

CHAPTER IV

FINDING AND DISCUSSION

In this chapter, the researcher presents the findings and discusses the research title. The researcher analyzes data on how non-educational digital games are used in the classroom as teaching media.

A. Research Findings

To address the research questions, the researcher has chosen to examine several studies exploring the utilization of non-educational digital games in educational contexts. Utilizing the library research content analysis method, this section provides an overview of the key findings identified in the studies selected as subjects of investigation. The discussion encompasses the research background, the specific games employed as instructional tools, the teaching methods utilized, and the discernible impacts observed among student participants.

1. Analyzed Research

a. (R1) ON THE EFFECT OF EMPLOYING STORY-BASED VIDEO GAMES ON IRAQI EFL LEARNERS' VOCABULARY RETENTION AND MOTIVATION, by Salman Hintaw Abdulhussein, E Alimardani (2021)

An article investigating the effects of a story-based digital game on student motivation was conducted in conjunction with an assessment of the instrument's effectiveness as a vocabulary learning aid in Iraq. The participants of this study were forty pre-intermediate Iraqi EFL (English as a Foreign Language)

students, who were divided into two groups: an experimental group and a control group. The experimental group received instruction through a digital game, while the control group was taught using conventional English language training.

In this study, the digital game used was *Clifford the Big Red Dog*, a narrative-based game adapted from the famous children's book series by Norman Bridwell. The main characters in the game are Clifford, a large red dog, and his owner, Emily Elizabeth. The game brings learners into various environments such as parks, museums, and school laboratories. In each of these settings, players can interact with different objects by clicking on them. These interactions trigger animations and voiceovers that pronounce the names of the objects, allowing learners to hear and see vocabulary engagingly and contextually. Through this process, the game supports learners' vocabulary acquisition by exposing them to words within meaningful contexts and story-driven interactions.

During the learning sessions, students in the experimental group were given opportunities to actively participate in the digital game. They explored the game environment and searched for vocabulary items hidden within the storyline. The learning process was not passive; students had to find the vocabulary themselves and learn how each word was spoken. The instructor played an essential role in this process by explaining the vocabulary found in the game. Teacher guidance was still necessary even if students were already familiar with the names, forms, or sounds of some words, in order to ensure comprehensive understanding and learning outcomes.

After the treatment, both groups took a post-test using the same vocabulary from the pre-test and also completed Gardner's Motivation Test. The treatment lasted for fifteen sessions, with each session lasting twenty minutes. The results of the study showed that the use of the digital game had a positive impact on students' motivation and vocabulary retention. The experimental group, who engaged with the game, outperformed the control group in both areas. Specifically, the experimental group achieved a higher mean score in motivation ($M=4.10$) and vocabulary retention ($M=61$), while the control group scored lower (motivation: $M=2.30$; vocabulary retention: $M=53$). These results suggest that the use of a narrative-based digital game, such as Clifford the Big Red Dog, can significantly improve EFL learners' motivation and vocabulary acquisition compared to traditional teaching techniques. The study highlights the potential benefits of integrating digital game-based learning into language classrooms.

b. (R2) THE IMPLEMENTATION OF MOBILE LEGEND GAME TO INCREASE VOCABULARY AND LEARNING ACTIVENESS OF FIFTH GRADE STUDENT'S AT INSAN MANDIRI CENDEKIA PALEMBANG, by Hasan Sadiqin, Indawan Syahri, Tahrhun (2023)

The authors of this article found issues with the English exam results among fifth-grade students at Insan Mandiri Cendekia Elementary School in Palembang. Specifically, half of the students, amounting to 51%, did not meet the minimum passing criteria. According to the teachers, this problem stemmed from

low motivation and a lack of interest in learning English, coupled with weak vocabulary skills among students.

To address these issues, the study introduced a digital game-based learning strategy by leveraging the popularity and accessibility of *Mobile Legends*, a multiplayer online battle arena (MOBA) game commonly played by Indonesian youth. The game is available on smartphones and widely accessible through the internet, making it a relevant and familiar platform for students. The idea was to transform a game that students already enjoyed into an interactive and engaging learning tool. By integrating *Mobile Legends* into the curriculum, teachers aimed to not only increase student motivation but also enhance their vocabulary acquisition through contextual and meaningful experiences.

Mobile Legends, which requires ten players divided into two teams, involves strategy, teamwork, and communication to succeed in breaching and destroying the opponent's base. These cooperative elements are believed to encourage communication, and by setting English as the primary language during gameplay in the classroom, teachers hoped to foster more opportunities for students to practice English naturally. Additionally, the game's character-building system, where players select items and abilities with English names and descriptions, was used to expose students to vocabulary in an applied and relevant manner. These elements were intended to narrow the gap between students and the English language by making it part of an environment they were already comfortable and excited to engage. It is only mentioned that the learning process included two

sessions where *Mobile Legends* was used as a learning tool, followed by a vocabulary test.

The result of the implementation showed a significant improvement in students' vocabulary achievement. The percentage of students meeting the minimum passing standard increased from 49% to 89%, indicating a positive impact of using the digital game. Additionally, students' enthusiasm towards learning also rose sharply, from 48% to 90%, as observed through interviews and classroom observations. Students responded positively to the use of digital games, stating that learning English became more enjoyable and relatable. This finding demonstrates that digital game-based learning, especially when it involves platforms that students are already familiar with, can be an effective and motivating tool for improving vocabulary in language classrooms.

**c. (R3) THE EFFECT OF MULTIPLAYER VIDEO GAMES ON
INCIDENTAL AND INTENTIONAL L2 VOCABULARY
LEARNING: THE CASE OF *AMONG US*, by José Ramón
Calvo-Ferrer, Jose Belda-Medina (2021)**

This article focuses on assessing the role of multiplayer digital games, specifically *Among Us*, in improving vocabulary learning for secondary school students studying English as a foreign language (EFL). The research explores how gameplay can support both intentional vocabulary acquisition—learning new words deliberately through focused study—and incidental vocabulary acquisition—learning new words as a byproduct of engaging in the game. The study aims to examine the interplay between the interactive, social nature of *Among Us*

and language development, to determine whether this form of gameplay can enhance students' vocabulary learning in a meaningful and effective way.

The research involved 54 Spanish students enrolled in the first year of Bachillerato (11th grade), ranging in age from 16 to 18 years, all of whom had an average elementary proficiency in English. Initial findings revealed that participants who actively engaged with new vocabulary demonstrated greater retention compared to those who were merely exposed to the words. Additionally, it was observed that deliberate input facilitated incidental learning among peers, underlining the beneficial impact of repetition on vocabulary retention. This study enhances our understanding of how digital game-based learning environments can effectively foster language acquisition, particularly in terms of vocabulary development within interactive and engaging contexts.

In this study, *Among Us*, a popular online multiplayer social deduction game, was used as a tool to facilitate vocabulary learning. Social deduction games, such as *Among Us*, are a genre of multiplayer games where players must employ reasoning, deception, and communication to achieve their objectives. Players are typically divided into two groups: one group has hidden information (e.g., impostors), while the other group must figure out who those hidden players are (e.g., crewmates). The key mechanics of these games revolve around discussion, voting, and sometimes bluffing, with players attempting to convince others of their innocence or expose the guilty party. Communication plays a central role, and engaging in conversations using a specific language is one of the most effective ways to master that language.

Among Us is a free-to-play online multiplayer digital game that experienced a significant surge in popularity, particularly during the COVID-19 pandemic, with over 350 million downloads in 2020. The game involves players assuming roles as either crewmates or impostors aboard a spaceship, engaging in quick rounds of gameplay. Crewmates complete various duties, while impostors aim to sabotage their efforts. The game's design encourages communication through its built-in text chat, where players discuss and vote on suspicious activities. The emphasis on social interaction, deception, and teamwork provides an immersive setting for language acquisition and practice, particularly in vocabulary retention and contextual understanding.

A vocabulary pre-test was administered to identify eight unknown words likely to appear in the game, ensuring all participants began with a similar understanding of the target vocabulary. Students were randomly assigned to different groups and learning conditions. Within each group, half of the players received a list of phrases containing the target words, which they were encouraged to use meaningfully during gameplay through written interaction. The students then engaged in two gameplay sessions of *Among Us*, which facilitated both intentional learning, where students with vocabulary lists aimed to use these words deliberately, and incidental learning, where all players were exposed to vocabulary through gameplay, promoting unintentional learning as they encountered and interacted with the words in context.

After completing the gameplay sessions, students took a vocabulary test to assess their learning gains related to both intentional and

incidental vocabulary acquisition. The results from the post-test, compared to the pre-test, measured vocabulary retention and understanding.

The research findings indicate that students who actively utilized prepared vocabulary exhibited a higher frequency of encounters with new language compared to those who only received input. However, this does not imply that passive learners did not show development. While the level of exposure and interaction differed, passive learners also experienced growth in their language skills through various forms of implicit learning and contextual understanding. This highlights the importance of both active and passive engagement in language acquisition processes, suggesting that different approaches can yield beneficial outcomes for learners at varying proficiency levels.

This study demonstrates that incorporating a digital game like *Among Us*, which requires players to use a specific language, significantly aids foreign language learning. However, this approach is most effective when supported by educators to ensure that the learning process has a clear direction. By integrating gaming elements with structured guidance from instructors, learners can enhance their engagement and retention of new language concepts, ultimately leading to more effective language acquisition outcomes.

**d. (R4) LANGUAGE LEARNING IN DIGITAL GAME
MINECRAFT: A MIXED METHODS STUDY OF JAPANESE
EFL LEARNERS, by Jeremy Stewart White (2023)**

This dissertation, conducted by Jeremy Stewart White at Kyoto University in 2023, addresses the low English proficiency levels among Japanese

university students, despite years of formal education. Motivated by the lack of student enthusiasm, often stemming from traditional, monotonous teaching methods, White proposed an innovative solution: a hybrid teaching method that combines conventional teaching with modern techniques, specifically integrating the digital game *Minecraft*. White hypothesized that incorporating digital games, inherently engaging and immersive, could enhance English education by improving student motivation and vocabulary acquisition.

The research involved six participants (four male and two female students) who attended 11 weekly sessions for a semester. These sessions included pre-treatment, post-treatment, and game-based learning activities. Within the game, participants were tasked with constructing a university and were required to communicate exclusively through the in-game text-based chat, using English as the sole medium of communication. Data were collected from multiple sources, including pre- and post-tests, interviews, and analysis of the participants' chat logs. The study aimed to assess changes in participants' vocabulary as they engaged with the game.

Initially, the in-game chat activity was minimal as participants focused on learning the game mechanics and completing tasks. However, as the sessions progressed, the chat activity became more active. The analysis revealed a noticeable improvement in participants' vocabulary, as reflected in their chat interactions, indicating significant language development compared to their initial proficiency levels.

In this study, *Minecraft*, the popular sandbox simulation digital game, was used as a teaching media. In *Minecraft*, players can create structures and objects using blocks, which can be obtained through mining or crafting with available materials. The game has two primary modes: Survival and Creative. In Survival mode, players start with nothing and must gather resources, craft tools, and fend off enemies. The ultimate goal is to reach the Netherworld and defeat a dragon. In contrast, Creative mode allows players to focus on building without enemies, providing a more relaxed environment.

Creative mode was chosen for this research for two key reasons. First, it includes an in-game chat feature, allowing participants to communicate exclusively in English. Second, the game can be hosted on a private server within a campus environment, bypassing any technical limitations caused by firewalls or network restrictions. This allowed the research to proceed without disruption, ensuring all participants could engage in the digital game effectively.

The study took place over 11 weekly sessions. During the first week, participants were explained the study's objectives in both English and Japanese, followed by a Q&A session to clarify any questions. In the second and third weeks, participants underwent orientation activities, including account creation, avatar setup, and a training course on *Minecraft*. Once the orientation was completed, participants were given the freedom to explore and play within the game.

From the fourth to the tenth week, weekly game sessions were conducted. During these sessions, participants collaborated to recreate various campus buildings within the game, completing one structure before receiving

instructions for the next. Participants were required to use the in-game chat feature exclusively in English for communication. No additional guidance on communication strategies was provided, aside from the requirement to use English.

To support vocabulary learning, the researcher provided participants with two vocabulary sheets. The first sheet contained vocabulary related to building structures, while the second included terms relevant to *Minecraft*. Both sheets allowed participants to add new vocabulary and include translations or explanations in their native language for reference.

The research results demonstrate the effectiveness of the hybrid teaching method, which combines traditional teaching techniques, such as vocabulary sheets, with modern digital game-based learning. The method proved beneficial for students' English proficiency by reducing anxiety compared to traditional classroom settings. The relaxed and student-centered learning environment provided by *Minecraft* allowed students to use English more confidently and freely.

Collaborative tasks played a significant role in promoting consistent communication. Participants were required to interact regularly during the game, which contributed to the increased use of English. The study found that students frequently used vocabulary from the 2,000 most common English words during their in-game interactions. Notable progress was observed in one participant who initially focused on mastering the game controls. Over time, this participant became a leader in the in-game conversations, demonstrating substantial language development.

The combination of reduced anxiety, authentic language use, and an engaging, enjoyable environment was the key factor in improving the students' English skills. However, the study also identified a limitation: the method did not offer opportunities for verbal communication practice, as all interactions took place through text-based chat.

e. (R5) ENHANCING STUDENTS' MOTIVATION IN THE EFL CLASSROOM THROUGH *LIFE IS STRANGE*: A DIGITAL GAME-BASED LEARNING SCENARIO PROPOSAL, by Angie Alejandra Pulido Salcedo (2023)

In a dissertation conducted by Angie, the impact of a commercially off-the-shelf (COTS) digital game, *Life is Strange*, on students' motivation and engagement in language learning was investigated. The research also examined the feasibility and practicality of using a digital game within a traditional classroom environment through task-supported language teaching. Angie's motivation for this study stemmed from the inefficacy of traditional English teaching methods, which often fail to engage students. She drew inspiration from existing research on educational games and their potential to enhance learning outcomes. Given the widespread popularity of video games among young people, she selected gaming as a teaching tool. The focus of her research was on the importance of social interaction and contextual learning in language acquisition, leading her to choose *Life is Strange* for the study.

In *Life is Strange*, players make decisions for a character, with each choice influencing the story's outcome. This interactive storytelling format

immerses players in a rich narrative while offering implicit lessons in culture and social dynamics, making narrative-driven games an effective media for language learning. The participants in this study were 4th-grade ESO students, aged 15–16, from Spain. The research took place in a traditional classroom setting, assessing the viability of game-based learning within established educational environments rather than through specialized setups.

The narrative-driven digital game genre was chosen for this study due to its unique characteristics and its potential as a tool for language learning. In this genre, players control a character whose decisions shape the story's progression. These decisions can have minimal or significant effects on the narrative, and sometimes even alter the ending. Narrative-driven games encourage critical thinking skills as players evaluate cause-and-effect relationships, character motivations, and broader story dynamics. Players are often required to solve puzzles or riddles within the story, fostering deductive reasoning and analytical thinking. Additionally, narrative-driven games promote creativity by giving players control over the character's actions and decisions. This active participation distinguishes them from passive media like movies, where the viewer has no control over the storyline. In narrative-driven games, players are engaged in a dynamic, participatory experience, which creates a more immersive learning environment, ideal for language acquisition (Salcedo, 2023).

Life is Strange, developed by Dontnod Entertainment, was chosen for this study due to its engaging and emotional narrative. The game, released in 2015, follows the story of Maxine "Max" Caulfield, a student at a photography

school who discovers her ability to rewind time. Set in the fictional town of Arcadia Bay, Oregon, the game unfolds over five episodes. The first episode, *Chrysalis*, was selected for the study as it introduces the main characters and establishes the setting, offering rich dialogues and story elements ideal for language learning. The episode's focus on character development and world-building makes it particularly suited for educational purposes.

The learning scenario, titled *Life is Strange: A Journey Through Emotion*, was designed for a 4th-grade ESO Foreign Language class. The aim was not only to teach English but also to foster self-awareness and empathy among students. The integration of digital devices was part of the school's initiative to enhance digital literacy. In the first session, the teacher introduced the project using images from the animated film *Inside Out*, which illustrated the workings of human emotions. Students engaged in brainstorming activities on emotional well-being and created lists of emotions paired with corresponding colors. They also drew hearts using the colors they selected.

In the following sessions, students played *Life is Strange*, starting with the first episode. They focused on character behaviors and emotion-related vocabulary, then analyzed the characters' emotional traits using Padlet. This process continued with each session introducing a new aspect of emotional processing, storytelling, and narrative techniques such as past tense and time linkers. Students also used art to express emotions, created alternative endings for the episode, and participated in a final exhibition showcasing their work.

The study successfully met its primary goal of increasing student motivation and engagement. The immersive nature of *Life is Strange* captured students' interest, leading to high levels of enthusiasm and participation in learning activities. The interactive and narrative-driven elements of the game created a more engaging and dynamic classroom environment. Additionally, students were able to deepen their language skills through contextual learning, interacting with the game's narrative and completing tasks related to the story. The experience allowed students to connect language learning with real-life scenarios, improving both their vocabulary and language comprehension. While the study demonstrated the potential of digital games as educational tools, further research is required to assess the long-term effects of this approach. Additionally, more realistic scenarios should be developed to fit within the time constraints of classroom settings, maximizing the effectiveness of game-based learning in the future.

f. (R6) THE EFFICACY OF GENSHIN IMPACT GAME-BASED LEARNING FOR ENHANCING STUDENTS' ENGLISH VOCABULARY: A QUASI-EXPERIMENTAL STUDY, by Muhammad Pierre Persada Dien (2023)

Dien's article aimed to investigate the impact of the digital game *Genshin Impact* when applied to a learning environment. With advancements in technology shaping the modern era, the study sought to explore digital shifts in education. Digital games, particularly *Genshin Impact*, were chosen for their accessibility and mobility. The game's availability across various devices, such as

smartphones and tablets, aligns with the vision of a classroom that is not confined by space and time.

The study was conducted at SMP Islam Terpadu At-Taqwa in Surabaya, utilizing a quasi-experimental design. Seventh-grade students were divided into two groups: an experimental group and a control group. Before the intervention, both groups were given a pre-test to establish baseline data for comparison with the post-test results. The experimental group received English lessons integrated with playing *Genshin Impact*, while the control group followed conventional language teaching methods.

The findings highlighted clear differences in outcomes, enthusiasm, and engagement between the two groups. The control group displayed typical, moderate responses to their lessons, whereas the experimental group demonstrated significantly higher levels of motivation and active participation. The improved outcomes in the experimental group could be attributed to the engaging and enjoyable aspects of *Genshin Impact*, a factor that naturally appeals to students and breaks the monotony often associated with traditional teaching methods.

This research underscores the potential of integrating popular digital games like *Genshin Impact* into the classroom to enhance motivation and learning outcomes, suggesting a promising direction for future digital-based educational strategies.

Genshin Impact is a cross-platform game playable on multiple devices, featuring crossplay functionality that enables seamless interaction across platforms. Developed and published by *MiHoYo*, now known as *HoYoverse* for

international markets, in 2019, the game introduced a paradigm shift in the mobile gaming industry. By delivering console-level quality in a mobile game, *Genshin Impact* set a new standard, transforming the perception of mobile gaming, which was previously regarded as lacking in depth. The game has since established itself as a landmark achievement among players and developers alike.

As an action RPG with an open-world design, *Genshin Impact* offers a seamless, interconnected world without loading screens between areas. Players can select from a variety of text languages, including Indonesian and English, as well as multiple audio options such as English, Korean, Mandarin, and Japanese, ensuring accessibility for diverse linguistic preferences and proficiencies.

The game begins with the player encountering Paimon, a small floating guide who directs them to Mondstadt, a castle town that serves as the initial hub of the narrative. Accompanied by Paimon, players interact with a wide array of characters and engage in numerous storylines as they explore the expansive world of Teyvat.

The game's combat system utilizes a party-based mechanism, allowing players to switch between four characters in real time during battles. With seven elemental attributes that interact dynamically, the system encourages creativity in both character development and combat strategy, enabling players to tailor gameplay to their preferences.

In the context of English language learning, *Genshin Impact* offers significant pedagogical potential, particularly through its richly developed narrative. The game includes an extensive volume of main and side quests, with the main

storyline featuring fully voiced dialogues performed by professional voice actors. This dual-mode presentation, text and audio, allows learners to engage with authentic English language input. Additionally, learners can opt for English audio paired with Indonesian subtitles, fostering comprehension through contextual cues. The immersive and narrative-driven nature of *Genshin Impact* makes it a valuable tool for interactive and effective language acquisition.

In this study, the learning approach focused on playing digital games, with the teacher serving as a facilitator and instructor. During gameplay, students were instructed to pay attention to vocabulary related to real-world contexts, such as cooking, natural physics, and social interactions within the game. These elements were presented in various forms, including text, narrative, tasks, and missions. However, the article does not provide further details regarding the specific methods or strategies employed to integrate digital games into the teaching process.

The results of implementing *Genshin Impact* in this study reveal significant differences between the experimental and control groups. In the pre-test, both groups achieved average scores between 50 and 55, indicating that the students' mastery of the tested vocabulary, previously taught in class, was adequate but not yet satisfactory. However, after the treatment and the subsequent post-test to measure their vocabulary skills, the experimental group displayed a substantial improvement, with scores ranging from 70 to 90, far exceeding the pre-test averages. In contrast, the control group showed minimal change, with some students demonstrating only a 0.01% improvement, while others exhibited no progress at all.

These findings underscore the significant impact of game-based learning on students' achievement in this classroom setting. Observations further highlighted that the application of digital games fostered higher levels of engagement compared to the traditional teaching methods employed with the control group. The experimental group also demonstrated superior vocabulary mastery, as evidenced by their ability to recall and accurately use specific vocabulary in real-world contexts.

g. (R7) *THE LEGEND OF ZELDA: OCARINA OF TIME AND VOCABULARY ACQUISITION IN A 9TH GRADE NORWEGIAN CLASSROOM*, by Hedda Louise Strand Ludvigsen (2022)

This thesis by Hedda aimed to investigate the utility of the adventure game *The Legend of Zelda: Ocarina of Time* as a tool to support vocabulary acquisition among 9th-grade students in Norway in 2022. While numerous studies have explored the use of digital games in education, most have focused on serious games, those specifically designed for educational purposes, rather than commercial off-the-shelf (COTS) games created for entertainment. Recognizing the potential of COTS games, Hedda sought to examine how effective an entertainment-based digital game could be in education. The chosen game is *The Legend of Zelda: Ocarina of Time*, part of a longstanding series, and it follows the adventures of the character Link.

In this study, Hedda worked with 50 students in the 9th grade in Norway. The participants were divided into two groups of 25: an experimental

group that played the game for learning and a control group that read a text based on the game's story. A pre-test was conducted to measure the students' initial vocabulary levels, followed by two post-tests, one test right after the treatment and another one a week after, to assess the retention of the vocabulary.

The findings showed that in the first post-test, both groups demonstrated similar improvements. However, by the second post-test, the experimental group achieved significantly higher scores than the control group.

The Legend of Zelda: Ocarina of Time is the fifth installment in the *Legend of Zelda* series, which began in 1986. Released in 1998, the game has become a cherished part of many childhoods, including that of the researcher, Hedda. It is the second-best-selling game in the series, surpassed only by *The Legend of Zelda: Breath of the Wild*.

The story follows Link's journey of self-discovery, spanning seven in-game years, during which players witness his growth from childhood to young adulthood. The game explores themes such as identity and difference, which remain relevant to modern society. The language in the game alternates between modern English and classic English, including Shakespearean styles, particularly in dialogue involving characters associated with wisdom, age, or authority. This linguistic variety exposes players to a diverse vocabulary, enriched through dialogues and monologues essential for understanding the storyline.

Based on player data, completing the game typically takes 25–36 hours, depending on individual play style. However, for this educational study, only the first 25 minutes of gameplay were used. A notable challenge in implementing

games like *Ocarina of Time* in the classroom is the financial cost. As a game designed for consoles, additional expenses include purchasing the game itself and acquiring compatible hardware, making widespread adoption more complex.

The learning phase in this study was straightforward. It began with the division of students into groups, which were selected randomly, followed by a pre-test to assess their baseline vocabulary knowledge. Subsequently, the instructor conducted a briefing about the game, explaining what the students would be playing and the duration of the gameplay.

In this learning approach, the game served as the sole focus of the process. Students played independently, absorbing the vocabulary presented in the game without direct guidance or intervention from the instructor. During the 25-minute gameplay session, students took on the role of Link, with the freedom to explore the game world, wander around the town, or follow instructions from NPCs to complete dungeons within the game.

The results of this study revealed several noteworthy findings. In the first post-test, all students demonstrated similar improvements. This was attributed to the fact that the vocabulary tested in the pre-test was of a higher level than their usual classroom progress in 9th grade, and these vocabulary items were encountered both in the game and in the text provided.

However, significant differences emerged in the second post-test. A clear distinction was observed between the two groups regarding their retention and further improvement of vocabulary. In the control group, only a small number of students maintained or improved their scores from the first post-test, making

these students a minority. In contrast, the experimental group showed a majority of students retaining or achieving higher scores than in the first post-test.

This disparity is likely due to the way vocabulary was presented in the different media. While the text-based group encountered the vocabulary solely in linguistic form, the game-based group experienced it within a multimedia context, incorporating voices, images, and sound. This multimodal presentation provided richer, more comprehensive exposure to the vocabulary, leading to better retention and deeper understanding compared to reading a narrative text alone.

**h. (R8) THE EFFECTS OF AN MMORPG ON THAI EFL
UNIVERSITY STUDENTS' READING FOR MAIN IDEAS,
by Wanwisa Changkwian, Suksan Suppasetseree (2023)**

An article conducted in Thailand in 2023 explored the potential of using MMO digital games as tools to improve students' reading skills. Acknowledging the relatively low English reading proficiency of Thai students compared to other non-native English-speaking countries, the researchers sought alternative methods to enhance current teaching systems and raise students' standards. They focused on *Defense of the Ancients (DOTA 2)*, an MMO MOBA game. With its interactive gameplay and extensive social opportunities, *DOTA 2* was expected to increase student engagement in learning. Its PC platform and the abundant flavor text available in English made it a suitable candidate for language instruction. Moreover, the researchers argued that *DOTA 2* allows educators to tailor the reading material to match the students' proficiency levels.

The participants in this study were 35 university students from Nakhon Ratchasima, Thailand. The researchers employed a time-series quasi-experimental design. A lesson plan, adapted from the university's curriculum for teaching reading for main ideas, was transformed into an online learning format integrated with the MMORPG environment.

The study's findings indicated a notable improvement in the students' ability to read for main ideas, demonstrating the potential of MMO digital games like *DOTA 2* as effective tools for enhancing reading skills, engagingly and interactively.

DOTA 2, a massively multiplayer online role-playing game (MMORPG) with multiplayer online battle arena (MOBA) elements, served as the primary tool in this study. MMORPGs are characterized by numerous players connecting online to interact while role-playing, whereas MOBAs focus on two teams competing in an arena to achieve a predetermined winning condition.

DOTA 2 originated as a mod for the game *World of Warcraft 3* and was later developed into a standalone sequel by Valve in 2009. By 2017, it had become one of the most popular games on the Steam platform, consistently ranking at the top for concurrent daily players.

As a hybrid MMO MOBA, *DOTA 2* fundamentally involves players forming teams, either prearranged or randomly matched online, to compete in an arena and fulfill the game's victory conditions. However, unlike traditional MOBAs, *DOTA 2* features a creative mode, which allows players to design custom

maps and gameplay scenarios. This mode draws inspiration from its Warcraft roots, which emphasized open-world exploration rather than confined competitive battles.

The creative mode was utilized for this study. Educators designed a custom map with integrated reading instructions tailored to the lesson plan. This map aimed to engage students in reading tasks while leveraging the immersive and interactive nature of the game to enhance their reading skills effectively.

The learning process began with a pre-test to assess the initial reading proficiency levels of the students. Before engaging with the game, students participated in a briefing session where they were introduced to the educational objectives of using the game as a learning tool. They were provided with instructions on how to navigate the game and access the pre-designed materials. Additionally, students were guided on the lesson's primary focus, which was identifying main ideas, and were taught techniques they could apply during gameplay.

Once the learning session commenced, students entered a custom map created by the instructor. Within the game, they encountered several text-based instructions specifically designed to support the lesson. Students were required to read and comprehend these texts to identify the main ideas, which were essential for progressing through the scenarios. The texts were carefully aligned with the syllabus and tailored to match the students' proficiency levels.

The map also featured other players, encouraging interaction among students. This collaborative environment allowed them to discuss the texts and collectively work towards completing the scenarios. To further motivate

engagement, in-game rewards such as gold coins were provided when students successfully understood the texts and completed the assigned tasks.

After the gameplay session, students received feedback on their performance in the tasks. A post-gameplay discussion was held to reflect on their learning experiences, allowing them to consolidate their understanding of the material. Finally, an assessment was conducted to evaluate the students' progress and measure the impact of the experiment on their reading abilities.

The study demonstrated significant improvements in the students' reading abilities. The post-test results revealed an average score increase of approximately 6.657 points compared to the pre-test, indicating that the use of MMORPGs as an instructional tool is highly effective for enhancing reading comprehension.

In addition to assessing test scores, the study also examined students' responses to this learning approach. A questionnaire conducted among participants revealed overwhelmingly positive feedback. Many students expressed that learning through a game was highly enjoyable and engaging. They noted that the gaming approach provided a deeper understanding of the material compared to traditional methods.

During interviews, students reported heightened motivation and engagement, which they attributed to their improved post-test scores. The interactive features of the game played a pivotal role in the learning process, allowing students to explore the material more actively. This study was conducted during the COVID-19 pandemic in Thailand, a time when most learning occurred

online. Students emphasized that the game-based approach significantly enhanced their overall learning experience during this challenging period.

**i. (R9)EMPOWERING LEARNERS WITH ROLE-PLAYING
GAME FOR VOCABULARY MASTERY, BY Aam Ali
Rahman, Anggi Angraeni (2020)**

This article was conducted by Aam and Anggi in Indonesia in 2020.

Due to the thought that there should be a renewal in the techniques and media used in teaching English vocabulary in Indonesia, they believe that the commonly used techniques and media, such as Look and Remember, Word-Rehearsing, and flashcards, only help students to pass exams—in other words, they have no long-term effect. Both argue that vocabulary lessons that only stay in the students' memory for a short time are simply a waste of time. Their reasoning is based on the idea that new methods that offer greater efficiency and new media that can boost students' motivation are necessary. These two factors, efficiency and motivation, are seen as highly crucial in vocabulary learning.

They saw a potential solution in the increasing number of school laboratories equipped with computers across Indonesia. Computers were also chosen as a medium because personal mobile phones are often restricted from use during lessons by school regulations in the country. By utilizing computers, they aimed to implement a game-enhanced learning method, a fairly popular approach globally, yet underutilized in Indonesia due to limited resources, through the use of a Role-Playing Game (RPG). They believe that this genre, in which players take on the roles of characters within the game, can enable students to interact with

functional, native English in a more immersive way. The use of this method and media is considered effective because it delivers both content and storyline, allowing students to learn naturally through the game's progression. Moreover, it is highly motivating, as digital games are perceived to be very appealing to school-aged learners.

This study is a qualitative research project employing a quasi-experimental design. A total of 65 students participated in the research. Twenty-five students were selected as testers to try out the assessment instruments that would later be used on the main group receiving the treatment. The remaining 40 students were selected from the same grade and school, under the condition that they had no difficulties operating a computer and had never played or been exposed to the game used as the media in this study. These 40 students were divided into two groups: experimental and control. Each group received vocabulary instruction using different methods throughout 10 sessions, two of which were tests designed to assess students' progress before and after the intervention. Both groups were given pre-tests and post-tests to observe the changes brought about by the treatment. In addition, the students were interviewed to gather their opinions on the method and media used in the study.

The results of this study show that learning through computer-based RPG digital games has a more positive effect compared to traditional methods. The interviews also revealed that students felt the media forced them to understand the vocabulary implicitly, which made them more engaged and motivated than in conventional learning settings.

The video game used in this study is *Nancy Drew: The Creature of Kapu Cave*, developed by HerInteractive in 2006. The researchers selected this game because it provides audiovisual aids for players. By playing the game, students are exposed to contextual, native English. Additionally, they do not need to worry about understanding the native accent in the audio, as it is supported by on-screen text that visually represents the spoken dialogue. The game follows the story of Nancy Drew, a young detective attempting to solve a mystery in Hawaii. Since the objective of the game is to uncover the mystery, players are required to understand conversations and texts within the game. They interact with non-playable characters (NPCs) to obtain clues that lead them toward solving the case. Players not only read but must also choose Nancy's dialogue options during conversations with NPCs to acquire the necessary information. This is where their language skills are tested and trained.

Nancy Drew: The Creature of Kapu Cave is one title in the *Nancy Drew* game series, which began in 1998 with *Nancy Drew: Secrets Can Kill*. The series has released over 30 titles, offering players a wide variety of cases, such as *The Curse of Blackmoor Manor*, a mystery set in a mansion in the UK, and *Shadow at the Water's Edge*, which takes place in Japan and includes supernatural elements. This game is categorized as an adventure RPG, where players take on the role of the main protagonist and follow the story through a narrative primarily by dialogue and written content. In addition to conversations, players can also find clues by solving puzzles embedded in the game. This game is popular among players who enjoy puzzles and mysteries. It is also known for being family-friendly, offering

adjustable difficulty levels, and containing no violence in its problem-solving gameplay.

The study showed that the group receiving treatment through the RPG game performed significantly better than the group taught using traditional methods, as evidenced by the results of the post-test. These findings demonstrate that RPG digital games can be highly beneficial for vocabulary learning. This result is attributed to the RPG elements that provide meaningful context, which supports vocabulary acquisition by allowing students to learn implicitly while engaging with in-game tasks and narratives.

The improvement in student learning outcomes was also supported by high levels of engagement and motivation. The interactive and contextual nature of RPG digital games led to increased student engagement. Meanwhile, motivation was enhanced by the use of an innovative approach to learning. Many students reported feeling more motivated because they initially viewed games purely as a form of entertainment. However, it is worth noting that a few students responded negatively for the same reason—they were unwilling to combine learning and gaming on such an integrated level.

**j. (R10) THE EFFECTS OF A GAME-ENHANCED
LEARNING INTERVENTION ON FOREIGN LANGUAGE
LEARNING, by Seda Musaoğlu Aydın, Nur Akkuş Çakır
(2022)**

The fact that many gamers today interact with foreign languages and cultures through various games served as the basis for this article. Seda and Nur

viewed this phenomenon as a strong potential for the use of COTS (Commercial Off-The-Shelf) games as effective language education tools, as these games can offer learners numerous opportunities to develop language skills, including vocabulary, reading, and listening, and in some cases, even speaking and writing. However, they also acknowledged that the use of such games in education does not always lead to success, as it heavily depends on the ability of the teacher. The researchers argue that, in digital game-based learning, the most critical component is not the gameplay itself, but rather the sessions designed around the game.

This study focuses on a PCaRD-based game-enhanced learning intervention aimed at improving students' language skills and their L2 Motivational Self System (L2MSS). Play Curricular activity Reflection Discussion (PCaRD) is a teaching model built around the game, rather than within the game itself. The goal of PCaRD is to use digital games in a way that enhances students' interest, willingness, and motivation toward what they are learning.

An embedded mixed-methods research design was employed in this study. The participants were 76 EFL students, aged between 18 and 21, enrolled in the English preparatory program at a private university in Turkey. All participants considered themselves to be technologically proficient; 68% identified as regular gamers, while the rest reported playing only occasionally. The students were divided into experimental and control groups, and both groups were given pre-tests and post-tests to assess the effects of the learning intervention on their language skills. In addition, interviews were conducted to gain deeper insight into the participants' perceptions of the learning method.

The video game used this time is *Life is Strange*. Unlike R5, a dissertation by Angie which focused on a single episode, this research selected all five episodes of the game. The learning system was also slightly similar, as it was adapted to follow the PCaRD model.

The learning in this study was based on the PCaRD method, which stands for Play, Curricular Activity, Reflection, and Discussion. The Play session serves as an introduction to the game, where students play without any specific goals or assigned tasks. In this session, students not only play individually but can also interact with the teacher and classmates. The Curricular Activity session is where the teacher connects the learning objectives from the curriculum with the game, adapted through case-based or problem-based activities. The final sessions are Reflection and Discussion, in which students are expected to share their experiences from playing the game, now infused with curricular goals. This sharing can be done individually or in groups, and together with the teacher, they discuss how the following lessons will be conducted.

The experimental group that received the game-based learning consisted of 38 students, who underwent the treatment over a period of 10 weeks. This study utilized all 5 episodes of *Life is Strange*, with the estimated playtime totaling around 15 hours to complete the story. Following the PCaRD method, two activities were prepared for each episode. Weekly activities were divided into three parts. In the first part, students focused on grammar; the second part focused on reading; and the final part involved a reflection phase, where students reflected on

their language abilities and motivation within the L2 Motivational Self System (L2MSS).

During weekly meetings, students reported on their gameplay experience with a specific episode. At the end of each class, the teacher provided instructions on the episode that would be discussed in the following week. Students were required to play the designated episode at home before the next class. There were no restrictions on how long they could play or whether they played unrelated games.

Each week, the teacher conducted activities or tests related to the episode the students had played, helping them retain the story and in-game events. These sessions began with grammar-focused tasks, followed by reading, and concluded with checking the students' L2MSS.

This study showed that both groups experienced significant improvement. However, no significant difference was observed between the two groups, indicating that neither method was superior to the other; instead, both proved to be highly beneficial for students. In addition to the test results, the motivational questionnaire results for the experimental group showed significantly higher scores than the control group in terms of cultural interest and attitudes toward the target language community. The interviews also revealed that students had a positive response to the use of COTS games in learning. The study indicates that while the media used plays an important role, the teacher's role as the instructional designer remains more crucial.

Various studies have been conducted regarding the use of non-educational games in the classroom environment for teaching English. To make it easier, here is a table summarizing the 10 studies mentioned above.

Table 4.1. Summary of the Ten Studies on the Use of Non-Educational Games in EFL Classrooms

Code	Study Title	Author(s)	Game(s) Used	Methodology	Participants
R1	On the Effect of Employing Story-Based Video Games on Iraqi EFL Learners' Vocabulary Retention and Motivation	Salman Hintaw Abdulhussein, E Alimardani (2021)	Clifford the Big Red Dog	Quasi-experimental (Pre-test/Post-test with control group)	40 pre-intermediate EFL students (Experimental & Control groups), Iraq
R2	The Implementation of Mobile Legend Game to Increase Vocabulary and Learning Activeness of Fifth Grade Students at Insan Mandiri Cendekia Palembang	Hasan Sadiqin, Indawan Syahri, Tahrin (2022)	Mobile Legends	Classroom action research	Fifth-grade elementary students, Indonesia (Palembang)
R3	The Effect of Multiplayer Video Games on Incidental and Intentional L2 Vocabulary Learning: The Case of Among Us	José Ramón Calvo-Ferrer, Jose Belda-Medina (2021)	Among Us	Experimental design (Pre-test/Post-test)	54 11th-grade EFL students, Spain

Code	Study Title	Author(s)	Game(s) Used	Methodology	Participants
R4	Language Learning in Digital Game Minecraft: A Mixed Methods Study of Japanese EFL Learners	Jeremy Stewart White (2023)	Minecraft	Mixed-methods (Quantitative and qualitative data collection)	6 university students (4 male, 2 female), Japan
R5	Enhancing Students' Motivation in the EFL Classroom Through Life is Strange: A Digital Game-Based Learning Scenario Proposal	Angie Alejandra Pulido Salcedo (2023)	Life is Strange	Qualitative action research (Design-based proposal)	4th-grade ESO students (ages 15–16), Spain
R6	The Efficacy of Genshin Impact Game-Based Learning for Enhancing Students' English Vocabulary: A Quasi-Experimental Study	Muhammad Pierre Persada Dien (2023)	Genshin Impact	Quasi-experimental (Pre-test/Post-test design)	7th-grade students, Indonesia (Surabaya)
R7	The Legend of Zelda: Ocarina of Time and Vocabulary Acquisition in a 9th Grade Norwegian Classroom	Hedda Louise Strand Ludvigsen (2022)	The Legend of Zelda: Ocarina of Time	Experimental design (Pre-test/Post-test with control group)	50 9th-grade students (25 experimental, 25 control), Norway
R8	The Effects of an MMORPG on Thai EFL University	Wanwisa Changkwian, Suksan	DOTA 2 (Creative Mode)	Time-series quasi-experimental	35 university students, Thailand

Code	Study Title	Author(s)	Game(s) Used	Methodology	Participants
	Students' Reading for Main Ideas	Suppasetserree (2023)			
R9	Empowering Learners with Role-Playing Game for Vocabulary Mastery	Aam Ali Rahman, Anggi Angraeni (2020)	Nancy Drew: The Creature of Kapu Cave	Qualitative with quasi-experimental design	65 students (40 main study: Experimental & Control), Indonesia
R10	The Effects of a Game-Enhanced Learning Intervention on Foreign Language Learning	Seda Musaoğlu Aydın, Nur Akkuş Çakır (2022)	Life is Strange (All episodes)	Embedded mixed-methods (Pre-test/Post-test + interviews)	76 EFL students (ages 18–21), Turkey

2. The Utilization of Non-Educational Digital Games in Lesson

Before designing a lesson, teachers must first select the game to be used as a media. Studies **R1**, **R3**, and **R8** selected games that aligned with specific teaching objectives. In contrast, **R2**, **R4**, **R5**, **R6**, **R7**, **R9**, and **R10** designed what and how to teach based on the games they had already chosen as the media.

The games used in **R1**, **R3**, and **R8** were *Clifford the Big Red Dog*, *Among Us*, and *DOTA 2*. **R1** and **R2** focused on vocabulary skills and therefore chose games accordingly. **R1** selected a story-based game rich in vocabulary relevant to the objective, while **R2** chose a social deduction game in which players could and had to use vocabulary from a pre-taught list. **R3** used a game with high customizability, allowing the creation of scenarios that suited their learning goals.

On the other hand, **R2**, **R4**, **R5**, **R6**, **R7**, **R9**, and **R10** defined learning objectives that suited the games they had selected, for reasons such as accessibility or the popularity of the game. **R2** chose *Mobile Legends* because of its wide popularity among Indonesian students, and designed a vocabulary lesson based on it. **R4** selected *Minecraft*, believing it could attract students' attention more effectively than traditional lessons. **R4** designed lessons based on *Minecraft*'s features, such as the ability to create miniature buildings from real life and in-game chat communication. **R5** and **R10** both used *Life is Strange* and created lessons based on its story, developing learning themes and tasks based on the in-game experiences of the students. **R6** selected *Genshin Impact* for its popularity and rich vocabulary involving real-life social language, and created assessments based on what students encountered in the game. Similarly, **R7** and **R9** also designed lessons based on what was done in **R6**, which focused on vocabulary, but using different games, **R7** used *The Legend of Zelda: Ocarina of Time*, while **R9** used *Nancy Drew: The Creature of Kapu Cave*.

Once the game and the lesson plan to be utilized have been identified, the instructional process can commence. Based on the aforementioned studies, game-enhanced language learning instruction may be implemented in the following phases.

The lesson typically begins with an **Introduction Phase**, where the teacher provides an overview of the session. This includes introducing the game that will be used, explaining its relevance to the lesson, and outlining the learning

objectives. As shown in studies **R4** and **R6**, this phase is crucial in setting the context and ensuring that students understand the purpose of the activity.

Following this, the teacher moves on to the **Game Setup Phase**. In this stage, the teacher ensures that all technical aspects of the game are ready and functioning properly. A brief tutorial is often given to guide students on how to play the game. Students are then organized, sometimes into groups if required by the activity. Study **R1** emphasizes the teacher's responsibility in preparing the game environment, while Study **R2** highlights the importance of clearly explaining the gameplay mechanics.

The next phase is **Gameplay**. During this stage, students actively engage with the game while the teacher takes on a more observational role, monitoring student progress and providing support when necessary. In several studies, such as **R5** and **R7**, it is noted that students interact directly with the game's content, often engaging in tasks that promote language use. Teachers assist as needed, whether to clarify gameplay or to support language learning. In **R6** and **R8**, it is emphasized that teachers should foster student engagement, encourage collaboration, and guide students in navigating in-game tasks. Furthermore, studies like **R3** and **R9** mention the importance of drawing students' attention to contextual vocabulary during gameplay and offering support in understanding new terms.

Once gameplay concludes, the lesson transitions into the reflection phase. This stage allows students to reflect on their in-game experiences and how they interacted with English throughout the session. In **R10**, this reflection is considered essential to the PCaRD model, Play, Curricular Activity, Reflection, and

Discussion, with teachers facilitating discussions and encouraging students to share their insights. Similarly, **R5** and **R10** describe how students can work individually or in groups to express their learning experiences and connect them to the lesson's goals.

The assessment and recap phase follows. Here, the teacher evaluates the students' learning outcomes, either through formal assessments or structured activities designed to measure progress. In **R8**, this phase includes a brief recap to reinforce key points before moving into the assessment. The nature of the assessments varies, depending on the focus and objectives of the lesson, but commonly targets vocabulary acquisition, comprehension, or language use.

Finally, the lesson ends with the **conclusion phase**, where the teacher summarizes the main points and provides feedback. As observed in **R7**, this phase may also include motivational remarks to encourage students to apply the language they have acquired outside the classroom. Additionally, **R4** highlights the use of homework to reinforce vocabulary learning beyond the classroom, further supporting the game-enhanced instruction.

3. Impact on Students

All of the reviewed studies indicate that the use of non-educational digital games in classroom environments has a positive impact on students. These impacts can be categorized into several key areas:

a. Improved Vocabulary and Language Skills

All studies demonstrated an improvement in students' vocabulary and language skills. This progress is attributed to the learners' exposure to real-life,

contextual use of the target language. For instance, in **R3**, students used English to discuss certain topics, while in **R4**, they were required to coordinate using the target language effectively.

b. Increased Motivation and Engagement

Nearly all students exhibited increased motivation and engagement. In studies **R3**, **R4**, **R5**, **R6**, **R7**, **R9**, and **R10**, this was attributed to the ability of digital games to spark students' interest and fully immerse them in the learning process.

c. Greater Enjoyment and Positive Attitudes Toward Learning

Studies **R3**, **R5**, **R7**, and **R9** reported that non-educational digital games provided students with greater enjoyment, leading to more positive attitudes toward learning.

d. Natural and Contextual Learning Experiences

In **R5**, **R6**, **R7**, **R9**, and **R10**, it was shown that the use of story-driven games facilitated more natural and contextually relevant learning experiences for students.

e. Development of Reflection and Critical Thinking

Studies **R5** and **R10**, both of which utilized the same story-based game, revealed that students developed stronger reflection and critical thinking skills. This was a result of lesson designs that incorporated activities specifically aimed at nurturing these aspects.

4. Challenges to Utilizing in the Indonesian educational context

The studies reviewed in this research originate from various countries. However, only three of them were conducted in Indonesia. By comparing studies conducted within Indonesia and those from other countries, we can identify several challenges that Indonesia needs to overcome to implement game-enhanced language lessons successfully. These challenges include:

a. Infrastructural and institutional constraints

All international studies utilized personal computers or laptops for gameplay. In contrast, studies **R2** and **R6** in Indonesia relied on mobile phones, while **R9** used a PC but selected a game with low system requirements. This highlights Indonesia's limited infrastructure, which poses a barrier to supporting this type of learning environment. Moreover, school regulations that discourage the use of personal mobile devices during lessons also hinder the practical implementation of game-enhanced learning.

b. Weak pedagogical structure and limited teacher involvement

Study **R10** emphasizes that, aside from the game itself, well-designed lesson plans and active teacher involvement play crucial roles in the success of digital game-enhanced instruction. Without properly structured lessons and teachers who are trained and capable of managing such learning, the effectiveness of COTS-based instruction can be significantly reduced.

c. Student and teacher resistance to game-enhanced learning

As seen in **R9**, some students expressed discomfort with learning through COTS digital games. This reaction stems from their belief that games are

meant solely for entertainment and should not be incorporated into academic settings. Similarly, some teachers were hesitant to use contemporary technologies—especially commercial digital games—due to a lack of familiarity or confidence, further complicating the adoption of game-enhanced learning models.

B. Discussion

This study aims to investigate how game-enhanced learning using non-educational digital games has been implemented by previous researchers. This section discusses the findings in depth, focusing on the research questions: lesson design, impact on students, and challenges in implementation.

1. The Utilization of Non-Educational Digital Games in Lesson

As previously described, the reviewed studies demonstrate various ways of designing and conducting language lessons using non-educational digital games. These practices can be organized into three main phases: pre-teaching, on-teaching, and post-teaching, as outlined below:

a. Pre-teaching phase

This phase involves selecting the game and designing the lesson plan. The selection process may be driven either by the curricular objectives or by the nature of the chosen game. Game selection plays a crucial role in this type of instruction because the content, objectives, and potential challenges of the lesson are directly shaped by the game. The game's narrative, mechanics, and linguistic features influence the direction and focus of the teaching activities.

b. On-teaching phase

This includes the introduction to the lesson, game setup, and gameplay. The teacher introduces the lesson and the game to establish expectations and learning objectives. In the setup phase, the teacher prepares students to begin gameplay, including organizing the game environment and providing technical guidance. During gameplay, the teacher must carefully facilitate learning, ensuring that an entertainment-based digital game can effectively serve educational purposes.

c. Post-teaching phase

This final phase consists of reflection, assessment, recap, and conclusion. These steps are designed to reinforce the learning that occurred during gameplay. Effective post-teaching activities can convert incidental learning, naturally acquired through interaction with the game, into intentional, structured learning aligned with educational goals.

Not all reviewed studies provided detailed descriptions of their instructional procedures. This gap highlights a common limitation: the lack of teacher creativity and preparedness when using commercial off-the-shelf (COTS) games for instructional purposes. Well-structured lessons using COTS games require careful planning, pedagogical understanding, and significant time investment for successful implementation.

The reviewed studies have illustrated the significant role of the teacher in conducting lessons using non-educational digital games and how such lessons can be implemented step by step. Wenting Gong and Chuang Xu (2024), in their research on the flow state in EFL learning, highlight the importance of the teacher's role in facilitating learning environments that support students in achieving flow.

The concept of flow, originally introduced by Csikszentmihalyi, refers to a mental state in which learners are fully immersed, focused, and enjoy the activity they are engaged in. In this optimal experience, learners lose track of time, feel intrinsically motivated, and often perform at their best. Gong and Xu emphasize that teachers are expected to provide four types of support to help students reach this state: instrumental support, which involves creating a suitable learning environment; emotional support, which includes encouragement and care; informational support, referring to the provision of materials and guidance; and appraisal support, which entails offering feedback and recognition.

In the previously reviewed studies involving non-educational digital games, it is evident that teachers fulfilled their responsibilities primarily in the areas of instrumental and informational support. Teachers prepared the necessary hardware and software and guided students on how to use them. As for the emotional and appraisal dimensions, these were not solely the responsibility of the teacher but were also supported by the interactive and immersive nature of digital games, which offer more dynamic engagement than traditional media.

Gong and Xu also argue that variation in activities and active student involvement are key factors in achieving flow. In this regard, non-educational digital games play a crucial role, as students are actively involved in playing the game themselves, which enhances their engagement. Moreover, such games often offer various tasks and experiences, even within a single title, which supports sustained attention and motivation.

The alignment between Gong and Xu's theoretical framework and the findings from the reviewed studies suggests that the use of non-educational digital games may serve as an effective media to help students reach a state of flow. This, in turn, contributes to deeper learning and the achievement of educational goals more engagingly and naturally.

In terms of teaching procedures, various models can be applied. One approach that may serve as a useful guideline is the Presentation, Practice, and Production model, or PPP. This model divides the language learning process into three main stages, which include presenting new language items in context, practicing through controlled activities to develop accuracy, and producing language through more open-ended and communicative use to build fluency (Husnaini, Yahya, Putri, 2023).

The use of non-educational digital games allows for all three stages, the PPP model, to occur within a single gaming activity. Learners are exposed to new language through gameplay, which functions as the presentation stage. This is often supported by additional teacher explanation. Learners gradually understand the meaning or usage of the language through game interaction and then apply it to solve tasks within the game, covering both practice and production stages. Therefore, integrating this type of media can streamline the necessary instructional activities and support more effective teaching and learning outcomes.

2. Impact on Students

From the findings presented, it can be concluded that the use of non-educational digital games has a positive impact on students' language skills,

particularly in vocabulary development, which is the most frequently studied area. This is largely attributed to the increase in students' motivation and engagement. Many learners express a preference for learning through play, especially when using modern technology. Unlike traditional media, which are often passive, digital games require students to actively engage as participants in the learning process.

The reviewed articles also indicate that greater enjoyment and positive attitudes toward learning contribute to improved academic achievement. Many non-educational digital games provide students with natural and contextual language learning experiences. In several studies, improvements in students' reflection and critical thinking skills were also observed when the activities were appropriately designed.

Similar statements are also evident in many previous studies. Numerous research findings have indicated that the use of non-educational digital games can significantly improve students' vocabulary skills (Ehsan Dwyer, 2024; Fadillah, Nasrullah, Muth'im, 2023). The same applies to the importance of motivation and engagement as driving factors in students' achievement in EFL learning (Mastur, Rofiqoh, Suriaman, 2021; Mustafa, Rashid, Atmowardoyo, Dollah, 2015; Ozer Badem, 2022). These findings highlight the usefulness of non-educational digital games as instructional media to support the achievement of educational goals.

In conclusion, non-educational digital games have demonstrated a positive impact aligned with the goals of EFL curricula, particularly in enhancing student outcomes in learning English as a foreign language.

3. Challenges to Utilizing on Indonesian educational context

Based on the findings presented earlier, the challenges that may hinder the implementation of language education using non-educational digital games in Indonesia can be categorized into two main areas: infrastructural issues and human resource limitations.

Infrastructural issues lie primarily in the limited availability of hardware that can support education using this type of media (Lestari, Pudir, & Wibowo, 2024). Although smartphones have become essential devices for most students and may serve as potential tools for digital game integration, relying on students' devices is not an ideal approach. Educational institutions should be responsible for providing adequate hardware to support modern teaching practices. In addition to the hardware limitations, unequal access to reliable internet across different regions in Indonesia poses a significant challenge. Many areas still lack sufficient internet connectivity, which hinders the implementation of digital game-based education, especially since many free-to-play digital game titles require an internet connection to function. On the other hand, digital games that can be played offline are often paid titles, which creates another barrier to access and implementation.

The importance of infrastructure, particularly internet access, in the digital age has been emphasized in several previous studies that highlight the negative impact of infrastructural deficiencies. A study conducted in Michigan revealed a noticeable disparity in academic performance between students with

consistent internet access and those without (Hampton, Fernandez, Craig, Bauer, 2020). Similarly, a study in Ghana demonstrated that students who had access to the internet exhibited higher school achievement compared to their peers who did not (Amponsah, Aboagye, Narh-Kert, Boateng, 2022). Based on these findings, it can be concluded that Indonesia must first develop sufficient infrastructure to effectively implement education using non-educational digital games.

Another major issue lies in the area of human resources, particularly the lack of pedagogical and digital competence among teachers, as well as resistance to game-enhanced digital teaching from both educators and students. The limited pedagogical skills can be observed in the lack of activity variation when using digital games in comparison to studies conducted outside Indonesia. Inadequate digital competence is evident in the absence of comprehensive professional development, especially among older teachers who tend to struggle with digital tools, as opposed to younger teachers who are generally more receptive to technological advancement. Several studies conducted in Indonesia have highlighted the importance of teacher competence in the digital era as a means to overcome contemporary educational challenges. Unfortunately, a significant number of teachers are still unable to meet these demands (Priyantin Herawati, 2023; Nurhidayat, Mujiyanto, Yuliasri, Hartono, 2024). In addition, resistance to the modern teaching environment also poses a significant challenge to the implementation of this method in Indonesia. This resistance stems from the discomfort experienced by both teachers and students in using non-educational tools for pedagogical purposes. Such resistance must be addressed, as it can hinder

the achievement of effective and efficient education. Several studies have highlighted the negative impacts that may arise when digital learning is met with resistance (AL-Takhayneh, et. al., 2022; Okoye Okwo, 2019). These studies indicate that such resistance can lead to decreased learning effectiveness, student engagement, and motivation, outcomes that are contrary to the intended purpose of using digital games as explored in this research. Ultimately, Indonesia must address and eliminate this resistance through various strategies to achieve educational goals effectively and efficiently.