFL pedagogical practices, participating teachers actively encouraged a home–school connection by extending the Minecraft-based activities beyond the classroom to reinforce language learning at home. Several teachers shared their perspectives on how students engage with Minecraft at home. Al Batool shared a positive experience where the students played Minecraft at home and actively engaged with the game. They not only played for fun but also completed two homework assignments. While the students found it enjoyable and entertaining, Al Batool emphasised the value of their achievements from an educational perspective (J. Gee, 2003):

> The students play Minecraft at home, and they show me what they build, what they do, they show me every day. For them it's for fun; for me, I gave them two homeworks and they did it. But for them it's fun, but for me, no, I need achievements. (Al Batool)

Majd's observation of students approaching her outside of their class time demonstrates the immersive nature of Minecraft as a multimodal learning tool. Students become so immersed in the game that they seek opportunities for language practice beyond scheduled lessons, which emphasises the integration of multimodal learning into their daily lives (J. Gee, 2003). Majd said, "They get inside the school in the morning, early morning, they will come to me and say, 'Teacher, I want to see you,' and it's not their class time."

Homework assignments in Minecraft offer an example of how the game contributes to multimodal vocabulary reinforcement (Kress, 2010). Minecraft's adaptability allows for continuous vocabulary practice and flexibility, even when students are absent from class, as Aisha noted: "Sometimes we have absent students, so they are engaged even if they are absent." Teachers like Hessa, Sarah, Hala, and Al Batool assigned tasks and homework in Minecraft, which extended the learning environment beyond the traditional classroom setting (Jewitt, 2009). This approach aligns with the principles of multimodal learning, which emphasise the importance of continuity in the learning process and acknowledge that learning does not stop when students leave the classroom (J. Gee, 2003).

5.4.5 Summary of RQ3 Findings

Overall, the integration of Minecraft and DGBLL into the teachers' EFL pedagogical practices aligns with a multimodal perspective by harnessing various sensory modalities and interactional modes to create a comprehensive and immersive language learning experience (Kress & van Leeuwen, 2020). It caters to the diverse needs and learning styles of EFL students, thus emphasising the importance of sensory engagement, interaction, and continuity in the language learning process.

5.5 Minecraft in Education: Insights Through Theoretical Lenses

In exploring the teachers' perspectives on the difference between Minecraft and other educational games in their classrooms, this study investigates the intersection of sociocultural and multimodal theories of learning. These theories emphasise the crucial role of social interaction, collaboration, and integration of diverse sensory modalities in the educational process. The EFL teachers' perspectives shed light on how Minecraft's unique qualities align with these theoretical frameworks by offering an immersive and socially situated learning experience.

5.5.1 Sociocultural Perspective

Aisha highlighted the significant difference between Minecraft and other educational games she used when she emphasised the lack of interaction in the latter:

> Minecraft is way better than the other games that I'm using. Because in other games, there is no interaction at all. … Other games are just like normal games, like an interactive worksheet, for example, or, or a puzzle that they have to solve. (Aisha)

Similarly, Hala said, "This was also an added value, that the social interaction is more, is stronger in Minecraft."

According to Aisha, the Minecraft virtual world promoted social interaction and collaboration among the students, which aligns with the sociocultural theories that emphasise the importance of social learning (Vygotsky, 1978). In the Minecraft virtual classroom, Aisha's students engaged in discussions, shared ideas, and worked together to achieve goals, fostering by this a sense of community and shared learning experiences (Lave & Wenger, 1991).

Majd noted that Minecraft encouraged her students to be more elaborate, talkative, and confident in using English:

> It's more effective. And it's making them elaborate and want to talk more. They would open the conversation more and more to take it, to talk to each other in English. But other games, it's like one or two words, that's it. But Minecraft, it's, it

> gives them the chance to be creative, ask questions, be interested. They want to learn more. … I can see that they are confident, more confident, when they talk to each other, I can see their improvements in English proficiency. (Majd)

Thus, unlike some other games that elicit only one- or two-word responses, Minecraft's immersive environment prompts students to communicate, ask questions, and express their creativity. This increased confidence and communication aligns with sociocultural theories of language development (Vygotsky, 1978).

Fatima compared the educational games she had used in her EFL classroom, where students work individually, with Minecraft's ability to facilitate student-centred learning through social interaction (Lave & Wenger, 1991). She emphasised the importance of students sharing ideas and thoughts, thus, showing the sociocultural principle that learning is situated within a social context and that students benefit from the interaction with their peers. She criticised the educational games she had used in the EFL classroom: "They [students] were not interacting together, like sharing ideas and thoughts. And that was the main, like, issue for me that I don't want to have it. It's not like a test paper to have it individually."

Nouf observed that Minecraft promoted collaboration and social interaction more effectively than the games she had used previously: "There was no collaboration, actually, in the games that I used to do, to use with my students before." What she noticed about her students when they started using the Minecraft virtual environment was that "the collaboration and the social interaction when using Minecraft, … it was wider."

Minecraft's emphasis on collaboration aligns with sociocultural theories that underscore the value of cooperative learning (Lave & Wenger, 1991). Students work together in the game, sharing knowledge and ideas.

5.5.2 Multimodal Perspective

Aisha noted that "Minecraft is multimodal", offering various sensory modalities and interactional modes. In contrast, some other games are unimodal, focusing on single interactions or activities (Kress & van Leeuwen, 2020). This aligns with the multimodal perspective, which recognises the importance of diverse modes of communication and sensory engagement.

Al Batool highlighted Minecraft's ability to encourage creativity and imagination, which was distinct from other games she had previously used: "I feel that Minecraft builds more skills, creativity, imagination, more than other games." Minecraft's open-ended nature allows students to engage with multiple modes, including visual, auditory, and textual elements, which fosters a more comprehensive multimodal experience (Jewitt, 2009).

Ayah compared Minecraft with quiz-based games where the students "are just playing or answering normal questions and they are earning points. This [Minecraft] is what they like." She emphasised that the Minecraft platform creates a more real-life, immersive environment for students where they "feel it as if it's real life, as if they are doing that in real life". She noted that students perceive Minecraft as having more "soul" due to its capacity to engage multiple senses and modes of interaction (Kress & van Leeuwen, 2020).

Sarah noted that Minecraft was the most comprehensive tool for social interaction and English communication compared to other games:

> I didn't see a tool as comprehensive as Minecraft. We, many games, like we use Kahoot! like we use the quizzes, they offer competition, they allow students to give [a] one-word answer. But they don't give this, a social situation, they don't help in, in creating this social environment that allow[s] this full English environment [for] communication, until now. I start to be a fan of it. (Sarah)

This suggests that Minecraft's multimodal design and extended engagement create a unique learning environment (Kress, 2010).

In conclusion, Minecraft stands out from other educational games due to its capacity to foster enhanced social interaction, collaboration, and multimodal engagement. The game aligns with sociocultural principles by emphasising social learning while providing a rich multimodal environment for language development. However, it is important to note that these findings are based on the teachers' reported perceptions and experiences, rather than direct measurements of the students' learning outcomes. Thus, interpretations of Minecraft's educational impact should be understood within the qualitative scope of this study.

While Chapter 5 has presented key findings that highlight the pedagogical affordances of DGBLL and its potential to foster social language learning in EFL classrooms, it is important to acknowledge that the implementation process was not without challenges. Although challenges were not the primary focus of this chapter, some limitations were noted by the teachers, including difficulties in maintaining an immersive English-speaking environment, managing time constraints, and addressing varying levels of students' engagement and digital literacy. While these teacher-reported concerns are briefly acknowledged here, they are discussed more fully in Chapter 6.

5.6 Conclusion

The findings from this study shed light on the significant impact of Minecraft on EFL pedagogical practices from both sociocultural and multimodal perspectives. Minecraft's ability to foster social interaction, collaboration, and diverse modes of communication aligns

with the key principles of sociocultural and multimodal learning theories. The game has been shown to create an immersive and comprehensive language learning environment that caters to the diverse needs and learning styles of EFL students.

The next chapter will delve into a more detailed discussion of these findings, providing a deeper analysis of the implications and insights derived from the teachers' perspectives about using Minecraft for supporting social learning environments for teaching primary school children EFL.

Chapter 6: Discussion and Conclusion

6.1 Introduction

Chapter 5 presented the findings related to the perspectives of EFL teachers about the potential of the online multiplayer game Minecraft Education Edition to enhance English language social interactions among their students. The findings indicated that using these games facilitated multimodal language support, fostering social interactions that are integral to developing English language skills, and developed and maintained friendships with enhanced opportunities for connections between home and school. Engaging in the game also improved collaboration, motivation, and multimodal literacy. The data consistently revealed that the multimodal nature of Minecraft Education Edition provided the students with diverse social interaction opportunities, which were evident across interviews with teachers that directly related to the research questions.

Chapter 6 discusses the findings on the perspectives of primary teachers regarding the potential role of DGBLL in supporting social learning environments for teaching EFL to primary school children. It examines how online multiplayer games advance English as a social practice among primary students and how teachers integrate DGBLL into their pedagogical practices. The aim of the study was to consider the teachers' perspectives to explore the potential of DGBLL to enhance social English language learning among primary students. Minecraft Education Edition was examined as a prominent example of multimodal learning, and this provided insights into how such tools are perceived and used by EFL teachers to facilitate social interaction and language in a social learning context. This chapter also extends the discussion to the implications, limitations, and recommendations of the study.

In this chapter, discussions draw on the notion that language meaning-making is constructed through various semiotic resources and communication forms, which are collectively understood within a multimodal framework (Jewitt, 2017; Kress, 2012; New London Group, 1996). This approach to understanding language is crucial for the investigation of teachers' perspectives, particularly those of primary teachers, within the contexts of enhancing EFL education and addressing the primary students' needs. The findings presented in the previous chapter highlighted the social interaction opportunities for students facilitated by Minecraft, revealing how its multimodal features consistently supported primary students to engage with meaningful EFL learning experiences, an application of the multiliteracies framework originally discussed by the New London Group (1996). This engagement is discussed further in this chapter through the perspectives of

teachers who have navigated these multimodal environments and incorporated DGBLL into their pedagogical practices to enhance English language learning in a way that aligns with contemporary goals of effective EFL education (Alyaz & Genc, 2016; Nieland et al., 2021).

6.2 Theoretical Perspective to Inform the Discussion

The discussion of findings presented in this chapter is informed by two complementary theoretical perspectives: Vygotsky's sociocultural theory and Kress's multimodal theory. Vygotsky's framework suggests that learning is an inherently social and cultural process, where knowledge is co-constructed through interactions within specific cultural contexts (Vygotsky, 1978). This perspective is particularly relevant to DGBLL, as it emphasises the role of social interactions in learning, a feature prominently supported by multiplayer platforms like Minecraft (Lantolf & Thorne, 2006). The collaborative nature of such platforms facilitates the kind of mediated learning that Vygotsky (1978) identifies as crucial for cognitive development. Kress's multimodal theory broadens the scope of communication and representation by highlighting the use of multiple modes—verbal, visual, auditory, and gestural—for learners to engage with and make sense of their environments (Kress, 2010). This theoretical approach offers a rich lens for analysis of teachers' perspectives of Minecraft as an educational tool that provides a dynamic and interactive setting where learners interact with the content through diverse semiotic resources, thereby enhancing comprehension and expression (Bezemer & Kress, 2008).

Drawing on these theories, the study examines how Minecraft supports EFL learners' language development through sociocultural interaction and fosters multimodal literacy. This approach supports students to navigate and create with a rich tapestry of signs and symbols. The integration of sociocultural and multimodal theories provides a strong framework to examine Minecraft's impact in EFL education, illustrated by interview data from teachers in this study. These insights are important to understand the strategic use of digital games in enhancing language learning and literacy in a multicultural and multimodal context and the implications for future pedagogical approaches (J. Gee, 2003; Jewitt, 2009). Moreover, the application of a sociocultural and multimodal perspective enables EFL teachers to critically reflect on their pedagogical practices. It opens avenues for engaging students in meaningful, authentic, and interactive language learning experiences. This approach advocates for a re-evaluation of traditional teaching methods that focus on didactic translation of knowledge, by fostering a more dynamic and inclusive educational environment that resonates with contemporary pedagogical imperatives (McIver et al., 2016). Additionally, it aligns with the

growing body of research that supports the efficacy of digital games in language learning and literacy (E. Gee & Gao, 2022; Hanghøj et al., 2022)

6.3 Understanding Current Pedagogy for Supporting Social Learning Environments for Teaching English

The first research question aimed to understand the current pedagogical approaches used by the primary EFL teachers and their receptiveness to introducing digital games in their classrooms that require social interaction among students. The initial interviews, conducted prior to the Minecraft professional development and before integrating Minecraft into the EFL classrooms, provided valuable insights into the teachers' existing approaches to pedagogical practices and their receptiveness to DGBLL.

Participants described their current pedagogical approaches prior to the Minecraft professional development, which were predominantly traditional, and emphasised teacher-centred instruction, textbook-based learning, and limited opportunities for students to speak and use oral language in English in the EFL classroom. This conventional method is consistent with established English teaching practices in numerous EFL contexts (Borg, 2006). During their interviews, EFL teachers emphasised the importance of vocabulary and grammar instruction; however, they acknowledged that opportunities for social interaction in English were scarce. Such conventional approaches described are reflective of the grammar-translation method, which prioritises rote memorisation of rules over communicative language usage (J. Richards & Rodgers, 2014). Despite its widespread use, this method in ELF contexts has faced criticism for its lack of engagement and failure to promote meaningful social interaction or motivation among learners (Larsen-Freeman & Anderson, 2019), but is currently mainstream in the Saudi Arabian educational context (Alrabai, 2018; Al-Shehri, 2020)

In terms of receptivity towards DGBLL, the teachers expressed varying degrees of interest and optimism. Some teachers recognised DGBLL, particularly Minecraft Education Edition, as a potential avenue for enhancing student engagement and creating opportunities for social interaction in English. This view aligns with Vygotsky's (1978) sociocultural theory, which posits that learning is amplified through social interaction. These teachers' responses indicated they believed that DGBLL could facilitate the development of social English language skills within authentic contexts. Their perspectives echoed research suggesting that DGBLL can immerse language learners in interactive environments that mimic real-life scenarios, thereby facilitating language learning and development (Peterson, 2019). Additionally, they appeared to recognise that DGBLL encourages collaboration and

communication among learners, allowing them to negotiate meaning, exchange feedback, and collectively construct knowledge within the gaming context (Reinders & Wattana, 2014).

On the other hand, some teachers expressed reluctance about integrating Minecraft in their classrooms, with reservations about their technological proficiency, potential classroom management challenges, and scepticism regarding the educational value of digital games (Pozo et al., 2021; Zheng et al., 2018). Nonetheless, these teachers were interested in participating in the study, were aware that recent studies have demonstrated the efficacy of digital games in motivating EFL students and improving language learning outcomes, and were keen to see the outcomes of the study (Q. Wu et al., 2020; Z. Xu et al., 2020). This apprehension about integrating game-based learning into English instruction is not limited to contexts where English is taught as a second or foreign language, as even in English-speaking contexts teachers feel they do not have the knowledge required to incorporate digital games into their classrooms (Gutierrez et al., 2023; Nash & Brady, 2022). This common sentiment is despite the growing number of professional learning tools to assist teachers (Hayak & Avidov-Ungar, 2020; Kaimara et al., 2021).

6.4 Teacher Experiences Using DGBLL to Develop Supportive Social Learning Environments

The second research question focused on the EFL teachers' experiences as they implemented Minecraft Education Edition in their classrooms. Interviews with teachers after their Minecraft professional learning and as they facilitated DGBLL in their classes provided insights into their progress with this game-based pedagogy and their observations of students as they engaged in the activities. These insights were particularly illustrative in terms of shifts in their pedagogical approach, enhancing pedagogical application, identifying the advantages of DGBLL, and potential for home–school connections.

6.4.1 Shift Towards Child-Centred Pedagogy

While the integration of DGBLL showed promising signs of encouraging more student-centred practices among the participating teachers, it is also recognised that digital tools such as Minecraft may be incorporated in both traditional and innovative ways, depending on instructional design and teacher implementation (Reinhardt, 2019). The integration of DGBLL into EFL teaching practices signalled a transformative shift towards a more student-centred and communicative approach for the teachers in the study. Teachers reported creating rich opportunities for students to employ English in communicative and collaborative tasks using the Minecraft platform, which reflects contemporary language teaching theories that

emphasise the value of interactive, context-rich learning experiences (J. Gee & Hayes, 2011). For instance, teachers described how students negotiated roles and responsibilities in English activities while collaborating on building projects in Minecraft, thereby practising language skills in a meaningful context.

Reflecting Vygotsky's sociocultural theory, teachers observed that DGBLL facilitated language learning through peer interactions within the learners' ZPD. This was evident when students engaged in problem-solving tasks, with more proficient English speakers—MKOs—scaffolding their peers' learning, thus enhancing cognitive development and language learning (Vygotsky, 1978). Teachers described cases where high-achieving students guided their peers in completing specific tasks in the virtual world of Minecraft using English language as a medium to give instructions and feedback, thereby fostering a collaborative learning environment.

Findings in this study also revealed that teachers witnessed a notable increase in the students' motivation, engagement, and confidence as they interacted with peers in Minecraft. This underscores the game's effectiveness in providing immersive contexts for language practice, as students were more prone to communicate in English when immersed in the game's tasks (Peterson, 2019). Additionally, teachers appreciated the shift in their role to becoming more facilitative and supportive, which was crucial in guiding and monitoring the learning process effectively (Huang, 2023). For example, during English classes teachers facilitated group discussion in Minecraft, thus prompting students to use oral language in English to strategise and reflect on their gameplay experiences.

While the findings in this study suggest an encouraging move towards a more interactive, student-centred pedagogy, it is important to note that this shift was not absolute. The introduction of Minecraft may have supported elements of child-centred learning by promoting learner autonomy, collaboration, and peer interaction. However, it did not entirely replace traditional instructional methods. In some cases, Minecraft was integrated within existing teacher-led structures, thus, suggesting a blending rather than a replacement of pedagogical practices. This observation aligns with research that cautions against assuming technology alone can transform pedagogy, particularly in contexts where professional development is limited in duration or scope (Ertmer & Ottenbreit-Leftwich, 2010).

6.4.2 Enhancing the Pedagogical Approach

The study provided insights into the profound impact of multimodal engagement in Minecraft on pedagogical strategies applied in the classroom. The Minecraft virtual environment fostered a blend of visual, auditory, and kinaesthetic learning modalities, enhancing the pedagogical approach in several ways.

In terms of visual learning, teachers used visual cues within Minecraft to help students understand and remember words better. For example, representing marine life helped students to understand abstract concepts visually. This method aided in vocabulary acquisition and supported comprehension, thus resonating with Kress's (2010) assertion that visual elements can significantly enhance literacy. Similarly, the power of gestural communication was evident as teachers identified that lower language achievers, who often relied on gestures to convey messages because their English was limited, did benefit from Minecraft's interactive environment. Majd noted that lower achievers engaged more effectively when they could see and interact with the concepts visually:

> Even today when I was, like, trying to communicate with the lower achiever, it was easy for them because they can see the things in front of them, what I'm talking about [it], so to have it orally and visually in front of them, it lets them engage more, [be] engaged in the class and interactive. (Majd)

This visual and interactive engagement allowed the students to understand and use English vocabulary more naturally, which helped improve their overall language skills. As a result, the students became more confident in their ability to communicate in English, thereby reducing their reliance on gestures and enhancing their verbal interactions.

Norris and Jones (2005) highlight the importance of gestures as a means of communication, which was evident in this study as students used gestures within the game to enhance nonverbal communication when verbal language was insufficient. As students' English proficiency increased, their reliance on gestures decreased, indicating improved verbal communication skills (Norris & Jones, 2005). For instance, Aisha noticed that her students initially relied heavily on gestures to communicate. This was primarily because they were prohibited from using Arabic in the classroom and their proficiency in English was limited. To overcome this language barrier, they extensively used gestures to convey their messages.

However, the introduction of Minecraft brought a significant change in the English classrooms. The students started using English words more frequently and naturally, especially during material exchanges, thereby reducing their reliance on gestures. This transition suggests that the interactive and engaging nature of the game enhanced the students' English proficiency, leading to a decrease in their reliance on nonverbal communication. Aisha further noted that without Minecraft, the students' use of English seemed forced as they struggled to find the appropriate vocabulary. In contrast, their speech became more natural and fluent when they used Minecraft, which indicates an improvement in their overall language skills. These observations align with Norris and Jones's (2005) findings that as verbal communication skills improve, the need for gestures diminishes. The transition from

relying on body language to using English words more confidently demonstrates the significant impact of Minecraft's interactive environment on enhancing students' verbal and social communication skills.

Opportunities for auditory learning were also improved, according to the teachers. The auditory component of Minecraft facilitated pronunciation and listening skills, which was crucial for language development during the activities. Mayer (2001) emphasises the importance of auditory learning, and Minecraft's environment allows students to hear correct pronunciations within the game, aiding in the learning of new vocabulary and enhancing pronunciation (Mayer, 2001). For instance, Mariam shared her observations on how her students gained from the auditory features in Minecraft. She noticed that the students could hear the pronunciation of a word when they clicked on it, which significantly enriched their vocabulary and enhanced their pronunciation skills. In a similar vein, Hessa underscored the enhancement in the students' listening abilities. She pointed out that the students were not only able to pronounce words accurately, but also to use them in full sentences during conversations with their peers. This interactive practice fostered the development of their social language skills in a dynamic learning environment. Textual interactions were also evident as students engaged with written instructions and communicated via chat within Minecraft, improving their reading and writing skills in English. The integration of technology to support literacy, and the textual interactions within Minecraft, encouraged reading and writing through interaction with in-game texts and communication with other players (Warschauer, 2011).

Another element of interest, the gaming space, provided opportunities to foster spatial awareness. Teachers used Minecraft to teach prepositions by having students place objects in specific spatial relations like "on" and "under" the table through direct interaction with the game environment. This supported understanding of prepositions and spatial vocabulary, illustrating what others have observed about the role of spatial awareness in cognitive development (Ishikawa, 2021; Ishikawa & Newcombe, 2021; Piaget, 1954).

Pedagogical approaches were also enhanced by using Minecraft through the cultural relevance of content in Minecraft that was woven into the fabric of the learning experiences. By engaging with the English language in a context that was meaningful to them, students were able to connect new vocabulary and concepts to their own lived experiences. This approach highlights the sociocultural theory's emphasis on the role of culture in education, suggesting that learning is most effective when it is relevant to the learners' cultural background (Lantolf & Thorne, 2006).

The integration of a game-based approach also supported assessment of students' language use. Assessment strategies evolved alongside the integration of DGBLL for the teachers in the study. Teachers investigated new protocols for assessing language development through observation of the students' natural interactions in the game, thus providing a more holistic or child-centred view of their language abilities. This approach is supported by the dynamic assessment theory, which advocates for the integration of assessment and instruction (Lantolf & Poehner, 2013). While assessment was not the focus of this study, findings suggest further investigation into this line of inquiry.

6.4.3 Identifying the Advantages of DGBLL

The findings of the study made visible the transformative role of Minecraft in EFL classrooms, specifically in enhancing the students' attitudes and confidence in using the English language for social interaction. This improvement was particularly evident in their increased willingness to communicate in the target language, English. These findings are an example of the motivational benefits of digital games in language learning as highlighted in previous studies (Cornillie et al. 2012; Reinders & Wattana, 2014; Sykes, 2018). While gaming shares similarities with other multimodal and digital texts, video games are distinct due to the centrality of play, the interactive nature of the text, and the role of the player in their learning (Kim & Johnson, 2021; Nash & Brady, 2022). In this study, the immersive qualities of Minecraft were also found to alleviate the students' anxiety and enhance their inherent drive to learn. This observation aligns with Peterson's (2016) findings on DGBL environments, reinforcing the notion that digital games can foster engaging and less intimidating learning experiences that naturally stimulate students' motivation and social interactions.

For instance, as detailed in Chapter 5, one of the teachers described a scenario where students were engaged with building a scene related to a language lesson in Minecraft. The task involved creating a setting based on a story about a tailor and a giant. This task involved using English language to negotiate roles and collaborate on building various elements of the scene. One student crafted the tailor's tricks, while another created the giant's tricks, and so on. They worked collaboratively to set the scene, including the mountain, and used the vocabulary from the lesson by inscribing words on signs and forming sentences with the new vocabulary. This approach transcended the confines of rote memorisation and translation of knowledge traditionally employed in Saudi classrooms, actively engaging students in the practical application of the language they were learning (Peterson, 2016b).

On deeper analysis of the study findings on the advantages of DGBLL, it became evident that much of the value of integrating Minecraft into the curriculum was the significant

multimodal social semiotic benefits offered. This pedagogical strategy broadened the communication spectrum beyond conventional verbal and written forms, embracing visual symbols, spatial arrangements, and even computer coding—fundamental aspects of Minecraft's gameplay. Teachers observed that students could comprehend a complex vocabulary such as "spin" by experiencing the action within the game environment, thereby associating the term with its visual and interactive representation (Jewitt, 2009). The immersive experience of students in the game highlights how the multimodal social semiotic perspective of language learning is enhanced when students interact with semiotic resources in authentic scenarios (Jewitt, 2009). The study underscores the pivotal role of Minecraft as a platform for multimodal language learning, equipping students with the skills to navigate and construct meaning in a digital landscape, thereby preparing them for the diverse literacy demands of the contemporary world (Pellerin, 2020; Worsley et al., 2021).

This study's findings, analysed from sociocultural and multimodal perspectives, illustrate the multifaceted features of Minecraft that support language learning—such as speech, text, gesture, image, sound, and action—by helping students to associate words with their meanings, thereby bolstering comprehension and retention (Jewitt, 2009; Kress, 2010). Teachers appreciated the communicative potential within the Minecraft platform, where students practised the target language and exchanged feedback, cultivating a nurturing learning community. As teacher Aisha noted, "They correct each other's mistakes." This highlights the opportunities for peer tutoring and scaffolding of learning in this environment that encourages peers to work together collaboratively to produce an outcome. She further explained that this collaborative interaction helped build a positive culture where students felt more comfortable and supported:

> They face many problems and they seek help from each other; I don't have to go by myself. Actually, the students will take the first step and their friend will jump in and teach them how to deal with it. That's what I liked, that they started to build on each other more than a teacher. (Aisha)

This peer-driven approach promoted a supportive and interactive classroom atmosphere, encouraging students to work together collaboratively to produce an outcome, as well as reinforcing the sense of community within the classroom. This reflects a sociocultural perspective on language learning, which makes visible the importance of social interaction and collaboration in fostering linguistic competence (Ohta, 2017; Vygotsky, 1978).

Minecraft, in this study, emerged as a vibrant platform for social interaction and multimodal communication in English for EFL learners. Students were actively involved in a range of tasks and activities, employing various modes of expression and interpretation. This

not only embodied the sociocultural and multimodal perspectives that underpin this study but also demonstrated how engagement in Minecraft's virtual world facilitated EFL students' participation in authentic and meaningful communicative practices. Consequently, there was a marked improvement in their linguistic and intercultural competence, making visible the potential of DGBLL as an innovative approach in language education (Pellerin, 2020; Worsley et al., 2021).

In line with the literature on teachers' education and DGBL, findings from this study emphasise the need to provide teachers with opportunities to experience and reflect on the use of digital games in their own learning and teaching contexts (Becker, 2007; Girvan et al., 2016). Through their engagement with Minecraft professional learning and integration of the game into their curriculum, the teachers in this study were able to enhance their knowledge and skills in using digital games for EFL education—an important element to support pedagogical transformation (Gutierrez et al., 2023). They explored the pedagogical affordances and challenges of multiplayer online games, and they personally experienced the benefits of Minecraft for social language learning and multimodal communication. This appeared to boost their motivation and confidence to incorporate the game into their teaching practices.

One of the salient benefits of employing Minecraft for EFL learning, as identified in this study, is the interactive nature of gaming and its potential to enhance EFL teachers' willingness and confidence to incorporate digital games into their classrooms. This finding presents a contrast to other studies, which indicate that while teachers often have positive attitudes towards digital games for learning, they seldom use them in practice (Gutierrez et al., 2023). The teachers participating in this study not only exhibited an eagerness to experiment with the game-based approach but also demonstrated resilience in surmounting the challenges and obstacles encountered in the course of its implementation in their English classrooms.

Teachers appeared to derive enjoyment from playing and learning about the application of Minecraft in their professional development sessions and acknowledged its potential for increasing their students' social language skills and multimodal literacy. They expressed a strong interest in broadening their understanding of how to effectively employ Minecraft and other digital games within the EFL educational context and were keen to share their experiences and practices with their peers. For instance, Mariam's responses exemplified the collaborative environment fostered by using Minecraft, noting its supportive resources of value for peer learning among teachers, which facilitated the exchange of insights and strategies for integrating the game into EFL teaching practices. She emphasised the benefits of observing and engaging in discussions with fellow teachers, which aided in refining her

own approach to using Minecraft as a pedagogical tool. This fostered a platform for the exchange of ideas, feedback, and support on using Minecraft for EFL learning and teaching, nurturing a sense of innovation and fostering a positive attitude towards DGBL.

This collaborative learning environment described by the teachers mirrors what J. Gee (2004) describes as "affinity spaces", where individuals converge around shared activities, interests, or goals. In these spaces, learning is enhanced as participants, irrespective of their formal qualifications, contribute and acquire knowledge based on their levels of engagement and expertise (J. Gee, 2004). The collaborative environment reported by the teachers in this study exemplifies an affinity space, where they not only engage in knowledge exchange about effective practices but also co-construct new pedagogical strategies through ongoing dialogue and mutual observation. The application of affinity spaces in this context underscores the recommendations made by Gutierrez et al. (2023), who suggest that teachers need more support and guidance on how to integrate digital games into their curricula and instruction, how to assess the learning outcomes of game-based activities, and the importance of involving teachers in the design and evaluation of digital games. By demonstrating how these recommendations can be enacted in a Saudi Arabian primary EFL context, this study addresses significant gaps identified in the literature and shows practical applications of sociocultural and multimodal theories in educational settings. Therefore, this study not only contributes to the existing literature on DGBLL but also provides actionable insights for teachers seeking to incorporate innovative and collaborative teaching methods into their practice.

6.4.4 Potential for Home–School Connections

Building upon findings from Chapter 5 that presented insights into how implementing Minecraft as a DGBLL tool transcends the boundaries of traditional learning environments, teachers' narratives illustrated how game-based learning has the potential to foster a dynamic home–school connection that enriches the students' linguistic engagement and cognitive development. This interconnected learning was highly valued for facilitating the ongoing development of multimodal literacy skills, encompassing reading, writing, speaking, listening, and visual interpretation, thereby setting the stage for the detailed discussion that follows. The integration of Minecraft into the curriculum extends the educational experience beyond the traditional classroom setting, encouraging continued linguistic and cognitive engagement at home (J. Gee, 2003). Teachers reported that students not only engaged with Minecraft for entertainment, but also used the platform to extend their learning experiences into the home environment. For example, students frequently approached teachers outside of classroom hours to showcase their in-game achievements and seek feedback on their projects. This

proactive engagement demonstrates the game's role in motivating students to independently apply their language skills in communicative and interactive contexts, which is essential for language acquisition (Kress, 2010).

Furthermore, the assignment of Minecraft-based homework tasks illustrated the game's capacity to support flexible and adaptable learning. Teachers noted that these tasks allowed students to practise and reinforce vocabulary and grammar in contextually rich settings, which are more reflective of real-world language use than traditional homework assignments. This practice not only helps solidify the language skills learned in the classroom but also encourages students to apply these skills in new and varied contexts, thereby enhancing their ability to transfer knowledge across different modalities and environments (Jewitt, 2009). These interactions between home and school facilitated by Minecraft created a seamless learning environment where multimodal literacy—encompassing reading, writing, speaking, listening, and visual interpreting skills—is continually developed. Minecraft's immersive and engaging nature allows students to explore language in a multimodal context, thus reinforcing the integration of verbal and visual elements. This continuous, interactive learning process not only reinforces language proficiency but also enriches students' multimodal communicative competencies, preparing them for the complexities of contemporary communication landscapes (Cope & Kalantzis, 2009).

From a sociocultural perspective, the home–school connection can be seen as a way of bridging the gap between the students' cultural and linguistic backgrounds and the school's expectations and norms. By using Minecraft as a learning tool, teachers can tap into the students' funds of knowledge, which are the skills, experiences, and resources that they bring from their homes and communities (Moll et al., 1992). Teachers in this study also acknowledged and valued the students' diverse literacy practices, such as playing, creating, and communicating in the virtual world, and used them as a basis for developing their academic literacy skills (Perry, 2012). Furthermore, the home–school connection can facilitate students' participation in affinity spaces, which are groups of people who share a common interest and learn from each other through social interaction (J. Gee, 2004). By playing Minecraft at home and at school, students can join different affinity spaces, such as their peers, their families, and their teachers, and learn the language and culture of each group (Wenger-Trayner & Wenger-Trayner, 2015).

From a multimodal perspective, the home–school connection can be seen as a way of expanding students' repertoire of modes and media for meaning-making. By using Minecraft as a learning tool, teachers can expand students' repertoire of experiences to a variety of modes and media, such as speech, text, gesture, image, sound, and action, and help them

understand how they work together to create meaning in different contexts and genres (Kress, 2010). Moreover, the home–school connection fostered by Minecraft can significantly enhance students' multimodal literacy, which involves the ability to understand and produce texts that incorporate multiple modes and media (Cope & Kalantzis, 2009). This enhancement occurs as students engage with Minecraft both at home and in school, using its dynamic and interactive environment to develop a range of literacy skills across different contexts.

In practical terms, when students play Minecraft, they are not just interacting with a virtual world; they are actively making choices about how to communicate and represent ideas within that world (Kim & Johnson, 2021; Nash & Brady, 2022). For instance, they select and combine textual, visual, and spatial modes to accomplish tasks or to express creative ideas. This involves writing instructions for other players, creating visual representations of concepts through building activities, or navigating the game's space to understand and apply geometrical concepts. Each of these activities requires students to think critically about the best ways to use different modes for specific purposes and audiences, enhancing their ability to design, evaluate, and synthesise information across various media (Jewitt, 2008; Kress, 2010; Pellerin, 2020).

While the advantages of DGBLL are numerous and significant according to the findings of this study, it is important to also consider the potential challenges and drawbacks reported by teachers. The next section discusses some of the disadvantages of DGBLL to provide a nuanced perspective on this approach. This will allow a comprehensive evidence-based understanding of the implications of integrating digital games into EFL language learning environments.

6.5 Teacher Perceptions of the Disadvantages of DGBLL

As already discussed in Chapter 5, while the advantages of DGBLL are significant, it is crucial to acknowledge the challenges that teachers encountered when using digital games like Minecraft for language learning. A key concern was the students' lack of prior experience with the game, necessitating substantial scaffolding to support their gameplay. Teachers reported that some students struggled with understanding the game's rules, objectives, and mechanics, requiring consistent guidance and feedback (Chang & Hwang, 2019). Moreover, teachers noted that students' low digital literacy skills or limited access to necessary technological resources hindered their participation in game-based activities. Previous studies highlight how students bring diverse digital self-efficacy to the classroom, with the digital divide still a reality for many (Scholes, 2023; Scholes et al., 2022). These barriers underscore the digital divide that can affect students' ability to benefit from educational technologies,

exacerbating educational inequities in settings that heavily rely on digital tools for learning (Liu2021).

Teachers also faced challenges in integrating games into their curriculum and classroom practice, such as creating suitable activities that align with the learning goals and managing technical issues. Acceptance of game-based learning depends on perceived usefulness, enjoyment, self-efficacy of using games, availability of technical support, curriculum fit, and student motivation (Bourgonjon et al., 2013). Managing classroom dynamics and maintaining control over the learning environment when using digital games was another perceived challenge. The use of games required extensive planning, preparation, and coordination. Teachers needed to be flexible and adaptable to manage unexpected situations or problems during game-based activities. They also observed an increase in noise levels, distractions, and a sense of chaos, as students became more excited, active, and autonomous in their learning (Alakurt & Yılmaz, 2021; Steinkuehler & Duncan, 2008). However, these challenges can also be seen as opportunities for teachers to rethink their roles and practices in the digital age, and to adopt a more learner-centred and collaborative approach to teaching and learning. Teachers need to develop a positive attitude and a shared vision towards technology use, as well as a repertoire of effective pedagogical strategies and examples (Ertmer & Ottenbreit-Leftwich, 2010; Kaminskienė et al., 2022).

In conclusion, the integration of digital games like Minecraft into the classroom presents challenges but also offers significant opportunities for enhancing language learning outcomes and experiences. Such approaches call for a shift in the teachers' pedagogical approaches and a rethinking of their roles in student learning in the digital age.

While the pedagogical benefits of DGBLL were already outlined in Chapter 5, the following section synthesises these findings alongside the barriers identified by teachers, to critically examine both the opportunities and challenges associated with integrating DGBLL into primary EFL classrooms.

6.6 Opportunities and Barriers to Using DGBLL

The third research question explored how teachers integrated DGBLL into their EFL pedagogical practice. Interviews with teachers during their integration of Minecraft professional learnings in their classrooms provided valuable insights into their perspectives on opportunities and barriers, which are discussed in the following subsections.

6.6.1 Perceived Benefits and Opportunities

This research supports other work that highlights the benefits of game-based pedagogical approaches and the effectiveness of interfaces such as Minecraft in promoting language development and academic learning across subjects, as well as social skills like communication, collaboration, and leadership (Alawajee & Delafield-Butt, 2021; Ellison et al., 2016; Slattery et al., 2023). The game also bridges educational activities with out-of-school experiences, fostering creativity, innovation, and collaboration (Ritella & Marcone, 2024; Slattery et al., 2023). From a sociocultural perspective, Minecraft leverages students' funds of knowledge—their skills, experiences, and resources from home and community—to enhance academic literacy skills. It values students' diverse literacy practices, such as playing and creating in the virtual world, and uses them to bolster academic literacy (Perry, 2012).

Moreover, Minecraft encourages participation in affinity spaces—environments where individuals with shared interests learn through social interaction. Engaging with Minecraft in different settings allows students to join various affinity spaces, including those with peers, family, and teachers, facilitating a seamless integration of academic and personal learning environments. This concept of affinity spaces is supported by the work of J. Gee (2004), who articulated that such spaces are characterised by people drawn together through a shared engagement in common activities, fostering informal learning and knowledge sharing. Brevik and Holm (2023) further found that informal and formal language teaching and learning were connected through students' use of English outside school, primarily linked to online gameplay and social media, which extended their existing affinity spaces.

From a multimodal perspective, Minecraft introduces students to a range of modes and media for meaning-making, such as speech, text, gesture, image, sound, and action. This exposure helps students understand the interplay of these elements in creating meaning across contexts and genres (Kress, 2010). Teachers can further encourage students to explore the potential and constraints of each mode and medium, significantly enhancing their multimodal literacy—the ability to comprehend and create texts that incorporate multiple modes and media (Cope & Kalantzis, 2009).

This study explored the opportunities of DGBLL through Minecraft, which provides a rich context for students to develop their ability to select, combine, design, and evaluate various modes and media for effective communication. When constructing narratives within Minecraft, students employ linguistic, visual, and spatial modes, reflecting the principles of multimodal literacy. The social aspect of Minecraft, where students collaborate and share creations, exemplifies the concept of affinity spaces, characterised by shared practices and common

endeavours, often facilitated by technology (J. Gee, 2004). These spaces allow students to apply theoretical concepts practically and reflect on multimodal literacy in authentic contexts.

In summary, the narratives of the teachers show that Minecraft serves as a vital medium between school and home, fostering continuous and integrated learning experiences that are in harmony with sociocultural theory. It actively engages students in multimodal communication, thereby enhancing their multimodal literacy and showcasing the potential of DGBLL to create a rich and engaging learning environment.

6.6.2 Perceived Barriers to DGBLL

A primary theme that emerged from the interviews was the perceived barriers to implementing DGBLL in the classroom. Teachers identified several challenges that made them hesitant to use Minecraft, despite acknowledging its potential benefits. These challenges included the lack of adequate training and support, the diversity of the students' language skills, and the difficulty of classroom management. These findings align with previous research that highlighted the importance of addressing the teachers' concerns and needs when integrating technology in education (Ertmer & Ottenbreit-Leftwich, 2010; Zheng et al., 2018).

The lack of adequate training and support emerged as a significant barrier for teachers who aspired to integrate DGBLL into the EFL classroom. Teachers expressed a need for more professional development opportunities to learn how to effectively integrate the game into their curriculum, align it with their learning objectives, and assess the students' progress (Dogan et al., 2021; Rosales, 2021). Teachers sought guidance on how to facilitate gameplay, provide feedback, and foster interaction among the students. These findings are consistent with previous research that emphasised the importance of teacher preparation and support in technology integration (Ertmer & Ottenbreit-Leftwich, 2010; Zheng et al., 2018).

In the exploration of DGBLL's application in Saudi primary classrooms, teachers identified the diversity of students' language skills as a significant barrier. Concerns were raised about the suitability of DGBLL for students with varying levels of English proficiency, with some students struggling to understand the game content and others finding it too simplistic. To overcome this, teachers recommended that DGBLL be adaptable to individual needs, offering varying levels of difficulty, support, and challenge. This recommendation is in line with the principles of differentiated instruction and universal design for learning, which advocate for inclusive and effective learning environments that cater to all learners and support diverse learners by providing multiple means of representation, engagement, and expression (Edyburn, 2010; Plass et al., 2015; Rose & Meyer, 2002; Tomlinson & Moon, 2013).

To address these differences among students, teachers designed lesson plans that incorporated scaffolding strategies, allowing for a gradual increase in complexity and independence as students' proficiency improved. For example, some teachers used Minecraft to clarify grammar lessons, creating engaging experiences that aided in understanding complex grammatical concepts; others used the game to create scenes from stories, enhancing students' comprehension and fostering creativity and critical thinking. Additionally, teachers used Minecraft characters to reveal abstract vocabulary, associating words with concrete in-game elements to aid understanding and retention. By incorporating scaffolding and differentiated strategies in this way, teachers can ensure that every student benefits from DGBLL, regardless of their initial proficiency level. This commitment to inclusivity not only enhances the learning experience for all students but also aligns with the broader educational goals of fostering equitable and effective language education. These varied approaches underscore Minecraft's versatility as an educational tool, capable of meeting diverse learning needs and objectives.

The challenge of classroom management emerged as a third barrier to the use of DGBLL. Teachers reported difficulties in maintaining control over the learning environment as students became deeply engaged in the game, leading to distractions and off-task behaviour. To address this challenge in the context of DGBLL, it is imperative to consider structured strategies that are tailored to the interactive nature of digital game learning. The literature suggests that clear rules and setting objectives are essential for maintaining students' focus and minimising potential disruptions. For instance, M. Wang and Zheng (2021) found that game-based learning environments can enhance students' knowledge and skill acquisition when well structured, suggesting that a well-managed DGBLL environment can lead to positive educational outcomes. Relevant here, Dogan et al. (2021) emphasise the role of teachers' confidence and perceived skills in using technology as pivotal factors in the successful integration of instructional software, which includes game-based applications. This indicates that teachers' preparedness and skill in managing technology are crucial for effective classroom management in DGBLL settings. In practice, this could involve teachers setting specific goals for each gaming session, using timers to manage game time, and closely monitoring students' progress to ensure they remain on task. By adopting these strategies, teachers can create a classroom environment that not only manages the challenges of DGBLL but also enhances the overall learning experience for students.

Teachers also highlighted potential technical issues, such as internet connection, device compatibility, or game glitches, that might disrupt the gameplay. Some teachers indicated that they needed strategies to balance gameplay with structured language learning activities,

monitor students' behaviour and performance, and troubleshoot technical problems. These challenges echo those reported by other studies on DGBLL. For instance, M. Miller and Hegelheimer (2006) noted that while digital games can assist learners in developing proficiency in a second language through acquiring vocabulary and developing general strategies for better learning a second language, these benefits are contingent upon the smooth functioning of the technology and effective integration into the curriculum. Similarly, Reinders and Wattana (2014) reported the positive effects of digital gameplay on learners' willingness to communicate in L2, but their study also acknowledged the need for adequate technical support and structured guidance to maximise these benefits. These studies highlight the dual need for addressing technical challenges and providing pedagogical support to ensure the successful use of digital games in language learning.

In conclusion, while DGBLL presents promising opportunities for enhancing language learning, it also poses several challenges that need to be addressed. These include the diversity of students' language skills, the difficulty of classroom management, and the potential technical issues that might disrupt gameplay. By understanding and addressing these barriers, teachers can better leverage DGBLL to create engaging and effective language learning experiences for their students. Future research should continue to explore strategies for overcoming these challenges and maximising the benefits of DGBLL in language education.

6.7 Implications for Language Learning

The findings of this study have significant implications for English language teaching in Saudi Arabia and more globally in other EFL contexts where English is taught as a foreign language. The shift towards more student-centred, communicative pedagogical approaches aligns with contemporary theories of language teaching advocated by J. Gee and Hayes (2011). By incorporating DGBLL, teachers have the potential to create authentic, immersive language learning environments that promote English as a social practice. This approach responds to sociocultural theory and the emphasis on the role of social interaction in learning (Vygotsky, 1978). Furthermore, by adopting a multimodal perspective, teachers can recognise and leverage the diverse modes and media that digital games offer for language learning, whereby the player is integral to their learning. As Jewitt (2013) and Kress (2010) suggest, multimodality can enhance learners' linguistic and semiotic resources, as well as their critical and creative skills, as they interact with various modes and media in meaningful contexts. Multimodality can also foster learners' affective and motivational states, as they experience more choice, agency, and enjoyment in their language learning process (Balaman, 2018).

DGBLL can also foster learners' motivation, engagement, and autonomy, which are key factors for successful language learning (Dörnyei, 2001; Ryan & Deci, 2000). Furthermore, DGBLL can enhance learners' language skills and competencies, such as vocabulary, grammar, pronunciation, listening, speaking, reading, and writing (Godwin-Jones, 2014; Klimova & Kacet, 2017; Xu et al., 2019). However, addressing the identified challenges is crucial for successful DGBLL implementation. Providing EFL teachers with comprehensive training and support is critical for their professional development (Cochrane & Farley, 2017; Gutierrez et al., 2023). This support should encompass not only technical proficiency but also pedagogical strategies for effective DGBLL integration. Teachers need to be aware of the principles and practices of DGBLL, such as selecting appropriate games, designing meaningful tasks, facilitating learner interaction, and assessing learning outcomes (C.-M. Chen & Hsu, 2008; Hung et al., 2018; Ke, 2016). Moreover, teachers need to overcome the barriers and constraints that may hinder the adoption of DGBLL, such as lack of time, resources, infrastructure, institutional support, and learners' readiness (Bourgonjon et al., 2013; Kazu et al., 2022; Klimova & Kacet, 2017). Therefore, it is imperative to create a conducive environment for DGBLL that fosters collaboration, innovation, and experimentation among teachers and learners.

6.8 Implications for Further Research

Future research could potentially delve into the experiences and perspectives of students to provide a more comprehensive understanding of Minecraft's impact on language learning. The effectiveness of Minecraft for different age groups and educational and cultural contexts warrants further exploration. While this qualitative study aimed to provide in-depth case study findings, employing diverse methods, such as observations, surveys, and visual analytics also offer ways to further investigate the pedagogical application of Minecraft-based education for EFL learning (AlJanah et al., 2023). Additionally, addressing the challenges and limitations of using Minecraft for EFL teaching and learning, including technical issues, ethical concerns, and teacher readiness, is crucial (Z. Xu et al., 2020). Understanding how teachers successfully integrate gaming into their curriculum and comply with national directives is still an under-researched area, with future research across international boundaries to generate new knowledge of successful facilitation an important next step.

6.9 Limitations

While this study has provided significant insights into teacher perspectives on using DGBLL for EFL, there were limitations of the study. Cultural sensitivities required that only

female teachers were invited to participate in the study. Further studies could extend this current project to also consider non-female teacher perspectives on integrating game-based pedagogies into their EFL classrooms. In addition, given the time constraints of the study, taking a longitudinal approach to understand Minecraft for language learning would offer additional insights. As the current study was conducted with busy teachers in schools, the research design sought to minimise the burden and time costs of their voluntary participation in the research; however, a qualitative study such as this one would be strengthened by a longitudinal approach to build on the current findings. While this study kept the duration and number of interviews manageable for teachers, further in-depth understanding could be ascertained through longer and more frequent interactions with the teachers.

Although this study was intentionally focused on primary school children, it is recognised that the developmental stages and learning contexts of this group are distinct from those of other age groups. This means the findings may not be applicable to secondary or higher education settings, where students' cognitive abilities, autonomy, and learning strategies may require additional considerations (Kafai & Burke, 2016). As illustrated in the Chapter 5 findings, the engagement of primary school children with Minecraft in DGBLL was facilitated through specific scaffolding techniques that may be different for older students who possess more advanced literacy skills and a higher degree of self-directed learning (Smith, 2020).

For instance, in the findings one of the teachers, Ayah, described a task that involved creating a scene based on a story about a tailor and a giant. In this reading lesson, targeted at primary children aged 9–10 years in Grade 4, students used English to negotiate roles and collaboratively build various elements of the scene, such as crafting the tailor's tricks and the giant's tricks, and inscribing vocabulary words on signs to form sentences. This structured and supportive activity allowed younger students to practise and apply their language skills meaningfully, thereby enhancing their understanding and retention of new vocabulary. Another example involved a vocabulary-building exercise where students labelled different objects within the game world. Aisha noted that her students, each with different capacities—visual, physical, auditory—benefited from Minecraft's diverse materials. This approach enabled younger students to use a range of learning modalities, which helped foster a deeper comprehension and retention of new vocabulary through guided support and peer interaction. She observed that students faced many problems and sought help from each other, which allowed them to build on each other's strengths more than relying solely on the teacher's assistance.

For older students with more advanced literacy skills, the scaffolding techniques might involve more self-directed tasks and less direct guidance. For example, Nouf described an

activity where older students in Grade 6 were assigned the task of creating models of Saudi houses. These students used their advanced vocabulary and problem-solving skills to independently design and build the models while aligning their creations with curriculum objectives. This activity required them to apply their language skills in a more autonomous and self-directed manner, demonstrating a higher level of cognitive engagement and independence. By tailoring the level of support to the students' developmental stages, teachers can provide appropriate scaffolding that fosters both the acquisition and application of language skills, in line with Vygotsky's (1978) concept of the ZPD.

Additionally, this study was conducted within the Saudi Arabian context, which has a specific cultural and educational environment where Minecraft is popular and an authorised activity. While Saudi Arabia has many similarities to other nations where English is taught as a second or foreign language, making many of the findings generalisable, to gain a broader understanding, future research could investigate the experiences of learners using DGBLL across diverse cultural and linguistic backgrounds.

This study primarily gathered data from teachers, and their insights are valuable, while meeting the aims of the study. This study used in-depth interviews to capture the nuanced changes in language learning experiences before and after the integration of DGBLL in classrooms, and it is important to recognise the strengths of this qualitative descriptive approach. This study focused on exploring the teachers' perspectives on social language learning with Minecraft, and as such, it was not necessary to control for variables such as students' prior knowledge or individual differences. The purpose of this research was to gain an in-depth understanding of the sociocultural context of language learning, literacy as a social practice, and the role of multimodality in enhancing the social interaction within the EFL classroom. While not a limitation, including students' perspectives in future research, however, could add a further perspective and provide further understanding. Students are the main users of Minecraft, and their views and feedback could reveal additional insights into the benefits and challenges for learners using the game for social interaction and language learning (Alawajee & Delafield-Butt, 2021).

Furthermore, while classroom observations and document analysis could have provided additional insights, these methods were beyond the intended scope of this study, which specifically focused on exploring the teachers' perspectives through interviews. Similarly, although teachers' reflections on the professional development sessions were gathered, a formal evaluation of the training content and delivery was not a part of the study design. Future research could incorporate classroom observations, document analysis, and critical

evaluations of professional learning programs to offer a more comprehensive understanding of DGBLL implementation.

6.10 Recommendations

Building on the study findings and theoretical considerations, the following recommendations are offered for teachers, curriculum designers, and policymakers who are interested in using Minecraft for EFL teaching and learning in terms of pedagogical integration, curriculum design, professional development, and collaborative learning for teachers.

To support pedagogical integrations, teachers could consider embedding Minecraft into EFL pedagogical practices, given the potential to enhance social interaction, collaboration, and multimodal learning. They can draw inspiration from the sociocultural and multimodal theories discussed in this study, as well as from the existing literature and examples of Minecraft-based education (e.g., Alawajee & Delafield-Butt, 2021; Kafai & Burke, 2016; Mifsud et al., 2013). They could also consider how the learning objectives and the students' needs and preferences can be supported by DGBLL and the available resources when designing and implementing Minecraft activities.

Education curriculum designers are encouraged to explore how they can use DGBLL to integrate the unique features of games such as Minecraft to create engaging and immersive language learning experiences, embracing both sociocultural and multimodal learning principles (Nebel et al., 2016). A key consideration would be to ensure the curriculum can be aligned with relevant standards and outcomes, providing clear guidance for teachers and students. Of vital importance is that many valuable resources are available online to support the learning of English, with activities readily available for adaptation by teachers. These resources contribute to the creation of effective and authentic learning experiences; they also ensure that language lessons are both engaging and pedagogically sound.

Professional development programs would benefit from include training on effective strategies for integrating DGBLL into language instruction, by emphasising the sociocultural and multimodal aspects of language learning. As the findings from this study highlight, social interaction in learning (Vygotsky, 1978) is critical, and Minecraft's collaborative platform supports this by fostering meaningful social interactions (Ellison et al., 2016). Multimodality, involving multiple modes of representation, further enhances language learning (Jewitt, 2013). Collaborative learning and sharing best practices were also illustrated as positive repercussions of leveraging Minecraft's educational potential. What became visible in this study was how teacher collaborations and sharing best practices can collectively develop more effective teaching strategies and solutions to common challenges. For instance, through

professional learning communities, teachers can shared their experiences and insights on integrating Minecraft into their language instruction, which leads to the development of innovative teaching practices and the refinement of existing methods (Fung et al., 2022). This collaboration can facilitate the exchange of resources, such as lesson plans and assessment tools, which can be adapted to different classroom contexts.

Moreover, collaborative learning among students using Minecraft can enhance their engagement and learning outcomes. According to Fung et al. (2022), collaborative tasks within Minecraft encourage students to work together to solve problems, complete projects, and achieve common goals. This cooperative interaction aligns with constructivist learning theories, where knowledge is constructed through social interaction and collaboration (Hmelo-Silver et al., 2007; Zajda, 2021, 2022). Additionally, professional development must cover the technical aspects of using Minecraft in language classrooms, such as troubleshooting and understanding hardware and software requirements (Becker, 2007). This ensures a strong digital infrastructure to support perfect integration. Sanders (2021) suggests Minecraft can integrate various content areas and foster critical thinking, which supports constructivist learning approaches.

More recent research by Zajda (2021, 2022) also supports the effectiveness of constructivist approaches in fostering critical thinking and deep learning through problem-based learning environments. Furthermore, training can address the pedagogical frameworks for DGBLL by aligning the game-based activities with curricular goals and developing assessments that measure language proficiency and game-based learning outcomes. This alignment ensures that game-based learning is purposeful and enhances the addressed educational objectives (Arnab et al., 2015). Digital games, like Minecraft, can then enhance students' engagement and motivation, crucial factors for successful language learning (Esteban, 2024; Ryan & Deci, 2000).

Providing teachers with practical, hands-on experiences is also crucial. Simulation exercises, sandbox environments, and pilot projects allow teachers to experiment with Minecraft before classroom implementation. This hands-on practice is essential for building confidence and competence in using digital tools (Campos et al., 2020; Ekwueme et al., 2015; Schifter, 2008). Also, project-based activities with Minecraft support student learning and engagement, aligning with experiential learning theory (Saricam & Yildirim, 2021; Slattery et al., 2023). Professional development can foster a mindset of continuous learning and adaptation. As digital games and technologies evolve, they can inform the pedagogies implemented by teachers. This pedagogical enrichment can be facilitated through ongoing workshops, webinars, and online communities, which support continuous professional growth (Trust et al., 2016).

Finally, professional development could encourage reflective practice, allowing teachers to assess and adjust their strategies based on integration of DGBLL. Reflective practice is crucial for professional growth and the development of effective teaching strategies (Larrivee, 2000). In this study, teachers engaged in professional development sessions that offered hands-on experience with Minecraft. These sessions equipped them with the necessary practical skills to incorporate DGBLL into their classrooms. For example, Hala discovered that these sessions provided her with an opportunity to reflect on her teaching strategies and observe how students interacted with the game. By closely monitoring the in-game activities, she was able to evaluate, reflect, and intervene when necessary. She also planned lessons based on her observations to address any identified weaknesses. Similarly, Hessa emphasised that observing the students' interactions within Minecraft enabled her to adjust her teaching strategies to better facilitate the students' learning. She used these observations to assess the students' engagement and collaboration, and occasionally conducted quizzes to track their performance over time. These instances illustrate that the professional development sessions not only equipped the teachers with essential practical skills but also cultivated a culture of reflective practice. This culture empowered them to continually refine their teaching methods and enhance the learning outcomes of their students.

Suphasri and Chinokul (2021) discuss the impact of reflective practice on preservice teachers' professional lives. They underscore its role in developing each teacher's identity and quality. Reflective practice supports the development of metacognitive skills, essential for self-regulated learning (Flavell, 1979). By equipping teachers with the necessary skills, knowledge, and resources, professional development programs can significantly enhance the successful implementation of Minecraft and other digital games in language learning.

6.11 Innovative Approaches to EFL Learning in the Future

The advent of new technologies such as mixed reality, virtual reality, and the metaverse presents exciting opportunities to enhance DGBLL, particularly in EFL contexts. These modalities provide tools to extend social interactions in language learning and offer ways forward for future research. For example, Microsoft HoloLens 2, a mixed-reality technology, can provide an immersive, mixed-reality experience that allows EFL students to interact with holographic content in their physical environment. This technology can create a more engaging and interactive learning experience, which is especially important for language learners who may struggle with traditional language learning methods (Bonner & Reinders, 2018). In addition, virtual reality technology can simulate realistic environments for language practice, such as restaurants or marketplaces. This allows EFL learners to hone their skills

within specific contexts, providing a unique opportunity to enhance language learning through immersive and interactive experiences (Hua & Wang, 2023; Özgün & Sadık, 2023). Similarly, the metaverse, a collective virtual shared space, offers a novel platform for EFL learning through immersive, social, and problem-solving activities. It enables learners to interact in a virtual world, potentially enhancing communication skills and cultural understanding (Aydın, 2022; Warner, 2022). While these technologies hold the promise of revolutionising EFL education, careful integration is essential. Teachers must consider pedagogical strategies, technical feasibility, and potential barriers to maximise the benefits and avoid the pitfalls experienced by previous educational technologies (de Andrade et al., 2023; Bonner & Reinders, 2018).

These innovative approaches would potentially revolutionise EFL learning by making it more engaging, interactive, and effective. However, their integration into EFL instruction should be done thoughtfully by considering the pedagogical implications (Stec, 2022; X. Xu et al., 2023), technical requirements (Asratie et al., 2023), and other potential challenges and risks associated with the use of generative artificial intelligence in language education (Qiu et al., 2024). It is also crucial to ensure that teachers use these technologies in a productive and engaging fashion by learning from the mistakes of other EdTech platforms (Kuswoyo et al., 2022). By equipping EFL teachers with the necessary skills, knowledge, and resources, these innovative approaches could significantly enhance the successful implementation of DGBLL in EFL contexts (Asratie et al., 2023).

6.12 Theoretical Implications

From a theoretical standpoint, the findings in this study significantly contribute to both sociocultural and multimodal theories of learning. This study reaffirms and extends Vygotsky's sociocultural theory by providing empirical evidence on how DGBLL, specifically through Minecraft, enhanced social interaction, collaboration, and community building, which are central components of language development within a social context. According to Vygotsky (1978), language is a social and cultural phenomenon that emerges from interactions between individuals and their environment. This study demonstrates how Minecraft facilitates these interactions by providing students with a dynamic environment, where they can use multiple modes of communication—speech, text, images, and actions—to interact with their peers, teachers, and the game world. Through these interactions, learners co-construct knowledge, negotiate meaning, and develop their linguistic and social skills (Alawajee & Delafield-Butt, 2021).

The findings from this study show that Minecraft acts as a powerful mediating tool, supporting the concept of social mediation in language learning. Teachers reported that students engaged in more elaborate and meaningful conversations within the game, which aligns with Vygotsky's (1978) theory that higher mental functions develop through social interactions. The study highlights how the Minecraft platform can be used to scaffold learning within the ZPD. Teachers observed that students often took on the role of MKOs, providing peer support that helped fellow students to accomplish tasks they could not complete independently. This peer scaffolding aligns with Vygotsky's (1978) theory that learners can achieve higher levels of understanding with appropriate support.

The study provides evidence that from the teachers' perspectives, Minecraft fosters a sense of community among learners, essential for a sociocultural approach to language learning. The collaborative nature of the game encourages students to work together towards common goals, thereby strengthening their social bonds and creating a supportive learning environment. Minecraft's multimodal environment aligns with the principles of multimodal learning and provides empirical support for the importance of sensory engagement and interaction in language acquisition. Multimodal learning posits that humans learn best when they are exposed to and use multiple modes of representation, such as verbal, visual, auditory, gestural, and spatial (Mayer, 2014).

According to teachers' observations, the use of Minecraft appeared to enhance students' cognitive processing, memory, and comprehension by engaging students in various sensory and motor activities, such as listening, speaking, reading, writing, viewing, creating, and manipulating. This multimodal engagement stimulates different areas of the brain and facilitates deeper learning by providing diverse, interactive, and context-rich experiences. These findings support Moreno and Mayer's (2007) findings on the cognitive theory of multimedia learning. The study reveals that Minecraft allows learners to customise their learning experiences by choosing modes and media that best suit their preferences and needs. This flexibility supports Kafai and Burke's (2016) assertion that multimodal environments can cater to diverse learning styles and preferences by enabling individualised pacing and self-directed exploration, eventually leading to more effective, personalised learning outcomes.

The empirical evidence from this study shows that Minecraft integrates multiple modalities in a way that traditional learning environments frequently fail to achieve (Jewitt, 2008), supporting the findings of Kress and van Leeuwen (2001) on the effectiveness of multimodal learning environments. For example, students could visually represent vocabulary words through building structures or acting out verbs within the game, which reinforces learning by engaging visual, auditory, and kinaesthetic channels simultaneously (Jewitt,

2008). Overall, this study not only reaffirms existing theories but also extends them by demonstrating how DGBL platforms, such as Minecraft, can implement these theoretical concepts in practical, impactful ways. These findings suggest that incorporating such rich multimodal and sociocultural environments into educational practices can significantly enhance language learning and development.

6.13 Conclusion

This study has made a significant contribution to understanding the implications of DGBLL and the use of Minecraft Education Edition for EFL teaching and learning in contexts such as Saudi Arabia. From a theoretical standpoint, the findings illustrate the principles of sociocultural theory, evidenced by the shift towards student-centred and communicative pedagogical practices. This mirrors the interactive and community-oriented nature of learning described by Vygotsky (1978). Furthermore, the study's outcomes align with the multimodal learning framework (Kress, 2010) by demonstrating how Minecraft facilitates various forms of linguistic and cognitive engagement, as supported by the work of Kafai and Burke (2016) and Mifsud et al. (2013).

One of the most significant findings of this study based on the teachers' perspectives is the perceived transformative impact of Minecraft on students' motivation, engagement, confidence, and English communication skills. This is achieved as the students interact with their peers and teachers in an authentic and meaningful context within the game (Alawajee & Delafield-Butt, 2021). This aligns with previous research on young learners' processing of multimodal input and its positive impact on reading comprehension (Pellicer-Sánchez et al., 2020). The exploration of DGBLL within the Saudi primary EFL context revealed both opportunities and challenges. Teachers reported that Minecraft allowed for enhanced social interaction and collaboration by helping students to work together in ways that traditional classroom activities often fail to achieve. This finding supports the sociocultural theory's emphasis on the importance of social interaction in learning (Vygotsky, 1978). Furthermore, the multimodal approach to language teaching emphasises the need for authentic language learning experiences that mirror real-world communicative modes (Liaw & Chen, 2023). By integrating these approaches, DGBLL can offer a holistic and engaging language learning experience that resonates with learners' everyday practices. Additionally, the study highlights the necessity of providing adequate teacher training and support for navigating digital tools in language instruction, which aligns with the broader educational consensus on preparing teachers for the digital era (Liaw & Chen, 2023). The study also underscores the importance of differentiated

instruction and adaptive learning environments to manage classroom diversity effectively (Liaw & Chen, 2023).

This study demonstrates the dynamic interplay between sociocultural and multimodal approaches in English language teaching. It shows that these approaches not only coexist within the EFL context but actively complement and enhance each other. The sociocultural approach, with its emphasis on learner interaction and cultural context (Vygotsky, 1978), complements the multimodal approach, which integrates various forms of media and communication (Kress & van Leeuwen, 2020). Together, they create a rich, diversified learning environment catering to different learning styles and preferences. From the teachers' perspectives, this combination fostered a more engaging and effective educational experience, as evidenced by improved social language competencies in students.

A particularly noteworthy finding is the strengthening of the home–school connection through the use of Minecraft in EFL teaching and learning. This connection extends learning beyond the classroom, which allows students to practise and develop their language skills in their own time and at their own pace. This aligns with the concept of "lifewide learning", which emphasises learning in diverse contexts, including home, school, and community (Banks et al., 2007).

Based on the study findings, several implications and recommendations for theory, practice, and policy emerge. Adopting a sociocultural and multimodal lens for language learning is crucial, as it highlights the importance of using various communicative modes beyond traditional linguistic means. This approach values visual, auditory, gestural, and spatial resources as integral to the language learning process, facilitating a more dynamic and interactive educational experience (Rowsell & Collier, 2017). Providing scaffolding and differentiation for learners ensures that all students can engage with the material in ways that leverage their unique strengths and learning styles. Additionally, fostering an encouraging environment for DGBLL in the EFL context can significantly enhance engagement, motivation, and understanding (Balaman, 2018).

These recommendations align with the broader discourse on sociocultural theory in language pedagogy that advocates for integrating diverse modes of expression to support cognitive development within the ZPD (Dressman, 2020). While this study contributes to understanding DGBLL for EFL pedagogical approaches within Saudi and other similar contexts, it also reveals areas that need further exploration. Future research should investigate the long-term effects of DGBLL on language retention and proficiency, the most effective pedagogical strategies within this framework, and how these strategies can be tailored to accommodate diverse learners' needs. Additionally, the integration of Minecraft Education

Edition presents unique challenges and opportunities, such as program expansion and its impact on different age groups and proficiency levels. These gaps in knowledge drive the need for continued research to optimise DGBLL strategies and maximise their educational impact.

In the broader scheme, these findings highlight the potential of DGBL platforms to transform language education globally by reflecting frameworks of sociocultural theory, multimodal theory, and new literacies. Sociocultural theory emphasises the importance of social interaction and cultural context in learning (Vygotsky, 1978), while multimodal theory underscores the significance of integrating various forms of media and communication (Kress & van Leeuwen, 2001). New literacies focus on incorporating digital, multimodal, and interactive texts into educational practices to equip learners with the skills necessary for the 21st century (Lankshear & Knobel, 2011). By embracing these innovative approaches, teachers can create more engaging, effective, and culturally responsive learning environments that prepare learners for the communicative demands of the digital age.

DGBL platforms like Minecraft embody new literacies by fostering critical thinking, creativity, and collaboration through diverse forms of media and communication. These platforms encourage learners to navigate, interpret, and produce multimodal texts, thus developing their digital literacy skills alongside traditional literacy competencies (Lankshear & Knobel, 2011; J. Gee, 2003). The interactive and immersive nature of digital games provides authentic and meaningful contexts for language use, which allows students to practice and apply their language skills in authentic, real-world scenarios. This aligns with the principles of new literacies, which advocate for learning experiences that mirror the complex, multimodal communication environments students will encounter outside the classroom (Coiro et al., 2014).

Incorporating DGBL into educational practices also could support the development of essential 21st-century skills, such as problem-solving, adaptability, and digital citizenship, as was perceived in this study. These skills are increasingly crucial in a modern world where proficiency in navigating and creating digital content is paramount (Jenkins, 2009). Overall, the study contributes to an important theory–practice gap by advancing understandings of the experiences of EFL teachers integrating DGBL platforms to enhance language education. These findings are significant for the future of education as a DGBLL approach not only improves engagement and motivation but also equips students with the necessary skills to thrive in a rapidly evolving digital landscape.

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Appendices

Appendix A:
Interview Questions

Phase 1 Questions Prior to Professional Development

<table>
<tr><td colspan="2">The purpose of these questions is to understand current teaching approaches used by the teachers and to understand if EFL teachers are receptive to using DGBLL that requires social interaction between students. Thus, to answer RQ1: What are primary teachers' perspectives on using DGBLL to promote English as a social practice for their students? The questions will first collect demographic information (level of education, teaching experiences, teaching specialty, grade level taught, current institution, EFL training, experience in ICT, experience with digital games). Then the questions will be related to two themes: understanding current pedagogy for supporting English as social practice and understanding receptiveness to using DGBLL to teach English. Questions will include:

Demographic questions:
a. Can you please tell me a little bit about yourself?
b. Which school are you working with?
c. What is your role there?
d. Have you received any EFL training?
e. Have you ever incorporated any digital tools in your teaching?
f. Have you ever used digital games as part of your teaching method?</td></tr>
<tr><td>Theme 1: Understanding current pedagogy</td><td>Theme 2: Understanding teacher receptiveness to using DGBLL through Minecraft Education Edition to teach English</td></tr>
<tr><td>a. What are your current teaching practices for advancing your students' oral English?
b. How do you currently foster social learning environments in your class to encourage your students to use oral English language?</td><td>a. What are your thoughts on using digital games for teaching English?
b. How do you think incorporating Minecraft Education Edition in your classroom could support social learning environments to encourage English language interactions?</td></tr>
</table>

c. How do you facilitate opportunities for students to be engaged in discussion in English with you and with their class peers? d. How do students engage in oral English in response to your current practices? e. How do students communicate using gestures—nonverbal language—when engaging in English discussions? f. How do students engage with visual resources when they engage in learning English? g. Do you currently use games to teach English language in your class? In what ways? h. Do you think about your classroom as a community of practice where students learn from more competent peers and interactions with others? In what ways? i. How do students use the language they learn in class to support their peers' learning or receive support from other peers? What is the purpose of student discussion if they do? j. In your opinion what is the best way to encourage students to communicate regularly in English at school?	c. In what ways will Minecraft's multiple modes provide opportunities for teaching English? d. What opportunities do you foresee using Minecraft for language learning? e. What barriers do you foresee using Minecraft for language learning? f. How do you feel about students playing Minecraft and talking to one another and interacting socially as they play as one way to learn English? g. Do you have any apprehension about doing the Minecraft professional development course and then using the game in your class?

Phase 2 Questions at Week 3

<table>
<tr><td colspan="2">The purpose of these questions is to establish how teachers are progressing with the teaching of English using DGBLL, thus, to answer RQ2: How does the use of DGBLL help advance primary students' English as a social practice?
There are two themes of questions to be asked: progress with pedagogy (advantages), and progress with pedagogy (disadvantages).</td></tr>
<tr><td>Theme 1: Progress with pedagogy (advantages)</td><td>Theme 2: Progress with pedagogy (disadvantages)</td></tr>
<tr><td>a. How has your English teaching changed since you started using Minecraft with your students?
b. How have your students responded to using Minecraft and what have you noticed about their engagement with multimodal elements as they play?
c. In what ways have your students' language skills changed or improved as a result of using Minecraft?
d. Can you provide examples of how playing Minecraft has helped promote English as a social practice in your classroom? Can you describe some examples of opportunities for oral language but also opportunities to support reading and writing?
e. How has Minecraft helped to create a more interactive and engaging learning environment for your students?
f. What specific activities do you use to encourage peer-to-peer language learning during gameplay?</td><td>a. Can you describe any difficulties that you have encountered while using Minecraft to promote English use in your classroom?
b. Have you faced any challenges in terms of engaging students in English language communication during Minecraft gameplay? If so, can you elaborate on these challenges and any issues related to oral language use or supporting reading and writing in English?
c. Have you noticed any limitations in terms of promoting English as a social practice through Minecraft play? If so, how can you explain these limitations?
d. How do you evaluate the effectiveness of using Minecraft in your classroom to promote English language through social interactions?
e. Have you received any negative feedback from students or parents about the use of Minecraft for English language teaching? If so, can you elaborate on this feedback?</td></tr>
</table>

g. How do you create a sense of community among your students during Minecraft gameplay? h. How have you seen the classroom community change since incorporating Minecraft in your teaching? i. How have your students been using nonverbal communication and gestures during English discussions while playing Minecraft Education Edition? j. In your opinion, what are some of the benefits of using DGBLL for teaching English as a social practice compared to traditional teaching methods? For example, what are your thoughts about the multimodal experiences provided by gaming? k. How has using Minecraft Education Edition in your classroom improved your students' social language skills and overall learning experience? l. Have you noticed any changes in student motivation and engagement since incorporating Minecraft Education Edition in your classroom? If so, can you provide examples?	f. In what ways do you think engagement with Minecraft is different to student engagement with traditional classroom materials and resources? g. Did you have any difficulties using Minecraft to support the students' English classroom? h. Can you describe any concerns you may have about potential barriers to incorporating DGBLL into your classroom? i. How do you ensure that students who may be less familiar with technology or digital games are able to fully participate in and benefit from DGBLL activities in your classroom?

Phase 3 Questions at Week 6 of Trial

The purpose of these questions is to understand how teachers integrate digital games into their curriculum and the challenges they faced, thus to answer RQ3: How do teachers integrate DGBLL into their EFL pedagogical practice? There are three themes of questions to be asked: progress with pedagogy (advantages), progress with pedagogy (disadvantages), and use of lesson plans.		
Theme 1: Progress with pedagogy (advantages)	Theme 2: Progress with pedagogy (disadvantages)	Theme 3: Use of lesson plans
a. In your experience, what advantages have you observed in using Minecraft to promote English as a social practice with your students? b. How has the use of Minecraft enhanced your students' language learning and social interaction skills? c. Can you provide specific examples of how Minecraft has facilitated authentic communication and collaboration among your students, promoting English as a social practice? d. How has Minecraft contributed to creating a more interactive and engaging learning environment for your students?	a. Have you encountered any challenges or limitations when using Minecraft to promote English as a social practice with your students? If so, could you please elaborate on these challenges? b. Can you describe any difficulties you have faced in terms of engaging students in English language communication during Minecraft activities? c. Have you noticed any limitations in promoting English as a social practice through Minecraft? If so, how would	a. How do you design your lesson plans to incorporate Minecraft as a tool for promoting English as a social practice? b. Can you describe any specific activities or strategies you include in your lesson plans to integrate Minecraft and align them with the curriculum objectives? c. How do you differentiate your lesson plans to accommodate students with varying English proficiency levels when using Minecraft? d. How do you assess student learning and progress when using Minecraft, particularly in promoting English

e. What are some of the benefits you see in using Minecraft, particularly in terms of multimodal experiences and the integration of technology for teaching English as a social practice?	you explain these limitations? d. How do you evaluate the effectiveness of using Minecraft in promoting English language skills and social interactions, and are there any areas where you believe it falls short? e. Have you received any negative feedback from students or parents about the use of Minecraft, particularly in relation to promoting English as a social practice? If so, could you provide further details on this feedback?	language skills and social interactions? e. Have you made any modifications to your lesson plans or teaching approaches based on student feedback or observations during Minecraft activities? f. How do you ensure that the use of Minecraft remains aligned with the overall goals and objectives of your English language curriculum? g. Can you describe any concerns you may have about potential barriers to incorporating Minecraft into your lesson plans? h. How do you ensure that students who may be less familiar with technology or digital games are able to fully participate and benefit from Minecraft activities in your classroom?

Appendix B:

Ethical Approval: Australian Catholic University

From: Leanne Stirling
To: Laura Scholes
Cc: Kathy Mills; amal.nachar@myacu.edu.au; Res Ethics
Subject: [2021-253E] - Ethics application approved!
Date: Monday, 20 December 2021 8:35:07 AM

Dear Applicant,

Chief Investigator: Assoc. Prof. Laura Scholes,

Professor Kathy Mills
Student Researcher: Amal Nachar,
Ethics Register Number: 2021-253E
Project Title: Digital Game-Based Language Learning in Saudi Arabian Primary Schools
Date Approved: 20/12/2021
End Date: 31/03/2023

This is to certify that the above human ethics application has been reviewed by the Australian Catholic University Human Research Ethics Committee (ACU HREC). The application has been approved for the period given above.

**PLEASE NOTE: THIS APPLICATION HAS CONDITIONAL APPROVAL SUBJECT TO:

THE RESEARCH CANNOT BE STARTED UNTIL ETHICS APPROVAL FROM SAUDI ARABIA IS OBTAINED. PLEASE PROVIDE WHEN OBTAINED.

Continued approval of this research project is contingent upon the submission of an annual progress report which is due on/before each anniversary of the project approval. A final report is due upon completion of the project. A report proforma can be downloaded from the ACU Research Ethics website.

Researchers are responsible for ensuring that all conditions of approval are adhered to and that any modifications to the protocol, including changes to personnel, are approved prior to implementation. In addition, the ACU HREC must be notified of any reportable matters including, but not limited to, incidents, complaints and unexpected issues.

Researchers are also responsible for ensuring that they adhere to the requirements of the National Statement on Ethical Conduct in Human Research, the Australian Code for the Responsible Conduct of Research and the University's Research Code of Conduct.

Any queries relating to this application should be directed to the Ethics Secretariat (res.ethics@acu.edu.au). Please quote your ethics approval number in all communications with us.

We wish you every success with your research.

Kind regards,

Leanne Stirling
on behalf of ACU HREC Chair, Assoc Prof. Michael Baker

Research Ethics Officer | Research Services | Office of the Deputy Vice-Chancellor

Appendix C:

Ethical Approval: Saudi Arabian Schools

Peppermint Primary School – pseudonym

To whom it may concern,

I am researcher Amal Nachar from the Australian Catholic University. I have received ethical clearance from my university in Australia to interview teachers in Saudi Arabia about their experiences teaching English using Minecraft Education Edition. This requires interviews with teachers from Saudi schools. I am seeking a no objection to start the execution in your school.

If you grant ethics approval, please send me a return email that states the following:

"We note that Amal Nachar has ethical clearance from Australian Catholic University to conduct interviews with teachers in Saudi Arabia and we grant ethics approval in our school in Saudi Arabia.

Thank you and kind regards,

Amal Nachar

إلى من يهمه الأمر،

أنا الباحثة أمل نشار من الجامعة الكاثوليكية الأسترالية. لقد حصلت على إذن لجمع المعلومات من جامعتي في أستراليا لإجراء مقابلات مع المعلمين في المملكة العربية السعودية حول تجاربهم في تدريس اللغة الإنجليزية باستخدام ماينكرافت التعليمية وهذا يتطلب مقابلات مع معلمين من المدارس السعودية. أسعى إلى الحصول على الموافقة من مدرستكم لبدء التنفيذ..

إذا تمت الموافقة على جمع المعلومات، يرجى إرسال بريد إلكتروني للعودة ينص على ما يلي:

نلاحظ أن أمل نشار حاصلة على موافقة من الجامعة الكاثوليكية الأسترالية لإجراء مقابلات مع المعلمين في المملكة العربية السعودية ونمنحها الموافقة لبدء التنفيذ في مدرستنا.

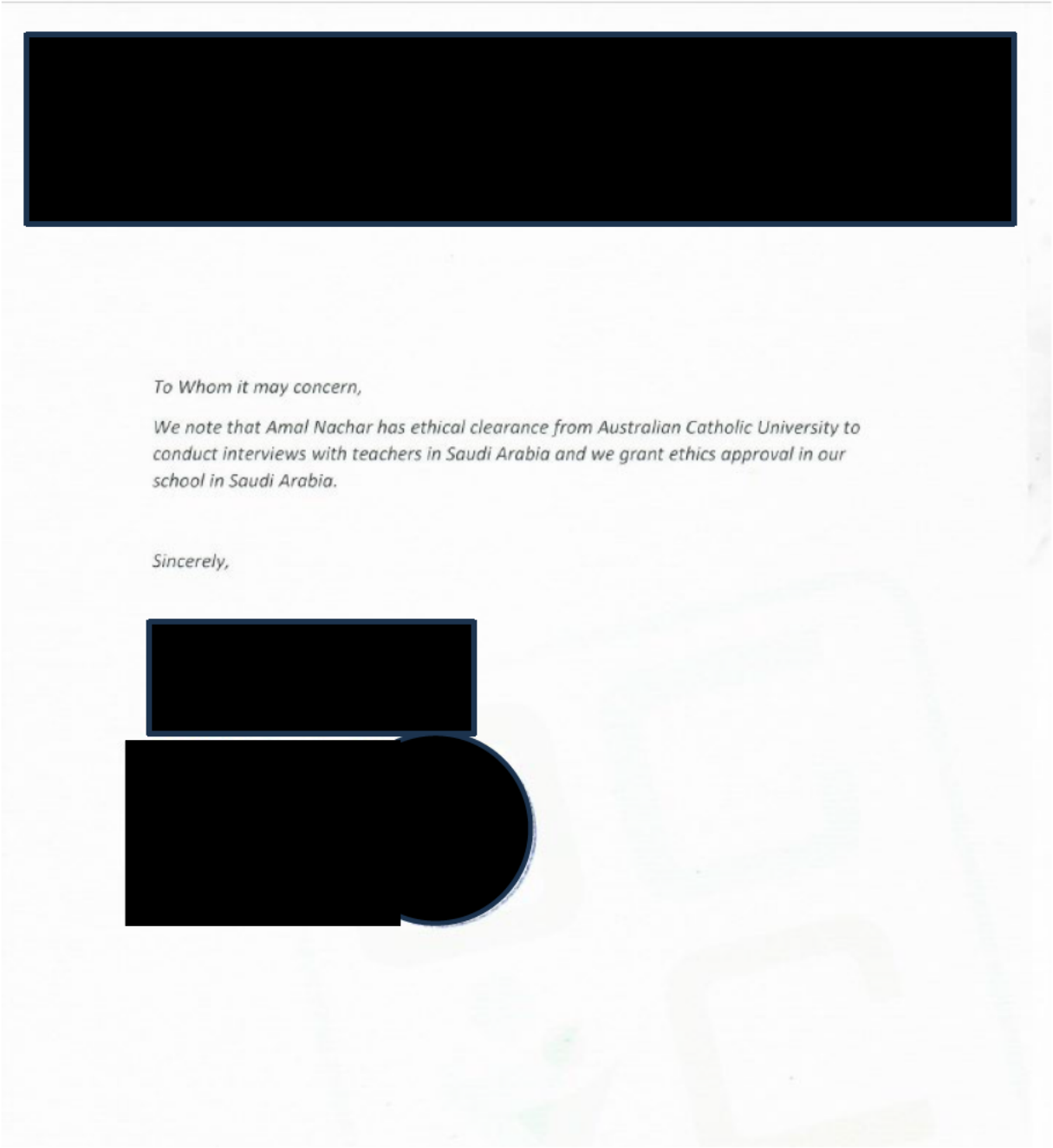
[redacted]

شكرا لكم وأطيب التحيات

أمل نشار

[redacted]

Oakwood Primary School – pseudonym



To Whom it may concern,

We note that Amal Nachar has ethical clearance from Australian Catholic University to conduct interviews with teachers in Saudi Arabia and we grant ethics approval in our school in Saudi Arabia.

Sincerely,

Appendix D:

Participant Consent Form

CONSENT FORM
Copy for Researcher / Copy for Participant to Keep

TITLE OF PROJECT: Digital Game-Based Language Learning in Saudi Arabian Schools: An Investigation of Teachers' Perspectives.

APPLICATION NUMBER: (2021-2311)

(NAME OF) PRINCIPAL INVESTIGATOR (or SUPERVISOR): A/Professor Laura Scholes

(NAME OF) STUDENT RESEARCHER (if applicable): Amal Nachar

I ..... *(the participant)* have read (*or, where appropriate, have had read to me)* and understood the information provided in the Letter to Participants. Any questions I have asked have been answered to my satisfaction. I agree to participate in this study (three interviews that will be audio recorded), realising that I can withdraw my consent at any time (without adverse consequences).

I understand that the research data collected for the study may be published or may be provided to other researchers in a form that does not identify me in any way.

I understand that any peer reviewed education publications that come from the data will only include de-identified data.

NAME OF PARTICIPANT:

SIGNATURE: ..... DATE: .....

SIGNATURE OF PRINCIPAL INVESTIGATOR (or SUPERVISOR): A/Professor Laura Scholes

SIGNATURE: ..... DATE: .....

(and, if applicable)

SIGNATURE OF STUDENT RESEARCHER: Amal Nachar

SIGNATURE: ..... DATE: .....