Faculty of Humanities, Social Sciences and Education

Leveling up L2 English

Exploring the impact of digital games on vocabulary acquisition among Norwegian second language learners of English

Johannessen, Ole-Henrik

Master's Thesis in English Teacher Education: The English Language and Social Sciences ENG-3982, May 2024

Acknowledgments

I would like to thank my supervisor, Yulia Rodina. With your encouragement and guidance, you pushed me through and made me believe in myself enough to finish this thesis. This would not have been possible without your positive support.

Thank you, friends and family, for your company and encouragement. You have been able to push me when needed and help me relax when I have felt stressed out.

Thanks to the e-sport community and other gamers who participated in the questionnaire. This would not have been possible without you. Special thanks to Anders, Stian, Thomas, Mathias, Dara, and the rest of the members of DMG Esports, who were always by my side when needed.

Lastly, a special thanks to Tanja, who cheered and supported me through the process. Your words of encouragement and the assistance you have given me mean the world to me.

Abstract

The purpose of this study is to investigate the role of vocabulary acquisition in English as a second language (L2). Vocabulary is a crucial element that links the four language skills of speaking, listening, reading, and writing together, which are essential skills for communication. Vocabulary acquisition is a complex task involving recognizing and using words in form, meaning, and use. Therefore, second language researchers (SLA) aim to understand the best way for L2 learners to acquire vocabulary in their target language. The study gathered Norwegian gamers' self-assessments in L2 English skills and opinions on digital games as a source for L2 English. Results suggest that participants rate their English skills highly, and a primary source for improvement in L2 English was gaming. Additionally, results suggest that participants believe digital games to be a good source of English vocabulary input. The study concludes that digital games may have a valuable role in L2 English vocabulary acquisition, as they create a fun and stress-free environment that is effective for deep learning.

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1. Introduction

Mastering a second language (L2) is a complex task, and the learning contexts are varied and diverse (Hummel, 2014, p. 36). The different situations for language learning can include immersing oneself in an environment where the target language is spoken, such as in a formal classroom where a teacher can guide learning. While classroom settings are practical, they often provide limited exposure compared to what a child is exposed to when learning a first language (L1) (Hummel, 2014, p. 42). In the Norwegian curriculum (Utdanningsdirektoratet, 2019), communication is the critical component of the English subject, where pupils should learn to communicate with others locally and globally regardless of their backgrounds (Carlsen et al., 2020, p. 105). In addition, learning does not occur in isolation but involves social interactions that facilitate the learning process (Rankin et al., 2008). Acquiring vocabulary is essential for learning a new language, as it is simply impossible to communicate or understand anything if we do not know a certain number of words (Carlsen et al., 2020, p. 283).

A 2002 study called "English in Europe" (Ibsen, 2004) looked at attitudes and skills towards English L2 among European pupils. Compared to the other European countries, Norwegian pupils achieved very positive results. One of the most notable discoveries was that the pupils who achieved the highest scores stated that they had developed about half of their English skills outside of school education (Carlsen et al., 2020, p. 43), where PC games and the Internet were recognized by Norwegian participants as a primary source for contact with L2 English (Ibsen, 2004). Since then, the impact of L2 English on many pupils' daily routines has grown, partly through the evolution and growth of the Internet and social media.

The popularity of digital games has increased (Wang et al., 2017), not only as a hobby but as a global sport activity (e-sports). According to Rohan (2023), the 2023 world championship of League of Legends was the first e-sports tournament to reach 6 million peak viewers, breaking viewership records. For reference, the semifinal of the same year got over 4 million views, which surpassed the previous year's semifinal with over 2 million views (Fisher, 2023). The culture and love for digital games are shared among people worldwide, connecting different cultures and people together, and it is therefore important that communication among them works. The increasing popularity of digital games has led educators to consider

the impact of online gaming on language learning (Wang et al., 2017; Peake & Reynolds, 2020).

Digital games attract players to spend countless hours, where they work hard to improve their skills and progress from one game level to the next (Rankin et al., 2008). Even though digital games are primarily used for entertainment, they have recently emerged as pedagogical tools, as games require gamers to be active participants rather than passive observers (Rankin et al., 2008). Compared to self-paced tutorials that focus on reading, writing, listening, and speaking skills, digital games require gamers to follow rules and process information to complete game tasks. In digital games, language is just a tool to achieve a goal, not the focus (Ranking et al., 2008). The social interactions between gamers that digital games create encourage collaborative gameplay and promote language learning through conversation through chat messages or oral conversations (Rankin et al., 2009). English is the most widely spoken language in the world (Crystal, 2012, p. 6). Therefore, digital games are exposed to the English language, as English also serves as the most used language for gaming (Steam, 2024).

Vocabulary refers to the individual's understanding of word meanings and is one of the most important aspects of English as a Second Language (Bakar & Nosratirad, 2013). The ability to use language fluently and grammatically is directly linked to an individual's vocabulary, which is developed over time through exposure to a wide range of language input. Individuals with more knowledge of vocabulary are more proficient in their language skills (Bakar & Nosratirad, 2013). To participate in digital gaming, users need to have a basic understanding of the English language to understand instructions from the game (Bakar & Nosratirad, 2013) and communicate with others through online multiplayer games. Therefore, because digital games provide a language learning environment, it might be a usable tool to improve the L2 English language (Bakar & Nosratirad, 2013).

The present study aimed to assess the effectiveness of digital games as a tool for English vocabulary learning among Norwegian L2 learners. This involved understanding how beneficial Norwegian gamers believe digital games are for L2 vocabulary learning and understanding the characteristics of digital games that contribute to L2 vocabulary acquisition. The study sought to research these questions:

- How effective do Norwegian gamers think digital games are for learning L2 English vocabulary?
- What are Norwegian gamers' attitudes toward incorporating digital games into formal English language learning environments?
- In what ways do Norwegian gamers believe that engaging with digital games affects their English language skills?

To answer these questions, this study applied a questionnaire targeting Norwegian gamers who had varying levels of exposure to English through digital gaming. The questionnaire gathered quantitative data on participants' self-evaluation of L2 English skills and their opinions on the effect digital games might have on L2 English.

This study is organized into four chapters:

- Chapter 1 introduces the study by outlining the research context and explaining its significance.
- Chapter 2 explains the process of acquiring vocabulary in a second language, focusing on traditional methods and the potential of digital games, reviewing relevant research.
- Chapter 3 describes the present study's research methodology, participants, and results of the questionnaire.
- Chapter 4 discusses the results in relation to the research questions.

2. Background

2.1 L2 Vocabulary

Proficiency and grammatical accuracy in language are closely tied to building up a large vocabulary over time through a lot of language exposure, and vocabulary skills are crucial for proficiency in a second language (Bakar, 2013). Vocabulary represents a fundamental aspect of second language (L2) knowledge that learners must develop to cover a range of communicative skills, such as academic success and interpersonal communication (Saville-Troike. 2006). Vocabulary can be defined as a collection of words within a language, which an individual collects as they acquire linguistic proficiency (Carter, 2012). In addition, vocabulary is an essential element that links the four language skills of speaking, listening, reading, and writing together, and learners of a second language should acquire a sufficient amount of vocabulary to be able to communicate with others within the language they are trying to learn (Nguyen & Khuat, 2003). An extensive vocabulary is fundamental to mastering a language, and the extent of an individual's vocabulary directly influences their proficiency in various language skills (Krashen, 1989). Therefore, vocabulary is crucial for effective and meaningful communication, both in the native language and in the acquisition of an L2 (Yudintseva, 2015).

The vocabulary that L2 learners acquire and their understanding of it is shaped by their ability to learn words from everyday conversation, written texts, and formal teaching. Vocabulary acquisition occurs at a varying level, where beginners will recognize words in spoken and written forms and start to use words they learn in specific contexts, and after time, be able to use the words accurately and appropriately. However, it is possible to never fully master words but still become integrated into an L2 learner's active use (Saville-Troike, 2006). L2 learners will, therefore, try to communicate effectively using the vocabulary they know to be understood in communication, even if their knowledge of some words they use is not entirely correct (Saville-Troike, 2006). Saville-Troike outlines how L2 learners acquire vocabulary through interaction, reading, and formal education, progressing from essential recognition to advanced usage. L2 learners will effectively use their vocabulary to communicate, even if complete mastery has not been reached.

Acquiring L2 vocabulary is a step-by-step and multidimensional process, and existing SLA research aims to understand how L2 learners can learn vocabulary in the best way possible (Yip & Kwan. 2006).

2.2 Second Language Vocabulary Acquisition

Acquiring L2 vocabulary is a complex task involving learning and acquiring knowledge about words through which users can express ideas and communicate (Hummel, 2014, p. 147-148). To cover all aspects of what is involved in knowing a word, Nation (2013) refers to receptive and productive knowledge, which at the most general level involves knowledge of form, meaning, and use. Knowing how to pronounce and spell the word and recognizing the components of the word are related to form. Understanding a word also includes knowing what the word refers to and relates to and that different forms can refer to different concepts and associate with other words. In addition, understanding how to use the word involves being aware of how the word interacts with other words in phrases and sentences, knowing its grammatical function, and recognizing appropriate collocations (Nation, 2013; Gass et al., 2013). Receptive knowledge involves recognizing and understanding these aspects when reading or listening. Productive knowledge involves actively recalling and using elements accurately in various contexts in speech and writing.

In addition, Saville-Troike (2006, p. 141-142) also highlights various morphological rules and patterns that need to be acquired to learn new words and achieve grammatical accuracy. English demonstrates significant morphological complexity, where new words are often formed by combining smaller words or through derivational morphology, for example, by adding prefixes and suffixes to alter meaning. For instance, compounds such as "armchair" (arm + chair) or derivatives such as un- or -ness can be used to form words like "unkind" (un- + kind) or "kindness" (kind + -ness). Interpersonal and academic communication involve different morphology, and commonly encountered affixes in scientific terms are: -ology "study of" (sociology, psychology, biology) or -geo "earth" (geology, geography).

Understanding subcategorization, which involves the grammatical functions or patterns in which words occur, is a crucial aspect of L2 vocabulary acquisition (Gass et al., 2013).

Adjemian (1983, as cited in Gass et al., 2013) points out that L2 learners often assume that verbs in their second language take the same subjects and objects as they do in their native language. This underscores the importance of L2 learners grasping the subject and objects of sentences to form grammatically correct sentences.

L2 acquisition, a process that occurs in two primary contexts, is notably effective through recurring interactions with native or other target language speakers. This highlights the crucial role of social learning in language acquisition, where learners are immersed in real-life language use and cultural contexts. The second context, formal language instructions within educational institutions, also plays a significant role (De Wilde et al., 2022).

Alongside traditional methods of L2 vocabulary acquisition, other strategies may offer substantial additional benefits with minimal teacher involvement and classroom time. Nation (2013) introduces the intriguing concept of incidental learning, a strategy that can provide broader exposure and occur naturally for L2 learners when engaging in targeted language environments. Incidental learning, a form of learning that happens without the learner necessarily being aware that they are learning, can be a powerful tool for vocabulary acquisition. Such activities can include reading, listening, and practicing conversation. Both native speakers and learners of a second language often pick up vocabulary incidentally by encountering words repeatedly across various contexts (Huckin & Coady, 1999).

The effects of reading on English L2 have been extensively studied, revealing its benefits for learners to pick up and learn new vocabulary (De Wilde et al., 2022). Frequent and significant reading introduces new words with meaningful contexts that can impact L2 learners' vocabulary acquisition. Contextual clues given through different reading materials can help readers define unfamiliar words they encounter, which underscores the enlightening role of reading in vocabulary acquisition, as it provides a rich and varied source of language input. Other sources for incidental learning outside of school have also been investigated, such as television and music (Lindgren & Muñoz, 2013), which expose learners to listening and reading skills (De Wilde et al., 2022).

When speaking of what is essential to developing L2 vocabulary, Sauville-Troike (2006, p. 155-168) refers to the four important language skills for development: Reading, listening,

writing, and speaking. Reading is essential for learning an L2. It is crucial for daily communication and understanding in any society where reading and writing are common. For many learners, reading is the primary way they learn and experience the language through literature and culture. Fluent reading depends on knowing many words by sight and understanding grammar rules well. Listening is also important for L2 learners who want to talk and communicate with others or need to understand spoken information from lectures and incidental environments for learning, such as media or movies. Communication methods that involve listening can come from two-way interactions to one-way listening. Talking with someone face-to-face is an example of two-way communication while listening to the news on the radio or TV is one-way. Writing is a critical skill for L2 learners, as it also presumes the ability to read. It requires learners to actively construct sentences, applying vocabulary they have learned productively. Writing helps develop vocabulary by actively using words to write, and it also aids in integrating new words through composing text. Speaking is crucial for the active use of vocabulary in real-time communication, allowing learners to practice new words in conversation, further helping solidify their understanding and usage of the language in various communicative contexts.

Following the four language skills that factor in the development of English L2, we can see the previously mentioned sources for learning lack usage of these skills. Reading is an important skill to master in L2 acquisition, but frequent reading only uses one of the four skills for language acquisition. Watching television uses the listening skills of the L2 learner and can also utilize reading skills if there are subtitles to the show. Music is also important for listening to words and phrases but does not utilize the other L2 acquisition skills. Writing and speaking do not appear to be used in these three activities, so these three activities would need input from other sources to utilize the missing language skills. One activity that does utilize reading, writing, speaking, and listening skills (not necessarily at once) is gaming. The next section will explore English L2 acquisition in gaming and look at previous studies on this topic.

2.3 Digital Games as Tools for L2 Vocabulary Acquisition

As mentioned in the previous section, most vocabulary learners acquire incidentally through exposure to words in different contexts that involve reading, listening, speaking, writing, or

interactions. Studies have shown that digital games and online game environments provide English L2 learners with unique opportunities to practice and learn English vocabulary in environments that are notably more comfortable and stress-free (Ranking et al., 2008; Ranking et al., 2009; Bakar, 2011; Peterson, 2012; Rye, 2013). Gee (2005) suggests that we often associate games with fun and enjoyment, while we associate learning with work. However, there are games that can facilitate deep learning and be enjoyable at the same time, showing that learning can be enjoyable. Digital games have the potential to benefit L2 vocabulary learning and expose users to new vocabulary through interactions with digital games, other players, or other gaming activities such as forums (Peake & Reynolds, 2020). Digital games have the potential to create deep learning through the problem-solving nature of games, and gamers can feel a source of control, agency, and meaningfulness as they are in control of the games (Gee, 2007). Massively Multiplayer Online Role-Playing Game (MMORPG) is an example of a genre where gamers can practice their L2 skills through social interactions with other players through both writing and reading, and speaking and listening (Throne et al. 2009).

Yudintseva (2015) conducted a systematic review of research on game-enhanced and game-based second language vocabulary acquisition strategies published over the last decade. Game-enhanced practice uses commercial-off-the-shelf (COTS) games for incidental language learning, and games in this category can be League of Legends, The Sims, FIFA, or the MMORPG game World of Warcraft, to name a few. Game-based practice refers to games modified for language objectives, such as Tactical Iraqu, Food Force, or Second Life (Yudintseva, 2015).

Previous findings suggest positive vocabulary outcomes for English L2 learners in digital games through contextual clues, such as imagery, that helped create meaning for new vocabulary that pupils encountered (Vahdat & Behbahani, 2013). Player-to-player interactions that utilize reading and writing or speaking and listening with native speakers of English also had positive effects on English vocabulary acquisition; where pupils reported that interactions with native speakers had challenges, but challenges were overlooked because of humor, small talk, and informal language that reduced anxiety (Peterson, 2012). Interaction with other pupils of English L2 also had positive effects on vocabulary outcomes, where pupils reported that they could help each other understand new words and phrases that were unknown to them (Ranalli, 2008)

Yudintseva (2015) recommends a combination of both game-based learning and traditional vocabulary strategies and states that future research on digital-game-based learning should focus on empirical data. For this reason, this chapter will look at more recent studies exploring the role of digital games. The three selected studies explore the following:

- English L2 learners' attitudes toward digital game-based learning.
- Vocabulary acquisition through COTS games.
- The use of commercial digital games and attitudes toward integrating digital games into the English educational curriculum.

2.3.1 Peake and Reynolds (2020):

Peake and Reynolds's study (2020) examines how non-native English speakers, specifically French university pupils, use online digital games as tools for language acquisition. The research focused on understanding pupils' attitudes towards engaging in the online digital gaming world, where English serves as the primary language. Real-time communication, instant messages, participating in forums, and watching other players on streaming apps facilitate informal learning of English as a leisure outside of traditional educational settings.

The study interviewed 90 French university pupils who engaged in online digital gaming in English during their leisure time. The participants, who had an average age of 21 and were bilingual, were asked about their gaming habits, the language they used for gaming, whether they could recall any gaming-related vocabulary they had learned through gaming, and whether they believed that gaming had enhanced their English language proficiency (Peake & Reynolds, 2020).

Findings revealed that pupils spent 16 hours per week playing digital games, surpassing the time spent in their formal English classes. The majority of the participants favored multiplayer games, where English is the dominant language used both for the game itself and for communication with other players. 84% would communicate in written form, but 67.8% would also communicate orally. Pupils reported learning a significant amount of vocabulary through gaming, with a cited total of 328 words covering a range of grammatical categories. A striking 84.4% of the pupils felt that gaming had improved their English proficiency, with one

participant attributing 90% of their English learning to digital games. Despite these benefits, they unanimously did not want to blend gaming activities with formal educational practice, seeing the importance of traditional education structures for improving language form and structure.

Peake and Reynolds' (2020) methodology offers a framework for exploring informal L2 English language acquisition outside the traditional classroom setting. The study provides valuable insight into the role of motivation and implicit L2 English vocabulary acquisition, which are important elements in investigating game-enhanced vocabulary learning strategies for L2 English.

2.3.2 Sundqvist (2019):

In 2019, Sundqvist conducted a study exploring the relationship between L2 English vocabulary acquisition and commercial-off-the-shelf (COTS) games among Swedish teenage learners. This research is critical in highlighting the informal learning opportunities provided by digital gaming outside traditional educational environments.

The study utilized a mixed-methods design, utilizing both quantitative and qualitative data to gain a comprehensive understanding of the effect on vocabulary development using digital games divided into two samples. Sample A involved 1069 participants who utilized vocabulary tests to quantify the level of L2 English vocabulary acquisition. The Productive levels test (PLT) and Vocabulary levels test (VLT) were used to determine the vocabulary knowledge of the pupils by assessing their active use of vocabulary in speech and writing. The qualitative analysis engaged 16 participants in Sample B through interviews and essays to provide deeper insights into personal experiences and perceptions regarding gaming and language learning. A questionnaire was also utilized to collect data from Swedish pupils about their gaming habits and L2 learning outside of education.

The results of Sundqvist's (2019) aimed to answer four research questions. The first question aimed to understand the relation between time spent playing COTS games and L2 English vocabulary test measures. The study found that pupils who spent time playing COTS games consistently demonstrated higher scores on both PLT and VLT vocabulary tests than

non-gamers. The relation between the game genres – single-player (SP), multiplayer (MP), or mass-multiplayer online (MMO) - and the performance in vocabulary tests was explored in the second question. The observation suggests that while the genre itself was not significant, spending frequent time in any of the genres correlated heavily with L2 vocabulary acquisition. Research question three aimed to assess the productive vocabulary levels of gamers and non-gamers using different levels of PLT. Results of the tests revealed that gamers had a more advanced productive vocabulary, where average solution rates were significantly higher at all tested vocabulary levels. However, gamers also excelled at difficult words compared to non-gamers. The last research question compared the usage of infrequent vocabulary in the written essays of gamers and non-gamers. Results of the qualitative approach revealed similar results as previous research questions and supported the idea that the amount of time participants spent engaged in prolonged exposure to English through gaming activities positively correlated with their vocabulary acquisition.

Sundqvist (2019) concludes that their study shows clear relations to L2 English vocabulary proficiency for the Swedish pupils playing COTS games outside school. Pupils that played COTS games scored highest in both productive and receptive vocabulary tests. The outcome of the results is linked not only to how often participants engage with digital games but also to the rich context and setting the games can offer.

2.3.3 Alrajhi (2020):

The research conducted by Alrajhi (2020) investigated how L2 learners of English from an Arabic university used commercial digital games as tools for improving and learning English and attitudes toward the potential of integrating digital games into the SLA curriculum. This investigation examines different aspects of gaming and L2 acquisition among English as a Foreign Language learners (EFL).

The study was conducted with the participation of 101 male Arabic-speaking English majors, aged between 20 and 26, who were enrolled in different years of the Translation bachelor program. Alrajhi employed a quantitative approach, using an online questionnaire tool with 29 items divided into three sections. The first section collected demographic data and general

information about gaming and L2 learning. The second section sought opinions on digital games for English education, while the third section explored attitudes toward integrating digital games into the English curriculum.

The findings from the questionnaire reveal that gaming has been popular among the majority of the participants for more than five years, and a large number of the participants play for 1-3 hours a day or more. English was the preferred language when playing, and many of the participants would play to improve their English by concentrating on both language form and meaning when playing, especially when encountering informal language and specific terminologies that are not taught in traditional settings. Results also revealed that most of the learners were in favor and had positive attitudes toward adding digital games to the English curriculum. However, the majority also believed that the existing commercial games would need modification for more effective results in English education.

From Alrajhi's research, we can learn that digital games are highly popular and engaging environments that can significantly enhance L2 vocabulary acquisition and overall language competence.

2.4 Summary

To summarize this chapter, vocabulary skills are crucial for developing mastery of a language, and acquiring L2 vocabulary is a complex task that involves learning and acquiring knowledge about words to express ideas and communicate. Vocabulary is also linked to the four language skills, where learners can acquire and use language through exposure to speaking, listening, reading, and writing. Social learning is critical for acquiring L2 vocabulary, as recurring interactions or formal language instructions promote L2 vocabulary learning. Additionally, out-of-school activities such as watching TV, listening to music, or playing digital games aid L2 vocabulary acquisition.

This study has also established the possible benefits of digital games as a tool for L2 vocabulary acquisition, where digital games provide stress-free and comfortable environments. Digital games offer exposure to new vocabulary through interactions with digital games, other players,

or game activities such as forums. Contextual clues and interactions with other target language speakers can improve L2 vocabulary learning, which digital games can facilitate.

The French participants in the research conducted by Peake and Reynolds (2020) reported proficiency improvement in English L2 vocabulary through online digital gaming. However, they were hesitant to implement digital gaming into the English curriculum. Sundqvists' (2019) Swedish participants demonstrated higher vocabulary acquisition and proficiency in PLT and VLT than non-gamers. In addition, Alrajhis' (2020) Arabic participants favored integrating digital games into the English curriculum, reporting gaming as a beneficial source for learning informal language and terminologies.

Overall, studies suggest that digital games are considered practical tools for L2 vocabulary acquisition, providing learners with rich contexts and engaging environments.

3. Present Study

This study extends the existing research on English L2 vocabulary acquisition through digital games, focusing on the specific attitudes and experiences of Norwegian learners of English. The growth of digital gaming as a tool for education, as well as its popularity as a hobby, highlights the necessity of understanding how learners perceive digital games and the potential they hold for enhancing L2 English vocabulary. Previous research has indicated positive outcomes in vocabulary acquisition and favorable attitudes towards digital games in diverse contexts, including Sweden, Saudi Arabia, and France (Alrajhi, 2020; Peake & Reynolds, 2020; Sundqvist, 2019). This study aims to understand how similar dynamics unfold within the Norwegian context by examining local gamers' perspectives on using digital games for language learning and their integration into educational settings.

The aim of this research is to explore three key aspects of digital gaming's impact on L2 vocabulary learning:

1. How effective do Norwegian gamers think digital games are for learning L2 English vocabulary?
2. What are Norwegian gamers' attitudes toward incorporating digital games into formal English language learning environments?
3. In what ways do Norwegian gamers believe that engaging with digital games affects their English language skills?

This study explores the relationship between digital gaming and L2 English vocabulary acquisition by Norwegian gamers. The research questions aim to uncover how Norwegian gamers perceive the effectiveness of digital games in enhancing their language skills and their knowledge of L2 English vocabulary in particular. The first research question explores gamers' perceptions of how digital games facilitate vocabulary acquisition, seeking to identify the specific attributes of gaming that support language learning. The second research question examines attitudes towards integrating digital games into formal English language learning environments, exploring attitudes to such innovations and potential concerns. The final research question investigates the bigger impact of gaming on language skills, including speaking, reading, writing, and listening, to offer a wide view of its educational potential. Collectively,

these questions aim to provide an understanding of the role that digital games can play in educational settings, reflecting both the enthusiasm for and the reservations about this approach to language learning.

3.1 Participants

The study targeted Norwegian gamers who use English as a second language. Out of the initial 45 participants, two were excluded for not being native Norwegian speakers, resulting in a total of 43, with 42 participants currently living in Norway while one was living in Denmark. This group consisted of 31 males and 12 females. Participants' ages ranged from 16 to 37 years, with an age span of 21 years. The average age of the participants was 24.14. The results section will present participants' gaming habits and evaluation of their English skills.

3.2 Methodology

This study used a quantitative approach to gather data from participants, who were sampled anonymously using Nettskjema, an online survey tool. The questionnaire had 26 items (40 if we count all the statements) and was inspired by and adapted from previous studies (Peake & Reynolds, 2020; Sundqvist, 2019; Alrajhi, 2020). The questionnaire was distributed through various community servers on Discord and X (formerly known as Twitter), aiming to assess gaming habits, English language skills, and attitudes toward digital games for English L2 education among Norwegian gamers. All questions were asked in Norwegian, and results have been sorted into tables translated into English.

The questionnaire was organized into four main sections:

1. Demographic background information, including age, gender, language spoken, self-rated English proficiency, and sources of English language learning.

2. Gaming habits, exploring duration and frequency of gaming, language used during gaming, reasons for gaming, and sources of English learning associated with gaming.

3. Attitudes and strategies toward encountering unfamiliar English vocabulary in gaming, including how participants deal with new words and their perceptions of gaming as a tool for English language development.

4. The perceived impact of digital gaming on specific English skills, comparing digital games with traditional learning methods, and soliciting examples of vocabulary learning through gaming.

The structure of the questionnaire was designed to capture a comprehensive view of the participants' experiences and perspectives on the role of digital gaming in learning English as a second language.

3.3 Results

The results section delves into the outcomes of the questionnaire, which are organized across four sections, each corresponding to a specific thematic area of the survey as previously described in the methodology. This framework enables a thorough analysis of the data, ensuring that the findings are presented in a readable and structured manner.

1. Background information: This section will provide an analysis of the participants' self-assessment of opinions on different sources for L2 English learning.
2. Gaming experience: Insight into the gaming practices of participants will be shown here, showcasing the participants' experience with digital games, as well as their habits with English L2 communication.
3. Language knowledge and vocabulary:
4. Opinions and attitudes: This section explores the participants' opinions and attitudes towards digital gaming as a source for L2 English acquisition, as an educational tool, and as an in-the-wild source.

The results in each chapter will be supported by tables created in Microsoft Excel containing the results from the questionnaire.

3.3.1 Participants Background Information

The initial section of the questionnaire focused on collecting participants' background and demographic information, as well as self-assessments of their English language skills and their perception of where they most effectively learn and improve these skills. The participant's demographic and background information have been detailed previously in Chapter 3.1.

Table 1 presents the results from the participants' self-rating of their English skills in the four key English language skills: Writing, Talking, Listening, and Reading. Participants rated their skills on a scale from 1 to 6, where 1 indicates the lowest proficiency, and 6 indicates the highest. The table is organized into columns labeled 1 through 6, each representing a possible score. The *"M"* column provides the average mean scores across all participants for each language skill. The results reveal a consistently high mean across all four language skills. Listening and Reading have the highest mean scores, with 5.65 and 5.55, respectively. Notably, only seven participants rated any of their English skills under 4, while most rated themselves higher across all skills.

Table 1: *"How would you rank your own self-proficiency in the four English skills, where 1 is lowest, and 6 is highest."* Participants rated their skills in writing, speaking, listening, and reading on a scale from 1 (lowest) to 6 (highest). The table summarizes these ratings and calculates the mean score for each language skill.

English skills	1	2	3	4	5	6	*M*
Writing	0	1	3	6	24	9	4.86
Talking	0	1	1	8	23	10	4.93
Listening	0	0	0	1	13	29	5.65

Reading	0	0	1	1	14	27	5.55

Note: M = Mean.

To assess the variety of resources participants utilized for English L2 learning, they were asked to identify the sources from which they believed they had gained the most improvement in their language skills. Participants could select multiple sources, providing a wide view of their learning preferences. Table 2 summarizes these selections, presented as the number of participants and the corresponding percentages who chose each source.

The data reveal that digital games and the internet were the most frequently selected sources, each chosen by 91% of participants. Traditional educational settings such as schools were selected by 37% of participants. Movies and television were also popular, chosen by 74% of participants. Books and music were selected by 40% of participants, indicating a moderate level of use as sources for language learning. Traveling was seen as the least favorable option, with 30% presence.

Table 2: "*Where do you improve your English the most? Pick as many that fit you.*" This table categorizes the sources participants could identify as beneficial for improving their English L2 skills. Table lists each source, the number of participants who selected it, and the corresponding percentage of the total response.

Sources	*n*	*%*
Games	39	91
Internet	39	91
Movies	32	74

	n	%
TV	32	74
Reading	19	44
Books	17	40
Music	17	40
School	16	37
Travel	13	30
Other	3	7

Note: n = Number of participants. % = Percentages of participants.

3.3.2 Gaming Experience

This section presents the results of the participants' gaming experiences. To gain insight into their gaming backgrounds, questions were posed regarding the frequency and duration of their gaming activities. Initially, data were collected on when participants started gaming, the length of time they have been engaged in gaming, and their regular gaming frequency. Additionally, the survey explored participants' favorite genres of games, their preferences for social interactions during gaming, and the motivations behind their gaming activities.

Table 3 illustrates the results concerning the initiation of digital gaming activities among participants, revealing that 95% began gaming years ago, while only 5% started more recently. Further details regarding their gaming experience are displayed in Table 4, which shows that 93% of participants have been active gamers for more than five years, indicating a long-term commitment to gaming. Additionally, Table 5 details gaming frequency, where 40% of

participants play more than three hours per day and 35% play between one to three hours daily, demonstrating a high level of engagement with digital games. Overall, regular gaming is common among 75% of the study sample.

Table 3: *"Have you ever played digital games?"*
Table shows when participants started playing digital games. Data is shown in terms of number of participants and percentages for each category.

Have you ever played digital games?	*n*	*%*
Started many years ago, and still gaming	41	95
Started recently	2	5
Never	0	0.00

Note: n = Number of participants. % = Percentage of participants.

Table 4: *"How long have you been playing digital games?"* Table show how long participants have been playing digital games. Data is shown in terms of number of participants and percentages for each category.

Time spent gaming	*n*	*%*
More than 5 years	40	93
Few months	1	2
1-3 years	1	2

3-5 years	1	2

Note: n = Number of participants. % = Percentage of participants.

Table 5*: "How often do you play digital games?"* Table show the frequency participants engage in digital gaming. Data is shown in terms of number of participants and percentages for each category.

Time spent gaming	*n*	*%*
More than 3 hours per day	17	40
1-3 hours per day	15	35
A few hours a week	6	14
A few hours a month	3	7
Does not regularly play	2	5

Note: n = Number of participants. % = Percentage of participants.

Table 6 categorizes participants preferred digital game genres, highlighting a range of popular genres. Participants were able to choose as many genres as they liked. Multiplayer games were the most favored genre, with 84% of participants indicating a preference. This is closely followed by the Adventure and Strategy genres, preferred by 65% and 63% of participants, showing interest in games that acquire cooperative and strategic games. Action and shooting genres also had a high preference rate, at 63% and 51%. Additionally, Role Playing Games (RPGs) were preferred by 37% of participants, making them the most popular among the less commonly chosen genres. Results indicate a diverse range of interests in various genres, reflecting the participants' wide range of preferences in digital gaming.

Table 6: *"What video game genre is your favorite?"* Table represents responses to participants' favorite digital game genres. Genres are listed in descending order, with both the total count and the percentage of participants preferring each genre presented for each genre.

Genres	*n*	*%*
Multiplayer	36	84
Adventure	28	65
Shooting games	27	63
Strategy	27	63
Action	22	51
Role Playing Game (RPG)	16	37
Brain Teasers	9	21
Horror	8	19
Sport	6	14
Others.	6	14
Mystery	5	12

Simulation	4	9	
Learning games	2	5	

Note: n = Number of participants. *% =* Percentage of participants.

Table 7 illustrates participants' preferences for social interaction during gaming. Results reveal that a significant 88% of participants play games with other players while engaging in communication. In contrast, only 12% of participants reported spending time playing digital games alone.

In addition, results from Table 8 show the extent of English L2 usage among participants while gaming. 33% of the participants reported using English 75% of the time they play. Additionally, 28% of participants use English 90% of the time, and 12% use English 100% of the time. Notably, 89% of the participants use English more than 50% of the time while playing, which highlights a strong use of English L2 across different gaming sessions among the participants.

Table 7: *"Do you usually play digital games alone or with other players? Do you communicate with these players?"* Table represents the participants communication habits when playing digital games. Results are shown in terms of number of participants and percentage of participants for each category.

Do you play digital games alone or with another player?	*n*	*%*
With other player, while using communication	38	88
Alone	5	12
With other players, but without communication	0	0

Note: n = Number of participants. *% =* Percentage of participants.

Table 8: "*When you play digital games: How often do you use the English language when you play?*" Table represents results from participants' communication habits when playing digital games. Results show number of participants and the percentage of participants for each category.

How often do you play in English?	*n*	*%*
100% of the time	5	12
90% of the time	12	28
75% of the time	14	33
50% of the time	7	16
25% of the time	4	9
10% of the time	1	2

Note: n = Number of participants. *%* = Percentage of participants.

The last gaming experience-related question was to understand why gamers participate in engaging in digital games. Notably, *pleasure* is the most significant factor for engaging in digital gaming, with 91% of participants identifying it as the key motivation for gaming. This preference for gaming is followed up by *the social part* of gaming, with 74% of participants appreciating spending time with other gamers through digital games. *Competition* is also noticeable, with 65% of participants engaging in gaming for competitive reasons. Practicing L2 English language or skills was not a reason for playing digital games, with 0% presence by participants.

Table 9: "*Why do you play digital games?*" Table shows results of why participant engage in digital games. Results show number of participants and the percentage of participants for each category.

Why do you play digital games?	*n*	*%*
Pleasure	39	91
The social part	32	74
Competition	28	65
Other reasons	2	5
To practice and improve English-language	0	0.00
To practice and improve specific English-skills	0	0.00

Note: n = Number of participants. *%* = Percentage of participants. English-skills = Speaking, Writing, Listening and Speaking.

3.3.3 Language Knowledge and Vocabulary

This section focuses on language knowledge and L2 vocabulary acquisition in gaming, building on the motivation that gaming brings, as gaming often involves engagement with the English language. Participants have already noted English usage while gaming, as shown in the previous section. The section will present the results from Section 3 of the questionnaire, where the participants responded to questions about their attitudes and strategies when encountering new English words.

Table 10 presents the results of what actions participants do when encountering unfamiliar words while playing digital games. Participants were able to choose multiple options as they saw fit. The results show that 53% of the participants actively seek to understand the word by either looking up the word in a dictionary or asking someone what the word means. 35% also use translation apps when encountering new words, and 7% note down words they encounter for later research. However, 23% of the participants also ignored words they encountered to keep playing.

Table 10: "*What do you do when you encounter an unfamiliar English word while playing digital games?*" Table shows results of what participants do when encountering new English words. Results show the number of participants and the percentage of participants for each category.

When you game, what do you do when you encounter a new English word?	*n*	*%*
Look up the word in a dictionary	23	53
Ask someone what the word means	23	53
Use a translation app	15	35
Ignore it and keep playing	10	23
Other	5	12
Note it down, and research it later	3	7

Note: n = Number of participants. *%* = Percentage of participants.

Table 11 presents data on the specific aspects of vocabulary that participants focus on when encountering new and unfamiliar words in digital games. Participants expressed their level of agreement with each statement using a Likert scale: Strongly Disagree (1), Disagree (2), Don't Know (3), Agree (4), and Strongly Agree (5). Don't Know (3) represents a neutral answer for participants. This scale helps quantify the intensity of their focus on each aspect, from pronunciation to usage in context, with higher scores indicating stronger agreement.

The results show that participants focus on understanding the meaning of new words they encounter while gaming, with the highest mean score of 4.2. An interest follows this result in understanding how the words should be used in a sentence, with a mean score of 3.8. How the words are written and how to pronounce words they encounter had a mean score of 3.5 and 3.4, respectively, suggesting a moderate focus. Results from Table 11 reveal that participants are most interested in understanding what the word means, but results show that there is still a focus on other aspects of knowing a word.

Table 11:" *When I play digital games in English and discover a new word, I focus on:"* This table summarizes respondents' perceptions of what is important when discovering a new word while playing digital games. Data are categorized based on the number of participants agreement with each statement.

"When I play digital games in English and discover a new word, I focus on:"						
Answers	SA	A	DK	D	SD	*M*
What the word means	17	21	3	2	0	4.232
The pronunciation of the word	2	25	6	8	2	3.255

	SA	A	DK	D	SD	M
How it is written	5	24	5	6	3	3.511
How the word is used in a sentence	13	20	2	6	2	3.837

Note: SA = Strongly Agree (5). *A* = Agree (4). *DK* = Don't know (3). *D* = Disagree (2). *SD* = Strongly Disagree (1). *M* = mean score

The last question in section 3 seeks to understand participants' thoughts on how digital games can improve L2 English skills. Participants were able to choose multiple options. Table 12 investigates the opinions on the effectiveness of digital games as a tool for enhancing English L2 skills among gamers. The results indicate that most participants view digital games positively for L2 learning, with 84% agreeing that digital games make learning English more fun. A compliment to the learning aspect is the safe and comfortable environment that digital games bring, supported by 60% of participants' presence. Digital games, being a source for quick learning and easy to learn, are also looked at as good elements for the effectiveness of digital games, with 58% and 53%, respectively. However, despite this optimistic view, a minority of 5% do not see digital games as a source for improving and learning English skills. This suggests that while gaming is seen as a valuable educational tool for L2 English skill improvements, it may not fit all learners of L2 English.

Table 12: "*Digital games is an effective way to learn and improve English skills, because:*" This table shows participants thoughts on the statement. Participants could choose multiple choices. Results show the number of participants and the percentage of participants for each category.

Digital games is an effective way of learning and improving English skills, because:	*n*	*%*
It makes learning fun	36	84

It is a safe and comfortable environment	26	60
You learn quicker	25	58
It is easier to learn	23	53
It is not an effective way for English teaching	2	5

Note: n = Number of participants. *%* = Percentage of participants.

3.3.4 Opinions and Attitudes

The last section sought to gather more information and explore the participants' opinions and attitudes towards digital gaming as a source for L2 English acquisition, as an educational tool, and as an in-the-wild source. The participants were given statements related to digital gaming, English-skills acquirement, and what motivates the use of English while gaming. Participants could express their level of agreement with each statement using a Likert scale: Strongly Disagree (1), Disagree (2), Don't Know (3), Agree (4), and Strongly Agree (5). Don't Know (3) represents a neutral answer for participants. Results can be seen in Table 13.

Table 13 explores the perceived impact of digital games on various English language skills among participants. The results indicate a strong belief in the effectiveness of digital games for enhancing overall English skills, with a high mean score of 4.604. Among the specific language skills, listening skills received the highest mean score at 4.558. This is closely followed by reading and speaking skills, with mean scores of 4.418 and 4.232, respectively. While still positively impacted, writing skills are perceived as less improved by gaming, with a mean score of 4.069.

In addition to these core language skills, participants recognized the benefits of gaming in enhancing other linguistic abilities. Participants believed pronunciation improvements are improved by engaging in digital gaming, with a mean score of 4.046, indicating moderate

effectiveness. Improvement in vocabulary acquisition is also viewed favorably, reflected in a mean score of 4.279, with the ability to understand new words scoring higher with a mean score of 4.372. Notably, participants also felt that digital games aid in remembering new vocabulary they would acquire, as indicated by the mean score of 4.023. However, spelling is perceived as the least improved skill through gaming activities, with a still notable mean score of 3.720.

The last statements in Table 13 focus on the role of digital games as an effective learning environment for English language skills. The results highlight that participants feel significantly more confident in their English abilities due to their interactions with digital games, highlighted by the mean score of 4.116. Participants reported that environments, such as online multiplayer games, provide a comfortable environment for speaking L2 English without fear of language errors, as shown by the mean score of 4.093.

Table 13: *"Read the following statements and indicate if you: "Strongly agree" (SA), "Agree" (A), "Disagree" (D), "Strongly disagree" (SD), "Don't know" (DK).* This table summarizes respondents' perceptions of what is important when discovering an unfamiliar word while playing digital games. Data is categorized based on the number of participants agreement with each statement.*

Statements	SA	A	DK	D	SD	*M*
Digital games help me improve my English skills	30	11	0	2	0	4.604
Playing digital games help me develop my English-speaking skills	20	17	2	4	0	4.232
Digital games help me develop English listening-skills	29	11	1	2	0	4.558

Digital games help me develop English reading-skills	22	19	0	2	0	4.418
Digital games help me develop English writing-skills.	17	18	3	4	1	4.069
Digital games help me improve English pronunciations.	17	17	3	6	0	4.046
Digital games help me improve my English-spelling skills	12	17	4	10	0	3.720
Digital games help me learn and improve my English vocabulary.	16	24	1	2	0	4.279
Playing digital games help me understand different word meanings.	20	20	2	1	0	4.372
English words I learn from gaming are easy to remember for an extended period of time	15	17	8	3	0	4.023
Gaming motivates me to learn English, because I need to understand the language to progress in the game	15	13	5	9	1	3.744
Online multiplayer games provide a comfortable environment for speaking English without fear of language errors.	16	20	3	3	1	4.093

I am comfortable with my English-skills because of digital games.	24	11	0	5	3	4.116

Note: SA = Strongly Agree (5). *A* = Agree (4). *DK* = Don't know (3). *D* = Disagree (2). *SD* = Strongly Disagree (1). *M* = mean score.

Participants were questioned to determine which English skill they believe is most improved by playing digital games. Results are listed in Table 14, and results suggest that 40% of participants believe that reading is the skill that improves the most when playing games, while 30% believed listening as the next most improved skill. Only 21% felt that speaking improved the most, and writing was seen as the least believable improved skill by gaming, with only 9% of participants selecting it.

Participants were asked which aspects of digital games contributed the most to improving English skills. Results from Table 15 suggest that 42% of the participants considered interactions between players to be the most impactful element for improving English skills. 33% believed that dialogues between characters in games had the most significant impact. Lastly, 26% of participants thought the overall storyline of digital games was most impactful for improving their English skills.

Table 14: *"Which English skill does digital games improve the most?" Table 14 summarizes what skill participants feels that they improve the most on by playing digital games. Results are ranked from highest to lowest, showing how many chose each skill, as well as the percentage.*

English skills	*n*	*%*
Read	17	40
Listen	13	30

Speak	9	21
Write	4	9

Table 15: "*What part of digital games do you think you improve your English skills the most?*" *Table includes what part of digital games that participants believe to be the most important to improve English skills out of the options given. Results are ranked from highest to lowest and total percentage.*

Item	*n*	*%*
Player interactions	18	42
Dialog between characters	14	33
Storyline	11	26

Participants were also asked to evaluate where they believe English L2 is best learned—through traditional learning methods or digital games. They were prompted to select a number on a scale from 0 to 10, where 0 signifies a preference for traditional methods, 10 indicates a preference for digital games, and 5 represents a neutral stance between the two. Figure 1 displays a visual representation of the scale. The results indicate a favorable view towards digital games as a medium for learning English L2, with an average mean of 6.804.

På en skala der 0 er tradisjonel læremåte, og læring igjennom videospill er 10, hvor lærer man best etter din mening? *
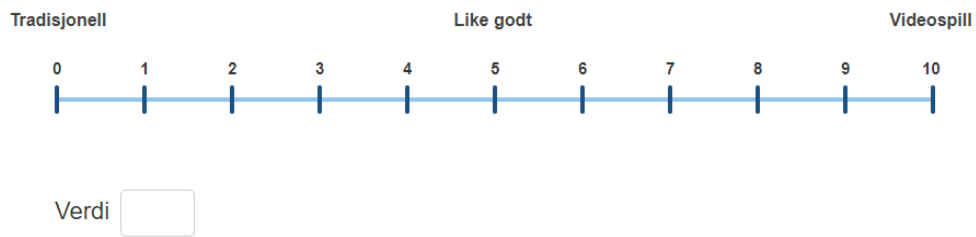

Figure 1: Visual representation of scale used in the questionnaire for items in Table 16.

Table 16: *"On a scale where 0 is traditional learning methods, and learning through digital games is a 10, where do you learn the best, in your opinion?"* (Unsure how to present this table)

Items	*n*	*%*	*m*
10	6	14	
9	0	0	
8	9	21	
7	10	23	6.804
6	7	16	
5	4	9	
4	4	9	

3	1	2
2	1	2
1	1	2
0	0	0

Note: N = Number of participants. *%* = Percentages of participants. *m* = Mean score

The questionnaire concluded with statements concerning the use of digital games in English L2 teaching. Participants were asked to select the statement they most agreed with, and the results are presented in Table 17. The findings suggest that 53% of participants believe that currently available digital games are suitable for English learning but would require modifications to enhance their teaching effectiveness. Yet, 42% of the participants feel that existing digital games are well-suited for English teaching and require no further modifications. Additionally, a small minority of 5% believe that there is a need to design specific digital games explicitly targeted at English language learning.

Table 17: "*If digital games were to be used in schools or universities to improve English teaching, I believe that:*" Results are ranked from highest to lowest and total percentage.

Item	*n*	%
The available digital games to choose from are well suited for English learning, but there is a need to modify them to be more fit for effective English teaching.	23	53
The available digital games to choose from are well suited for English learning, and there is no need to design specific games aimed at English learning.	18	42
The available digital games are not suitable for English learning, and there is a need to design specific games that target English learning.	2	5

Note: N = Number of participants. *%* = Percentage of participants.

4. Discussion

This chapter will discuss the findings and results of the questionnaire. It aims to reflect on Norwegian gamers' attitudes attitude towards and self-assessments of the use of digital games for English L2 acquisition. The research questions that will be reflected on are:

- How effective do Norwegian gamers think digital games are for learning L2 English vocabulary?
- What are Norwegian gamers' attitudes toward incorporating digital games into formal English language learning environments?
- In what ways do Norwegian gamers believe that engaging with digital games affects their English language skills?

Firstly, findings from Tables 3, 4, and 5 suggest that digital games are popular among the participants. Participants report having started playing digital games many years ago and have played for more than five years. The majority of the participants also spend either 1-3 hours a day or more engaging in digital gameplay.

4.1 How effective do Norwegian gamers think digital games are for learning L2 English vocabulary?

To understand if participants improve their vocabulary through engaging in digital gameplay, elements involved in knowing a word must be fulfilled. As mentioned, Nation (2013) states that understanding the form of a word, its meaning, and its use in both receptive and productive knowledge are critical components for understanding words.

This study's findings indicate that participants perceive an enhancement in their L2 vocabulary skills through digital gaming, indicated by the high mean score of 4.279 in Table 13. Additionally, Table 10 suggests that participants actively attempt to learn and understand unfamiliar words they encounter. Results from Table 11 suggest a positive response in understanding the meaning of a word, with the highest mean score of 4.232. The mean scores of 3.255 and 3.511, associated with pronunciation and written focus on a word, suggest a moderate level of focus from participants. The mean score of 3.837, related to the usage of the

word in a sentence, suggests a stronger moderate agreement among participants. These results suggest that active digital gaming can enhance L2 English vocabulary through understanding form, meaning, and use, where participants focus more on use and meaning. These results align with the theoretical perspective argued by Nation (2013) and Gass et al. (2013), who emphasize that mastering a vocabulary involves form, meaning, and use.

The self-perceived improvements reported by the participants in the present study align with Peake and Reynolds's (2020) examination of how non-native speakers of English use online digital games for English L2 acquisition. In Peake and Reynold's study (2020), 84% of the French participants believed their English proficiency had improved. These participants also reported engaging in written online communication in English with other players while gaming 84% of the time, and 67.8% communicated orally. Similarly, in the present study, 88% of the participants reported communicating with other players (Table 7), and results from Table 8 suggest that participants often use English when they engage in digital play. Furthermore, the results indicate that 91% of the Norwegian participants attribute their improved L2 English to digital games (Table 2), comparable to Peake and Reynolds' (2020) participants.

In addition, the frequent gaming time that this study's participants reported and the possible improvement in L2 vocabulary skills might correlate with Sundqvist's (2019) findings. Frequent and moderate gamers scored highest on both the productive level test (PLT) and vocabulary level test (VLT), and gamers showed more advanced vocabulary than non-gamers (Sundqvist, 2019). However, the present study did not test the participants' vocabulary skills. Possible correlations would need additional testing to confirm correlations between the present study and Sundqvist (2019).

4.2 What are Norwegian gamers' attitudes toward incorporating digital games into formal English language learning environments?

The findings from this study provide insight into how Norwegian gamers perceive the integration of digital games into formal education settings for English language learning. A notable discovery from this study is that participants identified gaming as a primary source for improving their English skills, with traditional English education through school acknowledged

as a significant source by only 37% of participants, which correlates with Peake and Reynolds' (2020) study.

Table 12 suggests that participants had a positive attitude toward learning L2 English through digital games. Participants noted that games make learning English more fun, safe, and comfortable. In addition, participants believed that games facilitate faster and more accessible L2 learning. Interestingly, practicing and improving L2 English language and skills were not why participants engaged in digital games, as evidenced by the results shown in Table 9. These results suggest that participants are not actively seeking to improve their L2 English language skills while gaming, but participants' self-assessments suggest improvements in their L2 English language skills through incidental learning strategies (Nation, 2013). These findings are comparable with Peake and Reynolds's (2020) research, where participants reported developing their L2 English through digital gaming, even though participants played digital games for pleasure and not at all for L2 learning interests. In contrast, Alrajhi's (2020) participants engaged in digital games for enjoyment and to improve L2 English.

The data from Table 13 shows that participants believe that playing digital games improves their English skills. Most participants rated the statements with a mean score above 4. The only areas with a score below 4 were improvements in English spelling skills and motivation to learn English for gaming, which scored 3.720 and 3.744. These opinions suggest the potential of digital games as a valuable tool for language learning. Additionally, the results from Tables 16 and 17 indicate positive attitudes toward using digital games in education, with or without modifications. Similar results were reported by Alrajhi (2020), suggesting a positive view of digital games in education. However, findings by Peake and Reynolds (2020) showed that participants enjoyed digital gaming as a leisure activity and wished to avoid mixing pleasure with work. Nevertheless, participants welcomed games designed for language learning (Peake & Reynolds, 2020). In addition, there has been an increased focus on digital competence in the Norwegian curriculum. The effectiveness of using digital video games to improve language learning skills may align with the key skills outlined in the Norwegian curriculum for the English subject (Utdanningsdirektoratet, 2006; Utdanningsdirektoratet, 2019). Based on these findings, incorporating digital games into the formal English L2 curriculum by taking advantage of the advantages that digital games potentially have could potentially improve the perception of traditional schools as a key source for English L2 improvement.

4.3 In what ways do Norwegian gamers believe that engaging with digital games affects their English language skills?

In this study, participants reported high proficiency in reading and listening skills, with remarkably high mean scores of 5.6 and 5.5, respectively, as indicated in Table 1. 91% of participants also agreed that games and the Internet are a primary source for English improvement, indicating in Table 2. Efficiency in the respective language skills might be because of the previously mentioned gaming time, where most participants have played for more than five years and engage in digital play more than three hours per day, or 1-3 hours per day (Tables 3, 4, and 5). These results are slightly different than Ibsen's (2004) findings, where TV and sources for Music are bigger sources of English L2 input. The present research participants valued TV and movies as L2 English input (74%). However, compared to Ibsen's' (2004) findings, Music was not as popular, with 40% of the participants recognizing it as a source for English L2 improvement.

Participants' gaming time, shown in Tables 3, 4, and 5, indicates a consistent engagement with digital games, which might provide repeated exposure to the English language. Such kind of exposure that promotes reading and writing skills can be genres of games that follow complex storylines and character dialogs, which participants recognize as key to improvement of English language skills, as suggested by results in Table 15. Multiplayer was the most popular genre of game among participants, which can promote writing and listening skills through written and oral communication. Participants in Peake and Reynolds's (2020) study also cited multiplayer games as the most popular game genre. Games such as League of Legends, Counter-Strike, and World of Warcraft offer a rich amount of reading and listening input, as well as storyline and character dialogs. Additionally, high mean scores seen in Table 13 further suggest that digital games help develop participants' listening and reading skills.

Although slightly lower than reading and listening, speaking and writing skills are also rated highly by participants (Table 1). The interactive nature of many online games, which often requires communicating with other players to achieve a goal, helps improve conversational skills and vocabulary usage in real-time scenarios. Results from Table 7 suggest that participants engage in communication with other players 88% of the time. Multiplayer genres cited in Peake and Reynolds (2020), such as League of Legends, Counter-Strike, and

Overwatch 2, have the potential to improve oral communication skills through the quick decision-making and team coordination that these games provide. Again, participants' time spent gaming might repeat exposure to speaking and listening skills. In addition, high mean scores in Table 13 suggest that participants believe that digital games further improve speaking and writing skills.

4.4 Limitations

This study faces several limitations that must be acknowledged. Firstly, the small sample size and lack of gender balance limit the generalizability of the findings. The study only targets Norwegian gamers, not a specific group or age of participants, which may give varying results. Secondly, this study gathered participants' opinions and self-assessments, which may introduce bias toward digital games. In addition, the absence of a non-gamer control group to draw comparisons further biases the results in favor of digital games.

Furthermore, the lack of statements on specific games participants play hinders the ability to determine which features of digital games are advantageous, resulting in assumptions. In addition, the study did not employ any measure of language proficiency or English vocabulary proficiency. Instead, it relied on participants' self-assessments, which, while valuable, may not accurately reflect their true English L2 skills.

4.5 Conclusion

The present research has explored the impact of digital gaming on L2 English vocabulary acquisition among Norwegian gamers. Findings suggest that participants actively attempted to learn and understand unfamiliar words encountered during gameplay. This active engagement is critical for L2 English vocabulary acquisition, recollection, and understanding of words (De Wilde et al., 2022). Findings indicate a strong positive response to understanding the form, meaning, and use of words, which is essential for effective communication and language use (Nation, 2013). Moderate focus on pronunciation and written forms of words suggests that while these areas are improved, they are not the primary focus during gaming. Many participants reported that digital games helped them understand and use words in context, a

crucial aspect of language proficiency. The results support the argument made by Nation (2013) and Gass et al. (2013) that knowing a word involves understanding its form, meaning, and use.

Furthermore, Participants expressed confidence in their English L2 abilities due to gaming, and results suggest that multiplayer games offered a collaborative space for practicing spoken L2 English without the fear of making language errors, fostering a supportive learning community. These positive attitudes towards digital games indicate that, with the right implementations, digital games can be a valuable resource in educational settings.

The findings indicate that the majority of the participants believe digital games are an effective tool for enhancing vocabulary knowledge, as evidenced by high self-assessment scores of L2 English proficiency and opinions on digital games as a source for English input from participants. The participants perceived improved English L2 vocabulary skills through digital gaming, which aligns with previous research indicating the benefits of interactive, engaging, and motivating learning environments for language acquisition (Peake & Reynolds, 2020; Sundqvist, 2019; Alrajhi, 2020).

In conclusion, this research emphasizes the valuable role that digital gaming may have in L2 English vocabulary acquisition. Innovating digital games into language learning curricula could enhance the learning experience by providing students with interactive, enjoyable, and effective tools for vocabulary development. However, further research is strongly recommended to explore the long-term effects of digital gaming on English L2 acquisition and to develop strategies for effectively incorporating these tools into educational settings, ensuring a solid and evidence-based approach.

Bibliography

Alrajhi, A. S. (2020). *English Learners' Perceptions of Video Games as a Medium for Learning and Integration into the English Curriculum.* Mextesol Journal, 44(4).

Bado, N., & Franklin, T. (2014). *Cooperative game-based learning in the English as a foreign language classroom.* Issues and Trends in Educational Technology, 2(2).

Bakar, N. A., & Nosratirad, E. (2013). *Sustaining vocabulary acquisition through computer game: A case study.* Asian Social Science, 9(5), 235.

Carlsen, C., Dypedahl, M., & Iversen, S. H. (2020). *Teaching and learning English* (2nd edition.). Cappelen Damm akademisk.

Carter, R. (2012). *Vocabulary : applied linguistic perspectives* (Second edition.). Routledge.

Chik, A. (2011). *Learner autonomy development through digital gameplay.* Digital culture & education, 3(1), 30-44.

Crystal, D. (2012). Why a global language? In English as a Global Language (pp. 1–28). chapter, Cambridge: Cambridge University Press.

De Wilde, V., Brysbaert, M., & Eyckmans, J. (2022). *FORMAL VERSUS INFORMAL L2 LEARNING: HOW DO INDIVIDUAL DIFFERENCES AND WORD-RELATED VARIABLES INFLUENCE FRENCH AND ENGLISH L2 VOCABULARY LEARNING IN DUTCH-SPEAKING CHILDREN?* Studies in Second Language Acquisition, 44(1), 87–111. doi:10.1017/S0272263121000097

Fisher, Carver. (2023, 19. November). *LoL Worlds 2023 shatters records as the most viewed esports event ever.* Dexerto. Retrieved from https://www.dexerto.com/league-of-legends/lol-worlds-2023-shatters-records-as-the-most-viewed-esports-event-ever-2390533/

Ford-Connors, E., & Paratore, J. R. (2015). *Vocabulary instruction in fifth grade and beyond: Sources of word learning and productive contexts for development.* Review of Educational Research, 85(1), 50-91.

Fu, Y., Zhang, L., Zhao, S., & Chen, Y. (2021). *Perceptions of non-English major college pupils on learning English vocabulary with gamified apps.* International Journal of Emerging Technologies in Learning (iJET), 16(18), 268-276.

Gass, S. M., Behney, J., & Plonsky, L. (2013). *Second language acquisition:* An introductory course (4th ed.). Routledge

Gee, J. P. (2005). *Learning by design: Good digital games as learning machines.* E-learning and Digital Media, 2(1), 5-16.

Gee, J. P. (2007). *Good digital games+ good learning:* Collected essays on digital games, learning, and literacy. Peter Lang.

Huckin, T., & Coady, J. (1999). *INCIDENTAL VOCABULARY ACQUISITION IN A SECOND LANGUAGE:* A Review. Studies in Second Language Acquisition, 21(2), 181–193. doi:10.1017/S0272263199002028

Hummel, K. M. (2014). *Introducing second language acquisition : perspectives and practices* (pp. xii, 274). Wiley-Blackwell.

Ibsen, E. (2004). *Engelsk i Europa* - 2002 : norsk rapport fra en europeisk engelskundersøkelse om holdninger til og ferdigheter i engelsk ved utgangen obligatoriske grunnskolen (Vol. 2/2004). UiO/ILS.

Krashen, S. (1989). *We acquire vocabulary and spelling by reading: Additional evidence for the input hypothesis.* The Modern Language Journal, 73(4), 440–464.

Lindgren, E., & Muñoz, C. (2013). *The influence of exposure, parents, and linguistic distance on young European learners' foreign language comprehension.* International Journal of Multilingualism, 10(1), 105-129.

Nation, I. S. P. (2013). *Knowing a word.* In Learning Vocabulary in Another Language (pp. 44–91). chapter, Cambridge: Cambridge University Press.

Nation, I. S. P. (2013). *Teaching and explaining vocabulary.* In *Learning Vocabulary in Another Language* (pp. 92–160). chapter, Cambridge: Cambridge University Press.

Peake, J., & Reynolds, A. (2020). *"There's a sniper on that hill!": Gaming in English as a Global Language Environment.* Angles (Société Des Anglicistes de l'Enseignement Supérieur), 11(11). https://doi.org/10.4000/angles.3237

Peterson, M. (2012). *Learner interaction in a massively multiplayer online role playing game (MMORPG): A sociocultural discourse analysis.* ReCALL, 24(3), 361-380.

Ranalli, J. (2008). *Learning English with The Sims: exploiting authentic computer simulation games for L2 learning.* Computer Assisted Language Learning, 21(5), 441-455.

Rankin, Y. A., McNeal, M., Shute, M. W., & Gooch, B. (2008, August). *User centered game design: evaluating massive multiplayer online role playing games for second language acquisition.* In Proceedings of the 2008 ACM SIGGRAPH symposium on Video games (pp. 43-49).

Rankin, Y. A., Morrison, D., McNeal, M., Gooch, B., & Shute, M. W. (2009, April). *Time will tell*: *In-game social interactions that facilitate second language acquisition.* In Proceedings of the 4th international conference on foundations of digital games (pp. 161-168).

Rasti-Behbahani, A. (2021). *Why digital games can be advantageous in vocabulary learning*. Theory and practice in language studies, 11(2).

Rasti-Behbahani, A., & Shahbazi, M. (2022). *Investigating the effectiveness of a digital game-based task on the acquisition of word knowledge.* Computer Assisted Language Learning, 35(8), 1920-1945.

Rohan (2023, 19. November). *Worlds 2023 peak viewership record.* Esports.gg. Retrieved from https://esports.gg/news/league-of-legends/worlds-2023-peak-viewership-record/

Saville-Troike, M. (2006). *Introducing second language acquisition* (pp. VI, 206). Cambridge University Press.

Steam (2024). *Hardware & Software Survey:* Language. Retrieved 27.05.2024 from https://store.steampowered.com/hwsurvey

Sundqvist, P. (2019). *Commercial-off-the-shelf games in the digital wild and L2 learner vocabulary.* Language Learning & Technology, 23(1), 87–113. https://doi.org/10.10125/44674

Thorne, S. L., Black, R. W., & Sykes, J. M. (2009). *Second Language Use, Socialization, and Learning in Internet Interest Communities and Online Gaming.* The Modern Language Journal (Boulder, Colo.), 93(s1), 802–821. https://doi.org/10.1111/j.1540-4781.2009.00974.x

Utdanningsdirektoratet (2006). *«English subject curriculum (ENG1-03)».* Obtained from: https://www.udir.no/kl06/ENG1-03?lplang=http://data.udir.no/kl06/eng

Utdanningsdirektoratet (2019). *«Curriculum in English (ENG01-04)».* Obtained from: https://www.udir.no/lk20/eng01-04/kompetansemaal-og-vurdering/kv6

Vandet, S., & Behbahani, A. R. (2013). *The effect of digital games on Iranian EFL learners' vocabulary learning.* Reading, 13(1), 61-71.

Yip, F. W. M., & Kwan, A. C. M. (2006). *Online vocabulary games as a tool for teaching and learning English vocabulary.* Educational Media International, 43(3), 233–249. https://doi.org/10.1080/09523980600641445

Yudintseva, A. (2015). *Game-enhanced second language vocabulary acquisition strategies: A systematic review.* Open Journal of Social Sciences, 3(10), 101-109.

Wang, C.-Y., Wu, Y.-C., Su, C.-H., Lin, P.-C., Ko, C.-H., & Yen, J.-Y. (2017). *Association between Internet gaming disorder and generalized anxiety disorder.* Journal of Behavioral Addictions, 6(4), 564–571. https://doi.org/10.1556/2006.6.2017.088

Attachement

Å lære Engelsk igjennom spill

Velkommen til min undersøkelse!

Mitt navn er Ole-Henrik Johannessen, og jeg er for tiden en lektorstudent ved Universitetet i Tromsø, hvor jeg skriver min masteroppgave. Gjennom min forskning ønsker jeg å utforske potensielle effekter av spill på læring av engelsk. Dette området har fanget min interesse, da det kombinerer to viktige aspekter av moderne utdanning: digital teknologi og språklæring. Formålet med denne undersøkelsen er å samle inn data fra individer om deres erfaringer med spill og hvordan dette kan ha påvirket deres engelskkunnskaper. Enten du er en ivrig gamer som har tilbragt utallige timer i spillverdener, eller noen som sporadisk nyter et spill eller to, er din oppfattelse verdifull for min forskning.

Vennligst merk følgende:

- **Anonymitet**: Din identitet vil forbli anonym gjennom hele prosessen. Data som samles inn, vil kun bli presentert som gruppesvar i min oppgave.
- **Tidsestimat**: Det vil ta omtrent 5-10 minutter å fullføre denne undersøkelsen.
- **Målgruppe**: Denne undersøkelsen er rettet mot de som har spilt spill. Hvis du aldri har spilt et spill før, faller du utenfor målgruppen for denne undersøkelsen.

Din deltakelse er frivillig, men vil være svært verdifull for min forskning og bidra til en dypere forståelse av sammenhengen mellom spill og språklæring. Jeg setter stor pris på din tid og bidrag.

1. **Hvor gammel er du?**
2. **Hvordan identifiserer du deg?**
   - Gutt
   - Jente
   - Annet
3. **I hvilket land er du bosatt?**
4. **Hva er ditt morsmål?**
5. **Hva er det første språket du lærte?**

6. **Snakker du andre språk? Hvis Ja; Spesifiser hvilke.**

7. **Hvor gammel var du da du begynte å lære engelsk?**

8. **Hvordan ville du rangert din egen engelsk ferdighet?**

   1 er det laveste, og 6 høyeste.

   a. **Skrive**
      1.
      2.
      3.
      4.
      5.
      6.
   b. **Snakke**
      1.
      2.
      3.
      4.
      5.
      6.
   c. **Lytte**
      1.
      2.
      3.
      4.
      5.
      6.
   d. **Lese**
      1.
      2.
      3.
      4.
      5.
      6.

9. **Hvor føler du selv du lærer engelsk mest?**

   - Velg så mange som passer deg.

   - Bøker

   - Spill

   - Skole

   - TV

- Film

- Lese

- Reise

- Internett

- Musikk

- Annet

10. Har du noen gang spilt videospill?

- Aldri

- Bare i fortiden

- Begynte nylig

- Begynte for mange år siden, og spiller enda

11. Hvor lenge har du spilt videospill?

- Noen måneder

- Litt under et år

- 1-3 år

- 3-5 år

- Mer enn 5 år

12. Hvor ofte spiller du?

- 1 time per dag

- 1-3 timer per dag

- Mer enn 3 timer per dag

- Noen timer i uken

- Noen timer i måneden

- Ikke regelmessig spilling

13. Hvilke språk tar du i bruk når du spiller?

List opp språkene du tar i bruk når du spiller.

14. Av den tiden du bruker på å spille: hvor ofte bruker du engelsk når du spiller?

Er spillene på engelsk? Snakker du engelsk? Hvor mye av tiden brukes det engelske

språket i din regelmessige spilletid?

- 100% av tiden

- 90% av tiden

- 75% av tiden
- 50% av tiden
- 25% av tiden
- 10% av tiden
- 0% av tiden

15. Pleier du å spille videospill alene, eller med andre spillere? Kommuniserer du med dem?

- Alene
- Med spillere, men jeg snakker ikke med noen
- Med spillere, og jeg kommuniserer med dem

16. Hva slags plattformer bruker du for å spille?

- Konsoll
- PC
- Smart-telefon
- Nettbrett
- Hvilken videospill sjanger er dine favoritter?
- Action
- Adventure
- Sport
- Mysterie
- Skrekk
- Strategi
- Skytespill
- Simulasjon
- Lære-spill
- Role Playing Game (RPG)
- Multiplayer
- Hjernetrim
- Annet..

17. Hvorfor spiller du videospill?

- Fornøyelse

- For å øve og forbedre engelsk språket

- Forbedre og øve på spesefike engelsk-Ferdigheter (Snakke, Skrive, Lytte og Lese)

- Det sosiale

- Liker konkurranse

- Andre grunner

18. Hva gjør du når du spiller på engelsk og oppdager et nytt ord?

- Slår opp ordet i en Ordbok (bok eller internett)

- Spør noen hva det betyr

- Noterer det ned, og undersøker det senere

- Bruker en oversettelses app

- Ignorerer det og fortsetter å spille

- Annet

19. Når jeg spiller på engelsk og oppdager et nytt ord, så fokuserer jeg på:

Veldig Enig (VE), Enig (E), Uenig (U), Veldig Uenig (VU), Vet ikke (V).

20. Hva ordet betyr

- VE

- E

- U

- VU

- V

21. Uttalelsen på ordet

- VE

- E

- U

- VU

- V

22. Hvordan ordet er skrevet

- VE

- E

- U

- VU

- V

23. Hvordan ordet er brukt i setningen

- VE
- E
- U
- VU
- V

24. Videospill er en effektiv måte å lære og forbedre engelskferdigheter, fordi:

Velg så mange som du er enig med.

- Det å lære er enklere
- Man lærer raskere
- Det er et trygt og komfortabelt miljø for å lære
- Det gjør det å lære gøy
- Det er ikke så effektivt for engelsk læring

25. **Les de følgende påstandene og indiker om du er**:

Veldig Enig (VE), Enig (E), Uenig (U), Veldig Uenig (VU), Vet ikke (V)

26. Generelt så hjelper videospill meg å utvikle engelsk ferdighetene mine.

- VE
- E
- U
- VU
- V

27. Å spille videospill hjelper meg å utvikle mine engelske tale-ferdigheter

- VE
- E
- U
- VU
- V

28. Videospill hjelper meg å utvikle engelske lytte-egenskaper.

- VE
- E

- U

- VU

- V

29. Å spille videospill hjelper meg å utvikle mine engelske lese-ferdigheter.

- VE

- E

- U

- VU

- V

30. Videospill hjelper meg å utvikle mine engelske skrive-ferdigheter.

- VE

- E

- U

- VU

- V

31. Videospill hjelper meg å utvikle min engelske uttale.

- VE

- E

- U

- VU

- V

32. Videospill hjelper meg å forbedre stave-ferdighetene mine i engelsk.

- VE

- E

- U

- VU

- V

33. Videospill hjelper meg med å lære engelsk vokabulær og nye ord.

- VE

- E

- U

- VU

- V

34. Å spille videospill hjelper meg å forstå ulike meninger med ord.

- VE

- E

- U

- VU

- V

35. Engelske ord jeg lærer, mens jeg spiller, er lett å huske over en lang periode.

- VE

- E

- U

- VU

- V

36. Å spille motiverer meg til å lære engelsk, fordi jeg må forstå språket for å komme lenger i spillet.

- VE

- E

- U

- VU

- V

37. Videospill som skjer online med andre er et komfortabelt område å snakke engelsk uten å føle på en frykt om å gjøre språkfeil.

- VE

- E

- U

- VU

- V

38. Jeg er komfortabel med mine engelsk ferdigheter på grunn av videospill.

- VE

- E

- U
- VU
- V

39. Hvis videospill blir brukt på skole eller universitet for å forbedre engelsk læring, så tror jeg at:

- De tilgjengelige videospillene man kan velge mellom er godt egnet for engelsklæring, og det er ikke nødvendig å designe spesifikke spill som er rettet mot engelsklæring.
- De tilgjengelige digitale spillene som eksisterer er godt egnet for engelsklæring, men burde bli modifisert til å være mer effektive for Engelsklæring
- De tilgjengelige digitale spillene egner seg ikke for engelsklæring, og det er behov for å designe spesifikke spill som er rettet mot Engelsklæring.

40. Hvilke engelskferdigheter har videospill en størst påvirkning på?

- Lese
- Skrive
- Lytte
- Snakke

41. Hvilke elementer i videospill hjelper for vokabulærlæring?

- Storyline
- Dialog mellom karakterer
- Spiller interaksjoner

42. På en skala der 0 er tradisjonell læremåte, og læring igjennom videospill er 10, hvor lærer man best etter din mening?

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