

MASTEROPPGAVE

***The Legend of Zelda: Ocarina of Time* and Vocabulary acquisition in a 9th grade Norwegian classroom.**

Hedda Louise Strand Ludvigsen

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Abstract

English

Many researchers have in recent years highlighted the potential of using games for education in the classroom, but very few have looked into the research on Commercial off the shelf (COTS) games, and very few on the adventure game *The Legend of Zelda: Ocarina of Time*. This study aimed to examine if adventure games, such as *The Legend of Zelda: Ocarina of Time*, have an impact on vocabulary acquisition and learning from context as well as the future of COTS games in the Norwegian classroom. Fifty 9th graders in Norway were asked to participate in the study, where twenty-five participants would play the game, and the other twenty-five participants were asked to read a story written based on the original game. Both groups were asked to do a vocabulary pre-test and two vocabulary post-test a week apart. Results indicated that both groups initially acquired new vocabulary and were able to guess words based on the context in the pre-test and first post-test, but showed significant differences in post-test 2, where the playing group scored higher. The findings in the study suggest that adventure games like *The Legend of Zelda: Ocarina of Time* can give useful input for L2 learners vocabulary acquisition, as well as implementing COTS games in the classrooms in the future.

Norsk

Mange forskere har de siste årene fremhevet potensialet ved å bruke spill i undervisning i klasserommet, men svært få har sett på forskningen om Commercial off the shelf (COTS)-spill, og svært få på eventyrspillet *The Legend of Zelda: Ocarina of Time*. Denne studien hadde som mål å undersøke om eventyrspill, som *The Legend of Zelda: Ocarina of Time*, har en innvirkning på ordforrådstilegnelse og læring fra kontekst, samt fremtiden til COTS-spill i det norske klasserommet. Femti 9.-klassinger i Norge ble bedt om å delta i studien, der tjuefem deltakere skulle spille spillet, og de andre tjuefem deltakerne ble bedt om å lese en historie skrevet basert på det originale spillet. Begge gruppene ble bedt om å gjennomføre en vokabular for-test og to vokabular etter tester med en ukes mellomrom. Resultatene indikerte at begge gruppene i utgangspunktet tilegnet seg nytt ordforråd og var i stand til å gjette ord basert på konteksten i for-testen og i den første etter testen, men viste signifikante forskjeller i etter test 2, hvor spillegruppen skåret høyere. Funnene i studien tyder på at eventyrspill som *The Legend of Zelda: Ocarina of Time* kan gi nyttige innspill for L2-elevs vokabulartilegnelse, i tillegg til å implementere COTS-spill i klasserommene i fremtiden.

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1. Introduction

Since its first commercial debut in 1972 on the Atari, the video gaming industry has grown into a major emporium, and according to the Global Games Market Report (Newzoo, 2020), by 2023 the number of gamers worldwide will exceed three billion. Compared to the report in 2017 (Newzoo, 2017), the number was 2.2 billion gamers worldwide. With an increased popularity in gaming, schools all over the world are encouraged to integrate games as a platform for learning.

In recent years the research on language learning through games have become an area of interest for many, and for second language acquisition (SLA), the topic of using video games when teaching in an L2 classroom has gained a lot of traction over the year. This type of language learning through games is often referred to as digital game-based language learning or DGBLL for short (Chen & Hsu, 2019; Cornillie, Thorne & Desmet, 2012). Many studies have investigated the effects these games have on language learning. Many of these games, however, are specifically meant for learning purposes, and it is this category that is the most prominent. However, we generally divide DGBLL games into two main categories; games that are designed for learning and games that are designed to entertain.

Commercial off-the-shelf (COTS) games are typically used for entertainment, although we have seen an increase in these games used in language learning research (Chen & Hsu, 2019). These can be divided into several different categories of COTS games such as video games (DeHaan, 2005; DeHaan, Reed, & Kuwada, 2010), massively multiplayer online role-playing games (MMORPGs) (Rama, Black, van Es, & Warschauer, 2012; Suh, Kim, & Kim, 2010; Thorne, 2008), simulation games (Cooke-Plagwitz, 2008; Jauregi, Canto, de Graaff, Koenraad, & Moonen, 2011; Miller & Hegelheimer, 2006; Ranalli, 2008), and adventure games (Chen & Yang, 2013) (Chen & Hsu, 2019, p. 1). Although these studies all found a positive impact in the language acquisition, some researchers still raise concerns to the purpose of using such games in an educational setting.

Carnagey & Anderson (2005), Anderson et al. (2008), and Kirsh (1997) all raises the concern of how violence and violent actions can be rewarded in games, and that it may lead to aggressive and violent behavior. Another concern is the overall language used in these games.

As COTS games are meant for entertainment, and many COTS games might have a higher PEGI rating as they are aimed at different audiences, the language might not be suited for teaching purposes and language learning. These studies (Carnagey & Anderson, 2005; Chen & Yang, 2013) also point out the overall language level, as specific language is used, like especially technical and often rarely used words, as well as faster speech and text speed (Chen, & Hsu, 2019) and although many COTS games are created in different languages, most of these are targeted at an English speaking audience, thus it might make the language difficult to comprehend, especially for non-native English speakers.

If we look at the English curriculum in Norway, it clearly states that the school must provide an education that

give pupils insight into our history and culture is important for developing the identities of pupils and their belonging in society ... ensure that the pupils are confident in their language proficiency, that they develop their language identity and that they are able to use language to think, create meaning, communicate and connect with others. (The Directorate of Education, 2020).

Wagner (2004) points out that “*the real potential for a social approach to language learning lies outside the classroom*” (p. 615), and when looking at the increase of gamers there is no denying that the world of gaming is here to stay and that it has become an integrated part of many cultures in the modern world. Teachers are often told to meet the pupils where they are, and the digital world has become one of these platforms. Although research on the effects of games and language acquisition is seeing an increase, there is still a lot to uncover in order to see the full extent and usefulness that DGBLL, especially when it comes to COTS-games have, on second language acquisition.

There are many important aspects of learning, and how to acquire the vocabulary necessary to express oneself fluently in a new language. Using authentic texts through gaming can be a great way of learning exactly that. As games are multimodal and contain a diverse composition of different types of what is considered authentic texts (Somers-Arthur, 2015), they can be a gateway for Norwegian pupils to learn English. When looking at different ways of learning, it is important for teachers to pick out the proper language to use, which can be in the form of different word classes, the frequency in which the words appear, or lexical chunks (Munden, 2016). It is also important to look at how L2 learners actually learn words, how they retain these words and build further on the language learnt. Retention is often rooted in a deep connection to the long-term memory (Gürkan, 2018) and being able to move the

necessary vocabulary from short-term memory to long-term memory is vital for learning. However, this might be difficult for L2 learners in the Norwegian school system as only 222 hours are dedicated to English in three years of school for all lower secondary pupils (The Directorate of Education, 2020). Creating a healthy learning environment for pupils in such a short amount of time is a difficult task for any teachers, so it is important that teachers stay on top of what works and don't work in education, and we need to help each other come up with new and inventive ways to teach in the classroom.

This study aims to look into the possibilities that games can offer a classroom and educational setting and aims to see if 9th grade pupils in Norway are able to use games in order to learn new vocabulary and understand this vocabulary based on the context that the game gives them. The study contains two different groups of participants, one group of participants that plays the game, while the other group are handed a story that is based on the dialogue and interactions with text the first group encounters. In order to see if there is a difference in how pupils learn and if the context given in the game have an impact on the learning capabilities of pupils, a control group that only reads the text is necessary. This also plays on a key factor in learning, motivation, as games itself is a strong motivation to learn.

In a world that is in constant growth it is important to look at new options to bring into the classroom, in order to reach the majority of the pupils. The gaming industry is constantly growing and reinventing itself, and so is the classroom, and thus, finding new inventive ways of teaching and meeting all the pupils where they are is important. Even though COTS games, such as *The Legend of Zelda: Ocarina of Time* (OoT), are predominantly used for entertaining purposes, this study aims to examine the following questions

- (1) Is there a correlation between vocabulary acquisition and gameplay in a 9th grade Norwegian classroom?**
- (2) Is there a correlation between guessing from context and gameplay in a 9th grade Norwegian classroom?**
- (3) What is the potential future of COTS games in the classroom?**

2. Literature Review & Theory

Chapter 2 is divided into two main sections: Second language and vocabulary acquisition, and language acquisition and COTS games. Second language and vocabulary acquisition and its sub-chapters will focus on the already existing literature, in connection to language, vocabulary and grammar acquisition, choosing the correct vocabulary, learning through context, retention and motivation, as well as the connection to the Norwegian school system, its pupils and their language acquisition and the Norwegian school Curriculum. The chapter language acquisition and COTS games and its sub-chapter will focus more on language acquisition in connection to playing games.

2.1 Second Language and Vocabulary acquisition

When learning any language, it is important to build up a word bank and expand one's vocabulary in order to better express oneself in the target language, but how do we acquire language? In order to better teach how pupils learn the language, it is important to understand how we learn a language in the first place. This is especially important with any L2 learner as learning new languages can pose a challenge for the learner and the different barriers and learning burdens the pupils might carry.

Vocabulary acquisition is recognized as central to academic success (Chilton & Ehri, 2015, p. 439), and many academics contribute vocabulary knowledge as a critical role when it comes to reading comprehension skills (Biemiller & Boote, 2006; Ebberts & Denton, 2008; Chilton & Ehri, 2015; Ellemann, Lindo, Morphy, & Compton, 2009; Muter, Hulme, Snowling, & Stevenson, 2004; Stahl & Fairbanks, 1986; Stahl & Nagy, 2006) and is therefore an important part when it comes to language learning. According to the English competence aims after Year 10 in the LK20, a pupil should be able to “express oneself with fluency and coherence with a varied vocabulary and idiomatic expression adapted to the purpose, recipient and situation” (The Directorate of Education, 2020). Many linguists (Munden, 2016; Wilkins, 1972; Thornbury, 2002; Lewis, 1993; Davis & Kryszewska, 2012) are divided between whether grammar or vocabulary is the most important aspect of language learning, but

Munden points out that there might not be a very strict division between these two, when teaching English (Munden, 2016, p. 110). However, she also points out that grammar is one aspect of language we can often get around, as grammar points to when in time something has happened, but without the words and vocabulary “we can only communicate by pointing, smiling and miming.” (Munden, 2016, p. 111).

Wilkins (1972, p. 111-112) explains the difference between grammar and vocabulary as “while without grammar very little can be conveyed, without vocabulary nothing can be conveyed”. It might seem like vocabulary is a more important part of language learning, but schools often focus on the grammatical aspects of language in school, and Thornbury (2002) reasons that this might be due to that as grammar multiplies, vocabulary only adds. The question still stands, whether grammar or vocabulary is the most important aspect of language learning, and although there are linguists that support both, some linguists point to schools using a lexical approach to teach language properly, and Lewis (1993) also describes lexis is the core of language learning (Lewis, 1993, p. 89).

Some linguists (O’Dell, 1997; Pérez Basanta, 1996; Zimmermann, 1997), however, favor grammar over vocabulary acquisition in education, as this is an important part of speech, as well as making oneself understood. It has, for a long time, been the consensus that grammar would be taught in schools, especially for L2 learners as the approaches used in L2 teaching are of a preferable “closed” and manageable system of language that grammar rules often are preferred over vocabulary (Chacón-Beltrán, Abello-Contesse, & Torreblanca-López, 2010, p. 1). Richards (1976, p. 77) points out that in the eyes of second language acquisition (SLA) teachers, grammar, when argued why it is prioritized above vocabulary, seen as a more serious candidate, especially for theorizing. Chacón-Beltrán et al. (2010) argue that grammar teaching, compared to vocabulary acquisition in the L2 is often more favorable as this is an aspect of the English language that a teacher can control much better than vocabulary learning, and points out that vocabulary itself is acquired through the exposure of the target language instead. An often-used method in L2 learning, is the Grammar-Translation Method (Howatt, 1984; Rivers, 1981; Weisse, 1872; Zimmermann, 2010), and the test itself aims to assess the pupils’ language skills based on their ability to analyze syntactic structures, often with a focus on the conjugation of verbs. It was thought that as pupils studied for these tests, they would study specific literary language samples and then be exposed and acquire a much wider literary vocabulary (Rivers, 1981; Zimmermann, 2010, p. 5-6). In that way studying grammar would benefit the pupils as they would unconsciously be exposed to and acquire new vocabulary while consciously focus on the syntax of the language, and therefore also

strengthen the pupil's fluency of the language. While grammar is an important part of fluency, a strong focus on grammar can have an inhibiting effect on those beginning to learn a language (Davis & Kryszewska, 2012) as the language produced, sounds more like a speech, that might come off as stiff and rehearsed, in contrast to an actual conversation, using more informal words and sounding more natural. Although schools and education have had a focus on syntax, many linguists (Davis & Kryszewska, 2012; Laufer, 1986; Lewis, 1993; Thornbury, 2002; Wilkins, 1972) have expressed that vocabulary has, despite grammar-pro linguists expressing that vocabulary is acquired through the focus on syntax, suffered. Laufer (1986, p. 73) points out that vocabulary in the research on language acquisition has, until very recently, suffered from, what she describes as, stepchild status and continues

The reasons for this plight might have been the linguists' preference for closed systems describable by rules, the reaction of psycholinguists against the associative and the stimulus-responsive theories of learning and the interest of the methodologists in the beginning stages of language learning. (Laufer, 1986, p. 73).

It might therefore seem a change in how language is learnt, is on the rise. This is especially in regard to SLA teachers and the methods previously used, like the grammar-translation method. Although focus on syntax has been the consensus, and that many linguists (Chacón-Beltrán et al., 2010; Rivers, 1981; Zimmermann, 2010) prefer a focus on syntax and using the grammar-translation method, other linguists (Davis & Kryszewska, 2012; Laufer, 1986; Munden, 2016) points to vocabulary as the primary focus on language learning.

Learning English can be a hard task for many Norwegian pupils as words and expressions differ in the languages, and different words are needed in order to express oneself fluently and coherently. An approach often used for L2 learners is the use of authentic texts and speech to learn the language properly. What better way to learn a language than to get as close to its roots as possible? Davis & Kryszewska (2012) points to chunk learning as a correct way of learning a language to L2 learners as many words often occur together, like *by the way* and *for example* (cited in Munden, 2016, p. 112). They point out that chunk learning is a naturally occurring part of L1 speech, and therefore L2 learners should adapt this in order to learn the language naturally. A focus on chunk learning as well as learning individual words is an important part of language learning.

As lexical chunks occur as a natural part of speech, this is often found in games as well. Many games that use the English language uses chunks when communicating with the players and can therefore be used as a good material when learning chunks in English,

especially for L2 pupils. If learning chunks brings the learner closer to the natural speech of the language (Davis & Kryszewska, 2012), than natural occurring lexical chunks can add a lot of substance to a learner just from playing the game itself. *The Legend of Zelda: Ocarina of Time* does not shy away from using lexical chunks when creating dialog between the player and the different NPCs in order to drive the story forward. Some lexical chunks that are found at the start of the game and can also be found in appendix 3 are *the time has come*, *wake up*, *I am so happy for you*, *I don't know*, and *right now* (ZeldaCentral, 2021, 1:19-15:25). These are just some chunks that appear in the introduction of the game, and many other commercial off the shelf (COTS) games like *Pokémon* (Mixeli, 2020, 0:00-40:40), *Elder Scrolls V: Skyrim* (Game Update, 2018, 1:50-5:49), and *World of Warcraft* (Wowpedia, 2021) also used lexical chunks as this is a natural part of speech, and games are often made to mimic the natural ways that speech patterns arise. These are just a small selection of games, NPCs and parts of the games that contain lexical chunks, and some of these games also use a combination of text and speech in order to convey information to the player. Games can therefore be a great source of material when teaching chunks to pupils, as most games with text contain several chunks that is often used in daily speech and can therefore be a natural way for pupils to learn lexical chunks in English.

2.1.1 Word frequency and selecting the right vocabulary

When learning a new language, linguists suggest learning the language in chunks, as this mimics the natural way that native speakers of the language express themselves (Davis & Kryszewska, 2012; Munden, 2016). An important thing to remember, however, is selecting the proper vocabulary and chunks to learn. This all depends on the learner, as well as the purpose of learning the language. The English curriculum in Norway refers to this in a few different points throughout the competence aims after year 10. According to the Directorate of Education the pupils should, after year 10, be able to

*Use a variety of strategies for language learning, text creation and communication...
listen to and understand words and expressions in variants of English... express
oneself with fluency and coherence with a varied vocabulary and idiomatic
expressions adapted to the purpose, recipient, and situation... explore and describe*

ways of living, ways of thinking, communication patterns and diversity in the English-speaking world. (The Directorate of Education, 2020)

Although pupils at this stage in their education should in many ways be able to direct and control some of these words and chunks that they learn, a lot is left up to the teacher to assess and pick out the appropriate vocabulary. These words should both be classified within the function words as well as the content words to grow their vocabulary. One way of building this vocabulary bank is to interact with texts and other material that contain a plethora of different words. How much that vocabulary should be grown in order to express oneself is debated. Studies suggest that second language learners need to learn a much larger number of words than of native speakers (Nation, 2001, p. 9), but the number of words second language learners need in order to express themselves fluently is somewhat debated. Some researchers suggest that we only need around 2000 words in our core vocabulary (Munden, 2016, p. 113), while other researchers suggest a core vocabulary closer to 3000 words (Spiro, 2013, p. 98). Regardless of how big this number actually is, the importance lies in the vocabulary chosen.

One way of choosing the proper words and chunks to teach, is looking at the frequency of the words. Words that are used frequently appear more often in texts and conversations and therefore might gain priority when choosing the proper vocabulary (Nation, 2001). Frequent words are often also function words, which makes up a lot of both written and spoken language (Nation, 2001, p. 13), as well as content words that give depth and understanding of the context of what is written or spoken. There are many ways going about choosing the frequency of words, where one could either look it up online, at so called frequency lists (Munden, 2016, p. 113), but also using the material chosen in class to look at the frequency might be a good strategy as well. The material we choose also makes a difference as the material needs to be educational, and informative, but it is also important that the source material is relevant and engage the pupils to occupy them and engage them to further learning. As the world evolves, so does the need for proper material to teach and learn from. One way of engaging pupils when learning a new language is using authentic literary texts as the source material (Munden, 2016, p. 114). When we talk about authentic texts in linguistics and education, we talk about texts that are specifically written for any purpose other than teaching or learning about language (Spelfabet, 2018). These are texts are created to entertain, guide, convince, explain, inform, or to document (Somers-Arthur, 2015). This could be through books, newspapers, signs, but an authentic text itself can also be non-written

items like audio files, speeches, photos, video clips (Somers-Arthur, 2015) and I would therefore argue that another authentic text that fits the criteria would be games. As games are created for the purpose of entertaining and not to teach, having a rich and vast variety of different ways to look at the text, through books, signs, dialogue, paper, audio, visuals, and other forms of texts in the native language one could argue that games do fit the criteria of being an authentic text, and therefore might be suited for the classroom. As teachers, we need to find new and inventive ways to reach all types of pupils and using different types of authentic texts and literature is a great way of introducing language in a natural way for pupils to learn. Games can in many ways enrich the way we teach language and games is a platform that young people are often drawn to and spend a lot of time on. As I have worked in schools with young children, I see that more and more pupils, both male and female, come forward being gamers and play games on a daily basis with their friends. Being able to use a platform that most pupils are already familiar with can be a great way to teach pupils and meet them where they are.

Another important part when selecting the proper vocabulary is chosen the right level. If the vocabulary is too easy and the pupils already know the words it doesn't create any challenge for them, and thus, they will not learn anything new. This is a great way of using their retention skills as it brings forth old knowledge that they can test, but in terms of learning something new, the level of difficulty doesn't constitute any challenge. However, if the language is too difficult for the pupils to understand we encounter a similar problem, because the words will not get stored in the long-term memory and it might be demotivating for the pupils when they are unable to reach the goals that are set, and thus, learning cannot take place. The questions still stand, how do we regulate the vocabulary so that the new words and inputs are challenging enough for the pupils without making it too easy or too difficult? Krashen's input hypothesis (1982) questions exactly this, on how we move the pupils from one level to the next. According to Krashen acquisition occurs when new input is structured with what knowledge we already know (Krashen, 1982, p. 21-22). In other words, we learn when we build new knowledge upon what we already know gradually, and in a way that you can use existing knowledge you already acquired to acquire the new knowledge. What does this mean for this study in particular? In order to see if pupils are able to acquire and retain new words, it is important to select vocabulary that is not part of their knowledge level (Krashen, 1982, p. 20-21), but incorporate it with words and vocabulary that is already known to them.

2.1.2 Learning through context

When learning a new language, just as the words in of itself is important, the context of which we learn them is just as important. Words and expressions are often associated with an image or a feeling and thus, one can understand the meaning of a word, despite the language barrier. Munden (2012) explains these words as *receptive*, mainly because, although we are not able to produce these words ourselves, we understand them in a given context, like the English word *exit*. When visiting another country, for example Norway, the signs will not necessarily have the word *exit* written across it, but rather *utgang*, which is the Norwegian translation of the word. Although just reading the word *utgang* might not yield any understanding itself, combined with the traditional image of a person running out of a door together with the letters, yields an understanding. The word is given in a context. Munden (2016, p. 112) explains these contexts given words as receptive because although we cannot produce the word itself, you still understand it because of the context given.

Understanding through context is a familiar concept in the gaming world as many factors play a part in order to give the player a sense of understanding despite possible language barriers. Most game producers have a limited selection of translations of the game. When games are released, you are often asked to choose a preferred language when playing through the game. Some of the most common language options games provide are Japanese, English, Spanish, German, French, Italian, Russian, Portuguese, Chinese, Korean, Polish and Dutch (Nilsson, 2021; Nintendo, 2017; Nintendo, 2019). Although these games are often translated into a lot of languages, the most common language is the English language, and this is often used with non-English speakers as well. It is then important for the games to convey the necessary information in order to progress, and one way of doing this is through the context of which the information is given. This can be through dialog, or similar to the example earlier, through signs and pictures. Graphics are an important part of the game as it is a huge part of what the player sees and uses to engage with the game. Facial expressions and how the surroundings look often gives the players an indication of something that is going on or a clue to what the player need to do to progress.

When we look at the way language is taught, learning chunks are one of the most natural ways of learning a language, as it mimics the natural way that native speakers talk to each other (Munden, 2016, p. 112) and is therefore an important part of natural speech

patterns that will benefit L2 speakers. When learning a new language, it is important to learn new vocabulary in order to grow our understanding of that language and be able to communicate in new ways. Understanding new words, however, can be challenging for beginners, and learning single words can be difficult. Reading sentences, many L2 learners should be able to understand some words from the context of other words, and therefore create meaning of the words they read. The context of how the words are presented gives meaning to the reader (Munden, 2016, 112). L1 speakers, however, communicate largely through chunks, and therefore a lot of the context that L2 learners are able to understand words and learn new vocabulary is guessing the chunks through the context they are given. An example of this would be the lexical chunk *use your imagination*. The words separately, *use*, *your*, and *imagination*, might be difficult for an L2 learner to understand. Let's say they understand the verb *use*, but lack the understanding of the noun *imagination*. Seeing the word alone makes it difficult for the learner to understand and create a connection to the word, but in the chunk *use your imagination* the learner already has knowledge of some words and can therefore in the context of the whole sentence create meaning and understanding of the word. The lexical chunks themselves create meaning and understanding of individual lexical words.

2.1.3 Vocabulary and retention

It takes time for people to get to know each other and for acquaintances to become friends (Thornbury, 2002, p. 15). We also get along better with certain people with others as they might be similar to how we view ourselves or if we have similar interests. This is the same with words. For L2 learners, some words are easier to understand than others, some words are like our friends (Munden, 2016, p. 120). They are easy to get to know, because they are so similar to our own language. These words might differ from person to person as well as which language is the L1, and which language is the L2. They depend on our learning burdens (Munden, 2016, p. 121). A few examples of words that for a Norwegian L1 might familiarize themselves easier with in English could be words like *glass*, *cat*, *paper*, and *to see*. These words are easier to remember as they are often stored in our long-term memory, and Gürkan (2018, p 1438) claims that it is in the long-term memory we want the pupils to store words in order to learn and retain them better.

How vocabulary is remembered is another key factor. It is not only necessary to read and understand the words, but also be able to recall on these words when needed. There are many strategies that one can use in order to help pupils retain and learn vocabulary and Craik & Lockhart (1972) suggested a depth of processing theory that says that in order to retain words they need to be processed deeply at a sensory level. In other words, the sentences need to be understood in a context so the meaning to the learner is clear. This also means that there is a need to focus on the meaning of the word (Craik, & Tulving, 1975; Gürkan, 2018). In order to move words from short-term memory to long-term memory Munden (2016) suggest working with the words on a regular basis as to not have the words and vocabulary be forgotten. This also coincides with selecting the proper vocabulary to learn as well as the frequency of which they occur. Words that occur often are much easier to learn and retain than words we rarely see. This is also prominent with the words we use often as to words we rarely use. The Directorate of Education in Norway has decided that between 8th and 10th grade pupils have 222 hours in total dedicated to English (The Directorate of Education, 2020), which accumulates to on average 6.2 hours a month, or 1.55 hours a week. The amount of English that Norwegian pupils are exposed to in school on a weekly basis is quite lacking, and if a vital part of learning English is regular exposure as well as developing a deep understanding of the words in order to retain what is initially learnt, then that does not leave much room to teach for Norwegian teachers. There are also other factors, like motivation and the mood of each individual pupil in the class and other social gatherings that might affect these hours, so Norwegian teachers then need to get creative and effective when teaching Norwegian pupils in lower secondary school.

2.1.4 Motivation

Although not the main focus of this study, it is important to mention motivation when talking about acquiring and understanding a new language. As mentioned earlier, there is a significant focus and importance on choosing the right words and chunks to teach when teaching in an L2 classroom. Not only is there an importance of choosing the proper vocabulary for the pupils, but also finding material that suits the classroom, the needs of the pupils, their interests, as well as the relevance to the subject and the language learning itself.

It was briefly mentioned that giving the pupils themselves an opportunity to choose can greatly help when learning a language, and this has to do with the motivation for learning. When handed something and told that this is something that they have to do, the motivation of the pupils might affect the outcome of the lessons. Encouraging them to choose the words and chunks they themselves want to learn might instead have a positive impact on their own learning (Munden, 2016, p. 114) as they are now much more in control over their own learning, as well as taking responsibility of what they want to learn, but also what they need to learn. A key aspect of L2 learning is therefore motivation (Lasagabaster, Doiz, & Sierra, 2014, p. 1) and giving pupils the opportunity to choose, their own autonomy, creates incentive to learn. Classrooms in Norway today are diverse, and no pupil is alike, and therefore their needs and interests differ when learning. Having the pupils then choose the words and chunks from the text themselves might offer an extra boost of motivation and help expand their vocabulary in ways that might not be clear to the teacher.

When talking about motivation, a lot of a person's motivation stems from their attitudes towards something. This is a key part of Ajzen's (1988) *theory of planned behaviour*. A person's attitude toward something as well as the subjective norm, or the social pressure that is put on that specific person to perform makes up the two basis factors of Ajzen's theory (Dörnyei, Muir, & Ibrahim, 2014, p. 19). In order to do something successfully one must be motivated, but in order to be completely motivated one must also believe that they possess the ability to do it, as well as that they are in control when doing so. When these two factors are met, a person has full motivation to do a task laid before them (Dörnyei et al., 2014, p. 20). Giving pupils small tasks to complete are therefore motivating to the pupils as these smaller tasks can seem more manageable to the individual and they themselves are able to visualize the end goal as well as them being able to complete the task at hand. This works well with games, as games often give the players small tasks along the way to complete. In *The Legend of Zelda: OoT* the end goal is to defeat the great evil, which might seem like a huge task for players, but are quickly drawn into smaller tasks that they need to complete, for example fetching a sword and a shield in order to progress, and each step brings them closer to the goal. In terms of this particular study, the task the participants are given is to get as far as possible in the game within the 30 minutes, and therefore can be motivating to the pupils as they themselves are in control of how far that is and how they want to reach the goal. The end goal is to see vocabulary acquisition and the benefits this has in the current educational system, but for the participants, the pupils, they only see the end goal as

how far they can get in the game, and if they are able to read the text they are given and how many times they are able to complete said text.

Another point when talking about motivation is the type of texts that the pupils are exposed to. A traditional classroom might only offer a certain set of texts that might not engage the pupils enough. It is therefore important to use other types of literature in different forms in order to meet the different pupils in the classroom. The content of the texts is therefore an important part of motivating the pupils to read and learn (Nation, 2013, p. 102). Although being in a Norwegian classroom, pupils L1 might differ from one another, and therefore their learning burdens also differ (Munden, 2016, p. 121). With different learning burdens comes different needs and different literature options might be necessary in order to close those different gaps. Using games as an authentic literary text might work in favor of the motivation as other senses and stimuli plays a part. Engaging with the text in a different way, through music, graphics and picture, and different combinations of texts, instead of just reading it on a paper might offer motivation to the pupil to learn and have fun while doing so.

2.2 Language acquisition and COTS games

Although several of the studies on the use of COTS games in education showed promising results when it came to language acquisition, they still raised concerns for the purpose of these games used in the educational setting. As COTS games are typically made to the consumer and not for the education itself, the question that one must ask before using this in the classroom is: would this be suitable for my pupils and for the educational purpose that I will use it for? As this study will focus on vocabulary acquisition, that is where we will turn our focus to. Ranalli (2008), saw a clear increase in vocabulary with the combination of playing the game as well as supplementary materials that would help learn and retain the vocabulary from the game. Zhen, Bischoff, and Gilliland (2015), also examined the vocabulary knowledge using *The World of Warcraft* (WoW) and found that the words that would occur more frequently were better remembered. A similar result was found in Hsu's 2013 study on the same topic, using the game *Guild Wars 2*, where the participants went through several missions over a four-week period and then tested in the language.

These studies mention the benefits of language acquisition, especially with vocabulary, but there is still a lot of research to be done to find how relevant these games are in the educational system, especially in Norway and the introduction of the LK20. The LK20 opens up the possibility of different ways of understanding the English language and what specific parts the pupils should be educated in. The new curriculum opens for new approaches to learning that might have been difficult for teachers to implement. One of these approaches that has become more and more used is video games, and especially games that are made for educational purposes, like Minecraft.

2.6.1 Game violence and Legend of Zelda

As previously mentioned, the topic of using games in teaching is something that is on the rise. However, as the rise of the video game industry has become a more prominent part of our everyday life, studies on how this is and should be taught in schools and whether the outcome of using gaming as a platform for learning in school is beneficial is still under investigation (Chen & Hsu, 2019; Cornillie, et al., 2012). Studies done on this topic have shown promising results, and some games, like Minecraft, are becoming an integrated part of the education. Even with these promising results, studies show conflicting results and there is not much on the topic yet.

As Carnagey & Anderson (2005), Anderson et al. (2008), and Kirsh (1997) bring up a similar concern for the overall violence in video games and how violent actions that are rewarded in the games, might lead to violent and aggressive behavior. Carnagey & Anderson's study (2005) showed results of how aggressive and violent behavior in video games promoted these tendencies in the participants, regardless of if the game promoted and rewarded violent actions or not. The game used for this study could, arguably, be considered a violent game, as the protagonist fight through the game in order to save his world. This study, however, will not be focusing on the violence in the games, instead it will have a focus on vocabulary and whether the participants gained a broader vocabulary after playing the game. The topic of violence is still an important note to take into consideration when discussing whether or not *The Legend of Zelda: Ocarina of Time* would be a suitable game to use, and it might be necessary to conduct other studies to see if there is a correlation between OoT and

violence in order to further understand if this game and perhaps other games are suitable or not for educational purposes.

3. Methodology

In this chapter I will discuss the method that is used for this master thesis, as well as the advantages and disadvantages using quantitative research. This chapter will not only discuss and justify the choice of game, but also discuss the participant's age group when conducting this study.

3.1 Target group and participants

The study was conducted with a total of 50 participants from 9th grade in a Norwegian Upper Secondary school. The participants were recruited from different classes in groups of eight. As this study looks at the potential future usage of games in the classroom, through pupils' acquisition, understanding and retention of vocabulary, gender, proficiency level in English and whether the pupils had played an adventure game beforehand or not were of no significance for this study. As the world is in constant change, as well as the diversity in classrooms, it is important to find options for all pupils regardless of any personal traits, as listed above, and thus, all participants were chosen at random.

The participants were freely given the option to participate but were encouraged to do so by their teachers. Some teachers also had a pre-written list of participants when I came to the classroom. In addition, the participants were given the option to withdraw from participating in the study at any time, and in the case where that happened, other pupils from different classes were given the option to take their place in the study.

3.2 Measurement

This study conducted a set of different tests beforehand of the actual gameplay, as well as afterwards, although the only test that was significant for this study was the vocabulary test. The other tests were to eliminate any possibility that the participants would know what to look for during the actual gameplay or reading part of the study.

All participants were given a pre-test, and then would have 30 minutes of either gameplay or reading before given the post-test. The pre- and post-test were therefore given in close succession of the actual gameplay/reading. An additional test was given a week later to all participants in order to see if the words that they had encountered had been retained. The limit, which will be presented in chapter 3.2.3 Limitations, was set to 30 minutes. This includes the first arc of the game, where the main protagonist Link completes his first dungeon. This was measured through a test run with a few test subjects, including myself, that would play 30 minutes and record how far they would get into the game, where the test subjects were of different ages and whether they had played adventure games before or not. This ranged from being able to reach the first dungeon of the game as well as completing the first dungeon with very little time left.

3.2.1 Preparation

All participants were taken to a room available and given a brief overview of their involvement in the study. They were not told about the specifics around this study as it could affect the results but were informed that the study I was conducting was about gaming and learning. All participants were also given the option that I would present some of the results and what their participation meant when all data was collected.

When all participants had taken a seat, they were briefed on the study and the steps in which they would take part. Before they had entered the room, I had already set up the vocabulary pre-test with a code, either with the letter R or G, then a number, which would indicate if the participants were to read the story (R) or play the game (G). As these tests were laid out at random around the table the participants themselves chose which group they would be part of at random by choosing their own seats.

3.2.2 Vocabulary Tests

The study conducted adopted pre- and post-tests to examine the participants' vocabulary acquisition. The vocabulary tests were divided into two different tests, one pre-test and two post-tests. The pre-test had the participants translate a word in English to Norwegian through multiple choice (see Appendix 1). The post-tests were also a multiple-choice test where the participants were asked to connect the correct word corresponding to the sentence (see Appendix 2).

Both the pre-test and the post-test sought to try to confuse the participants in their translation and insertion of the words. In the pre-tests where the participants were asked to translate the English word correctly from the list given, the words would be similar to Norwegian translation of the word, or it would contain translations of English words that the participants might confuse the original word with. An example of this would be the noun *curse* which would be translated to *forbannelse* in Norwegian, however, some participants might confuse the word with the Norwegian word for *course* – *kurs*, or *to cure* – *kure*, because of its similarities to the pronunciation in both languages. Some of the words were also directly translated into the Norwegian language, without actually having a meaning in Norwegian. An example of this is the verb *to undertake* which was directly translated to *underta* in Norwegian. It has no meaning in the Norwegian language, but it sounds similar to other Norwegian words that participants might confuse the two.

As mentioned in chapter 2, in order to gain and retain vocabulary it is important to interact with texts that contain a plethora of different words, especially words that are easy to recognize, in order to build up a vocabulary bank. These recognizable words are often words that the learner encounters frequently (Lightbown & Spada, 2013, p. 61-62). The words for the vocabulary test that the participants were given, however, were chosen by me. These words were chosen from the word classes nouns, adjectives, verbs, adverbs, and pronouns. The words were chosen based on what words a typical 9th grade pupil in Norway would not encounter often, and the words were also chosen deliberately to not be appropriate for their level, therefore having them guess through the context of the sentence that they would learn through either playing the game or reading the story. The point of the pre- and post-tests were to first map their knowledge of the words, and then see if they would be able to put these words into context either from reading the story or playing the game, both of which contain

all the words chosen for the test. Therefore, unless the pupils would have encountered these words previously, which might be the case for certain words, they would not be able to guess the correct word in the pre-test and we can then look at the differences in the answers, before and after reading and gaming session. It is important to note, however, that the participants might be lucky in guessing the right translation of the word, even if they had no prior knowledge or understanding of the word, but that is a possible occurrence when they chose at random. If we take into consideration that they are guessing at random with a 1/5 chance of getting the correct answer this would also be reflected in the total score.

All participants would start off getting a test, which is referred to as the vocabulary pre-test (see appendix 1). The pre-test is a multiple-choice test where the participants were asked to translate a word from English to Norwegian. The English words were chosen from the section of the game that the G participants were playing through, and that the story (see appendix 3) that all R participants were reading was based on.

As mentioned in sub-chapter 3.3.2 Vocabulary test, the words were chosen with the intent that the words would be considered at a harder level than the typical Norwegian 9th grader, in order to have the participants guess from the context. The pre-test, however, was designed to try and assess around what level the participants were at. Since participants were chosen at random with different proficiency levels in English, it was important to assess this before going ahead with the rest of the study and the other vocabulary tests.

The participants were given five different options (a – e) for each question on the test. The translations of the word would be designed to have one correct translation, while the other four options were words that might be similar to words in English, for example *curse* and *cure*, while some words would be similar to the Norwegian translation of the word, for example *gjø* and *gjør*. Some of the words were also designed to confuse the participants as the English words were also written the same in Norwegian, but had different meanings. An example of this was the word *gift*, which in English, in the context used in the story, means a present, but in Norwegian the word *gift* can mean *poison* or *married*.

After initially playing or reading the game, all participants were given a vocabulary post-test (see appendix 2). Similar to the pre-test the participants were given a multiple-choice test where the participants were asked to fill in the correct English word in the sentence. They were given five different options (a–e).

This test was designed a bit differently than the pre-test where instead of translating the words to Norwegian, they only had to fill in with an English word. Although it was designed a bit differently than the pre-test some of the same tricks were used in order to have

the participants understand the word from the context. As the pre-test sought to assess their overall level, the post-test, however, was created to assess whether the participants had gained an understanding of the word from playing the game or reading the story, through giving them a new sentence that would test their knowledge and understanding of the game.

One way to try to confuse the participants in the post-test was through having options that were or sounded similar to the correct word, but not the word itself. An example of this is in question 3 (see appendix 2), the correct word was d) *wimp*, but they also had words like a) whip, and b) whimsical. Other ways of having the participants guess from context was the use of singular and plural nouns, like *outsider* and *outsiders*, while verbs were given different tenses, like *muster*, *mustered* and *mustering*.

After the tests were conducted it was discovered that in question 18 of the post-test (see appendix 2), there was a slight mistake, where instead of having option a) bum as the clear, correct answer of the five options given, it could be interpreted that option b) bums could also be considered as the correct answer. Option b, however, was regarded as a wrong answer when correcting the samples. It was determined that this would not affect and impact the scores to a degree that it would falsify the results presented.

As this study aims to examine the correlation between vocabulary acquisition and gameplay the participants were put into two different groups. One group would play the game on a console (Nintendo 3DS or Nintendo Switch), and a control group would be reading a story based on the dialog from the game's first arc, from the start of the game and up until the completion of the first dungeon.

The story (see Appendix 3) was written for the control group, also called group R, and is based on the dialog that Link and the player encounter from the start of the game and up until the end of the dialog from completing the first dungeon of the game. The dialog was written the same, apart from gameplay instructions, and all the words that were chosen for the vocabulary tests were based on the dialog that all participants would encounter throughout their session.

3.2.3 Limitations

One way of retaining vocabulary is through frequent exposure to words (Lightbown & Spada, 2013, p. 61-62). Even though this is proven to be an efficient way of learning

vocabulary, this was not done for the vocabulary test, as the words were chosen specifically for the general level and proficiency at a 9th grade level in Norway.

As the participants were put into two different groups, a player group and a reader group, there were additional limitations that needed to be adapted as well. The focus on this study was limited to the main speech and dialog given during the first act of the game, and the story created for the reading participants were based on the original dialog from the game. This also implies that there is a limit to how far into the game the playing participants could reach. This was done to create a story that would be compelling enough for the reading participants without them losing focus, but also enough time for the gaming participants to get into the game and the story. It would also mean that the exposure to the dialog and text would be the same for both groups.

Another limitation that was discovered during the first playthrough was the difficulties of finding the necessary items in order to progress in the game. In order to gain access to the Great Deku Tree, Link has to find a sword and a shield that would be satisfying one of the NPCs of Kokiri Forest, Mido. The reports indicated that the sword was very well hidden, and thus, several participants could not get past half of the intended story arc. When given simple instructions on how to find the sword, the participants would play another 30 minutes and then would be able to end their playtime somewhere between the start and the end of the first dungeon, as intended.

A set of simple instructions was given to all the playing participants, as it would not interfere with the gameplay or acquisition of vocabulary itself. These instructions included how to find the sword in order to progress, that the participants had to collect money in the game in order to buy a shield. Although it was clearly stated in the game, the circumstances of how to obtain these two items were considered vague to some participants. These instructions were then written and drawn on the board to indicate where they needed to go. They were also instructed to stay clear of a particular area called *The Lost Woods* that is open to the player at the start of the game, but is designed to trap the players in the area while making it hard to escape. These instructions were simple and clear as to not interfere too much of the reading process itself, but enough to hint them into the direction so they could obtain the necessary items.

All participants were given instructions on what to do in their group. These instructions, however, differed between the groups. As mentioned, all participants in group G were given a set of simple instructions on how to find the necessary items in order to progress. They were not informed, however, that it was mandatory to read all the dialogue. As

the game is an adventure game and has a focus on exploration, not all dialogue options are mandatory. Some dialogue options on how the controls function in the game were cut from the story, but other non-mandatory dialogue options were included as it helps drive the story forward for the reader as well as the player. The players, however, could skip some of the dialogue by simply not going to the specific NPC that would offer that particular dialogue option. They were not informed that it was mandatory to go through all dialogue or that reading the dialogue was a criterion, but were, however, informed that the game itself would give them instructions on where to go and what items to collect. It was up to the player to either talk to the NPC's or click through the dialogue without actually reading it.

One limitation of this study was in the form of consoles. As the consoles and games were provided by me, the groups that would be able to participate through gameplay at any time was limited to four participants. This limitation, however, was solved by using several different days in a span of two weeks where groups of eight participants (four participants for each group) would go through the tests and gameplay and/or reading.

3.3 The Legend of Zelda: Ocarina of Time

The game that was chosen for this study was *The Legend of Zelda: Ocarina of Time*. There were several reasons as to why this game, in particular, was chosen. As many recent studies focus on serious games (Chen & Hsu, 2019; Cornillie et al., 2012; Johnson et al., 2005; Johnson, 2007; Rama et al., 2012; Jauregi et al., 2011) where the purpose of the serious games is to educate, focusing on learning, healthcare, sustainability projects, and training and consultancy (Grendel Games, 2022), rather than of the traditional playing for entertainment, this study looks at games made for the purpose of entertainment.

One of the main factors of this study is using Commercially off the shelf games (COTS), games specifically designed to entertain, and although several studies, research the effects on COTS games in the classroom (Cooke-Plagwitz, 2008; Ranalli, 2008; Suh et al., 2010; Chen & Yang, 2013), none of these investigated The Legend of Zelda franchise. These studies also use games that are free to play or are relatively low in cost, which The Legend of Zelda franchise is not.

Another reason of using *The Legend of Zelda: OoT* is the story and what the game is about, and the many topics explored in the game that reflect many of the same topics that are explored in the classroom. The game is about a young boy, Link, who sets out on an adventure to find his own destiny and defeat evil. The game also goes over a seven-year period, where the hero goes from a young boy to a young adult. The game covers a lot of interesting topics that might resonate with people in different ways, especially about the topic of being different and finding out who you are. The protagonist of the game grows up in a village where he is treated differently, because he is different. It also explores diverse cultures and how different cultures interact with each other. Some other familiar topics that are common to explore in the classroom as well are friendship, exploration, mystery, the fight between good and evil, “zero to hero”, courage, time, and growing up. The game also explores the power of building up the right mood through the graphics as well as the music, making this game full of opportunity for teachers if used correctly.

Although all these themes are explored in the game, it was specifically the acquisition of vocabulary that was landed on for this study. Just as the game uses its graphic and music to convey specific feelings and tones in the player, it uses vocabulary as a tool to drive the player forward in the game as well. One of the ways this is done is through the use of both modern and archaic, also referred to as Shakespearean, English. Most characters, or NPS, in the game use the English that we are used to reading, but some characters use the Shakespearean English. This type of language is used in characters like the Great Deku Tree, which is portrayed as old and wise and provides wisdom to the protagonist. This is a common trope used in several different games.

The Legend of Zelda: Ocarina of Time is the fifth game in a long series of games that has been in production since 1986, which its first release, *The Legend of Zelda* (RadioTimes, 2022). It is the game that has, as of 2019, sold the second most copies out of any Legend of Zelda game with 13,22 million copies sold, just shy of the new title, *Legend of Zelda: Breath of the Wild* with 13,61 million copies sold (Clement, 2021). It is a game that renewed and refreshed the series with 3D graphics, which in 1998 were an uncommon sight for most games. It has made its mark on the adventure game genre as a whole, which makes this game a viable candidate when looking into adventure games.

The Legend of Zelda: Ocarina of Time is also a game that has been a part of many childhoods since its release on the Nintendo 64 in 1998. As this game was part of my own childhood, I chose this game in particular as I remember learning English vocabulary from

playing games such as OoT and want to look further into the potential of using such a game in the classroom.

3.3.1 Drawbacks of using OoT

There is, however, one major drawback, that I will discuss even further in chapter 5 that needs to be acknowledged when using such a game in the classroom and that is the financial issue of using this game, or any COTS game. As mentioned, other studies using COTS games for their studies and research would find cheaper alternatives, or even free to play games, while Ocarina of Time is a game that is quite expensive. Most schools in Norway are not able to use as much money on COTS games, as these resources might be needed for other types of equipment for the school. So, the question that needs to be discussed is if the value of the game in terms of its educational gain is worth the expenses needed in order to purchase enough consoles (Nintendo 64, Nintendo 3DS or Nintendo Switch) and games in order to make it accessible to the entire classroom.

Other minor issues of using a game like *The Legend of Zelda: Ocarina of Time*, is the length of the game itself. Statistics show that *The Legend of Zelda: Ocarina of Time* have an average of between 25–36 hours of completion time depending on if players want to just beat the main game or complete it 100%, with everything completed and unlocked (Davis, 2022). This is based on statistics that 1300 players have reported. Although this particular study only looks at the first 30 minutes of the game, the intro, bringing the whole game or parts of the game into a classroom does require quite a bit of time in the classroom.

Not all pupils have much experience or even interest in playing games, as they might have other interests outside of school instead. Although the gaming industry is growing and we see an increase in gamers amongst pupils in the Upper Secondary, there are still pupils that might not have an interest in playing games in school. This argument, however, can also be flipped, as some pupils would prefer this type of learning, while more traditional ways of learning, for example, reading, writing, and watching documentaries, might be less motivational.

3.4 Procedure

All participants in this study would first be given the vocabulary test, also referred to as the vocabulary pre-test. Then, depending on which group they would be selected in, the participants would either play the game for 30 minutes or read the story for 30 minutes. Then they would be given another vocabulary test, also referred to as the vocabulary post-test. All participants would then, a week after their initial gameplay, get another vocabulary post-test to see if the vocabulary they learnt was retained. The complete procedure of the experiment is shown below (Figure 1). Very few instructions were given to the participants, except for the simple instruction that was given to the playing participants.

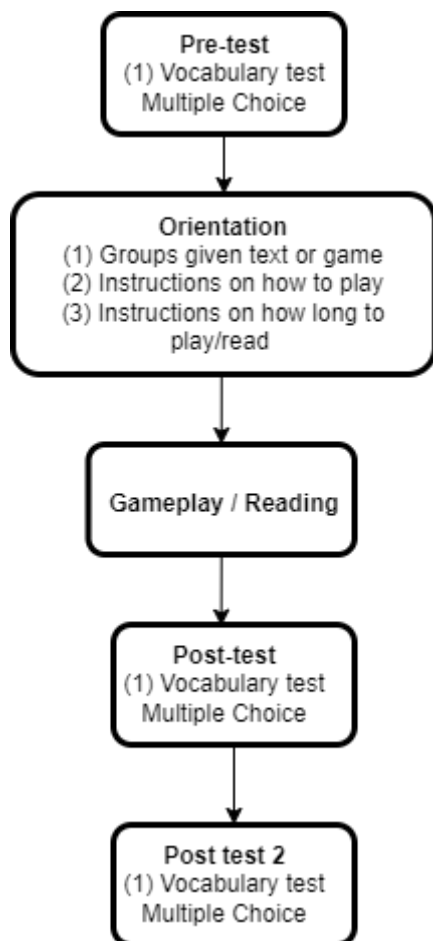


Figure 1 Flowchart of the experiment procedure.

3.5 Ethical considerations

When conducting any type of research, it is especially important to reflect on all the ethical considerations that one must take in order to protect all participants in the study, but also the data itself.

When collecting data, it is important to factor in what type of research you are collecting. For this study in particular the data collected are quantitative in the form of multiple-choice tests, and data extracted from these types of tests are often in a numerical form, and the data material used in this study is expressed as averages and variances, in tables and graphs (Befring, 2015).

As most of the ethical decisions any researcher makes when conducting any type of research or study are contextually situated (Cohen, Manion, & Morrison, 2018, p. 111), there is an increasing importance that the researcher makes educated decisions that do not compromise the integrity of the research itself, but also participants with the different ethical issues that arise.

3.5.1 Validity and reliability

When conducting any type of study, it is important to think about the validity and reliability of one's research in every step of the process, from start to finish. It is important to keep in mind that although threats to validity and reliability cannot be completely eliminated (Cohen et al., 2018, p. 245), having these two concepts in mind throughout all stages of the research can help reduce this threat. These two concepts go hand in hand and work off each other.

After deciding and creating research questions that one would like to answer, before going ahead with the research, one must consider how to gather the information needed in order to answer said research questions. Validity questions if the method chosen gives a real and truthful picture of the research or if it is polluted by other factors (Befring, 2015, p. 51). The research itself becomes worthless if the data collected is invalid (Cohen et al., 2018, p. 245). It was seen as the best way to possibly answer, or at the very least enlighten the research questions in this study would be to conduct vocabulary tests on the participants. In order to look at if participants are able to understand words in context, giving them a set of words that

are considered to be outside of their general knowledge and then giving them multiple-choice answers that would test their understanding of English and Norwegian would be the most effective solution to answer the research questions. As this study is only collecting the data, however, it could be the case that participants already had prior knowledge of the words, as there were no interviews conducted in order to uncover this. This was attempted to be reduced by having all participants go through three different tests in order to look at what prior knowledge participants had, and the new knowledge they might have gained from the study.

It is also important to note the scale and type of study. This is considered to be a small study, with only twenty-five participants in each group (totaling fifty participants). As the scale of the study is quite small, the results might not reflect the whole picture and should not be generalized for the entirety of the participants and others that might not have been able to participate and give their results. As this study is also of a quantitative nature, generalization is also a feature that validity strives to be faithful towards (Cohen et al., 2018, p. 246-247). Another consideration to ensure the validity of the research is the timescale (Cohen et al., 2018, p. 267), which the time frame between the first part of the study (pre-test, playing/reading the game, and post-test 1) and the second part of the study (post-test 2) was one week. This was to ensure that enough time had passed between post-test 1 and post-test 2, but also ensure that not too much time had passed between the two tests. This is important in order to look at the acquisition of words, where time is needed in order to look at the acquisition. If waiting too little, it would not ensure that the participants really acquired the knowledge of the new unfamiliar words, and waiting too long, would not give the participants a reminder and repetition of the words.

After making the important decision on how to conduct the study and after collecting the necessary data, it is important to look at the accuracy and stability of the data itself, i.e., the reliability of the research (Befring, 2015, p. 53). This was ensured in several different ways. One important part of reliability is if the answers are in a given category into which the answers can easily be divided (Befring, 2015, p. 54). In quantitative data collection, reliability concerns the stability, equivalence, and internal consistency (Cohen et al., 2018, p. 268). Stability is achieved over time with similar samples, which are reflected in that all participants did the same tests, with the same possible answers over a brief period of time. The equivalence was achieved through the different tests done, reflected in the pre-test and the post-tests. These two tests sought to gather some of the same information, but were constructed in two different ways; translate from English to Norwegian, and input the correct English word into the sentence. Both tests looked at the participants knowledge and

understanding of the same words, in two different ways. Just as all participants conducted the same tests, which were also split into two different forms, the post-test was also conducted a second time to compare results, the test/retest method (Cohen et al., 2018, p. 269).

An important factor that kept the anonymity and integrity of all participants were the fact that it was the individual participant themselves that had any information about the group and number they were given, and therefore it was entirely up to the participants themselves to remember and take the correct test for the post-test 2. This could be considered a lack of reliability as there is no way to know for sure that all participants did, in fact, pick the right test on the last week of testing. All participants, however, gave a very clear indication that they knew their own numbers and groups and there was not an incident where any participant indicated that they had not received the correct test, which indicates that they were all able to correctly remember and pick out their own tests.

3.5.2 Protection of participants

One of the most important aspects of ethics when collecting data is the protection of one's participants. All participants have a right to be protected when collecting data, especially personal data about them. It is then important to look at the nature of the participants and the type of data collected about them (Cohen et al., 2018, p. 111-112). This is especially important when research is conducted on children, who are also protected by law (Befring, 2015, p. 32).

When talking about the ethical implications when having children participate in any study, Befring (2015, p. 33) emphasizes the importance of creating a positive experience for all parties involved. As control groups are typically associated with lesser results, it is especially important that all participants in the control group, as well as the experimental group, are taken care of in a way that does not crush their expectations when participating. This was especially important for this study as many of the participants expressed concern when having to take a vocabulary test. As the researcher, I made it clear that any answer they gave would not impact their own school, and would not be seen by anyone but myself, and they were made very clear that I would not be able to identify any of the participants as well. They were not given any of the corrected tests back, for two reasons; it was of no interest in the study, and it was of no interest to the participants. It was also made clear to all participants

that regardless of which group they were placed in, all data would contribute to a bigger picture, not just whether one group did better than the other.

As this study did not collect any type of personal information, not about the participants, about their gender, sexuality, names, characteristics, or any other personal data, it would not be required to have the participants sign a consent form. All participants were, however, informed in detail about the study, what their participation and involvement in the study would mean, as well as the option to withdraw from the study at any moment in time. As the participants were divided only into numbers that they themselves knew, there would be no possible way to identify any of the participants.

4. Results & Analysis

In this chapter all results will be presented. This chapter will present the overall results for each participant and their individual tests, before analyzing the results, pointing out any participant that deviates from the standard results. Then the average results for each group and test will be presented, before analyzing the results. Lastly the results of each individual answer for each of the test is presented before analyzing the overall result and any results that deviates from the norm.

4.1 Vocabulary tests

A total of 50 participants throughout 9th grade at a Norwegian school volunteered to participate in this study. All participants did a total of three tests, one pre-test and two post-tests. All participants finished both the pre-test and post-test, but two participants, one from group R and one from group G, were unable to finish the third and final test, the second post-test.

All participants did the pre- and first post-test together with playing or reading during the first week of the study, while doing the second post-test one week later. They did not get any information about the words and did not work through the previous tests. Figure 2 below is a graph containing all results from all three tests for each participant in group R divided

into colors for each test. There were 25 participants (x-axis) in the reading group (group R) and all tests that were conducted had a score system rewarding each correct answer one point, up to a maximum score of 20 (y-axis).

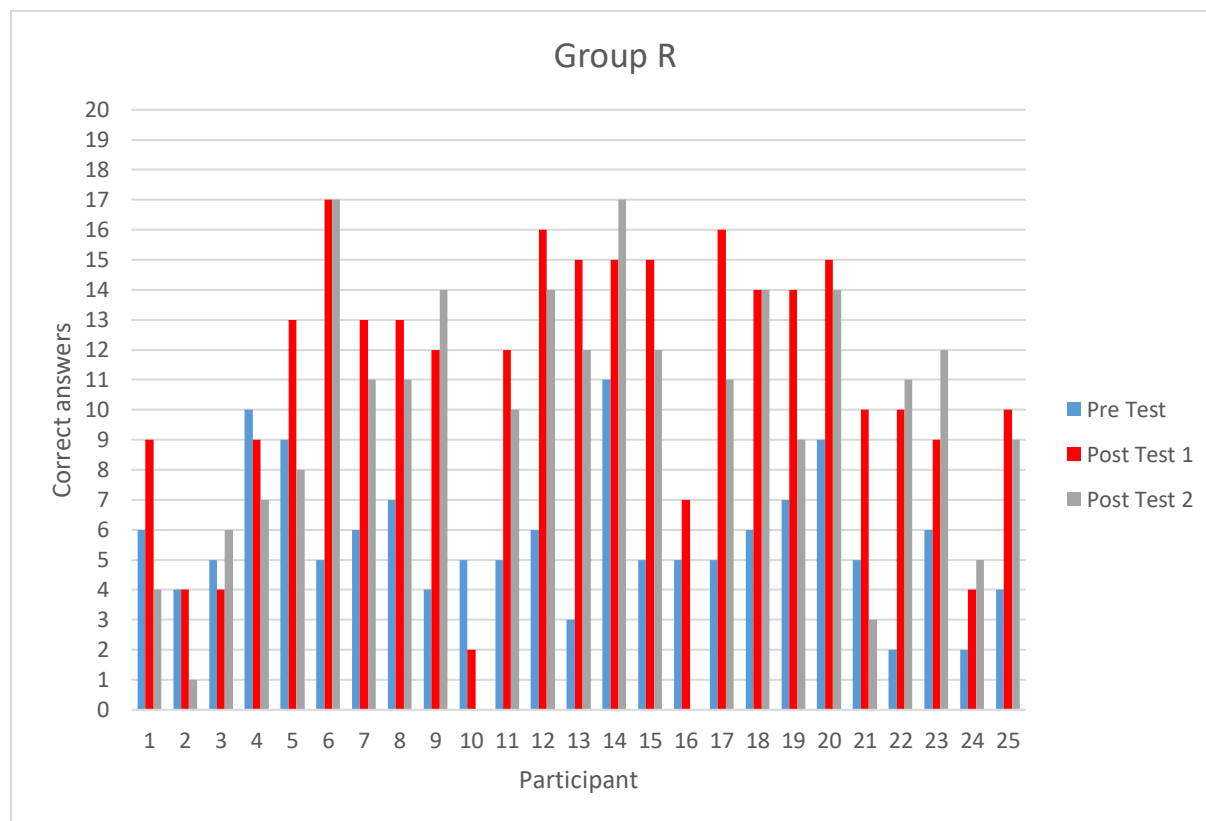


Figure 2 Graph of all participants in group R and number of correct answers for each test conducted.

In group R, the results showed a much higher score from the pre-test to the first post-test, showed in blue (pre-test) and red (post-test 1). Some participants scored equal or lower, participant R2, R3, R4 and R10, but the majority showed a better result between these two tests. These participants (R2, R3, R4, and R10), with the exception of R3 who scored the best on their second post-test, scored equal or worse from one test to the next, throughout the whole testing period. The overall results show, however, that the majority scored better on post-test 1 than the pre-test and the post-test 2. In Table 1–3 presented below, there is an average score for each test, that reflects the results in the graphs.

When looking at the second post-test, showed in grey, the results varied a bit more from each participant in group R. While six participants scored equal or higher from the first post-test to the second post-test, the majority did worse. This was one of the predictions that

were made as I expected that most of the participants would score lower on the second post-test than to the first. I will discuss this further in chapter 5, but this was an expected result due to the fact that none of the participants had worked with the previous tests, gotten any results back or got any input from me, before taking the second post-test. As these are words they are not familiar with and not worked with previously, they are stored in the short-term memory, and therefore would not be able to recall knowledge of these words (Gürken, 2018).

Moving on to group G, Figure 3, below, is a graph containing the results from all three tests for each participant in group G divided into colors for each test. There were 25 participants (x-axis) in the playing group (group G) and all tests that were conducted had a score system rewarding each correct answer one point, up until a maximum score of 20 (y-axis).

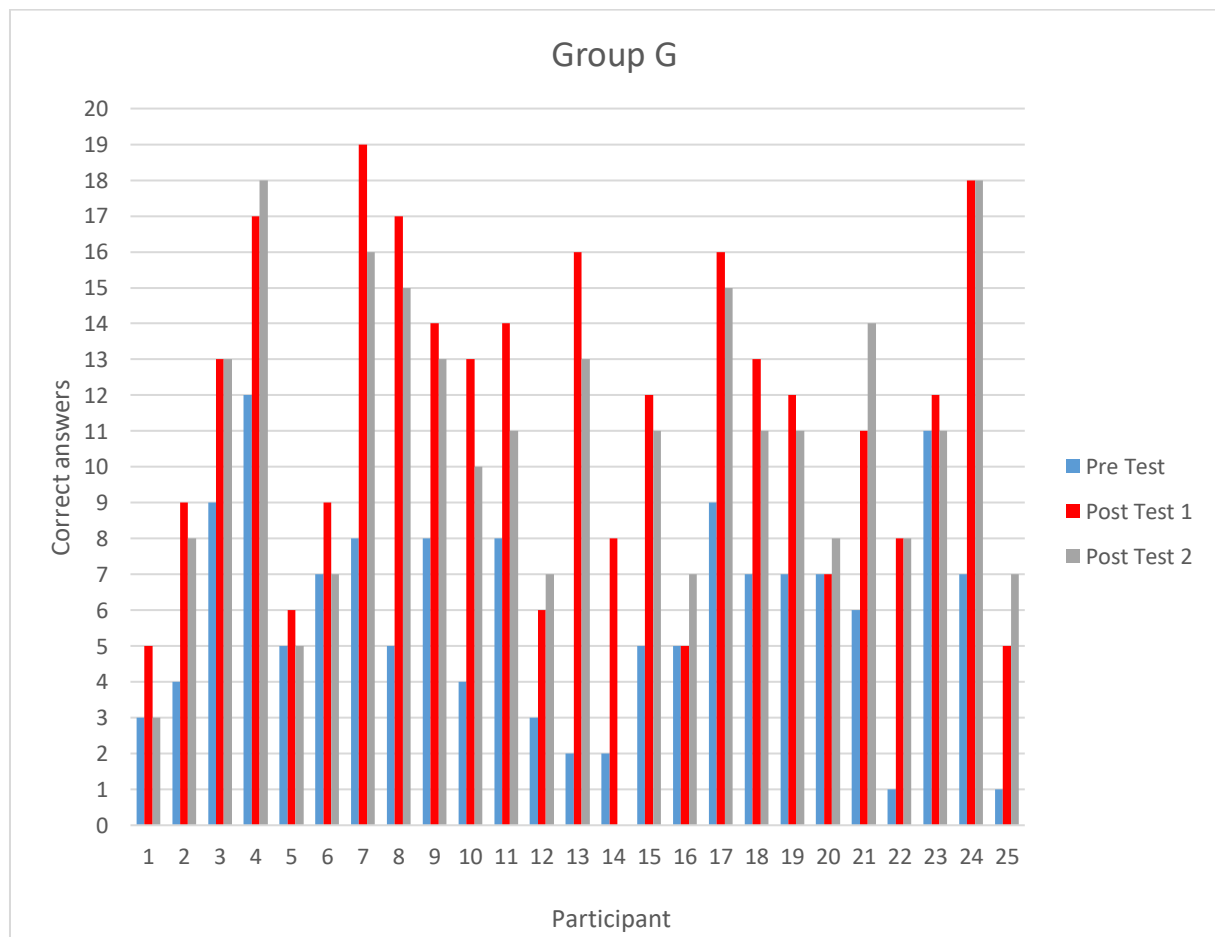


Figure 3 Graph of all participants in group G and number of correct answers for each test conducted.

Similar to the first group, group G, as expected, scored better on post-test 1 than on the pre-test. This was predicted because of the fact that the words chosen were of a level that were considered to be above 9th grade level, and the participants had not yet been exposed to the words from the game. Since post-test 2 was conducted shortly after all participants had either read or played the game, it was expected that most participants would be able to recognize words that they had encountered. All participants in group G scored better on the post-test 1 (red), than the pre-test (blue), with the exception of participant G16 and G20, who scored equal between the two tests. Compared to group R who had a much higher number of participants that scored equal or worse between the two tests, group G scored better. Although group G scored better than group R, the overall results showed that they scored about the same number of points between the two groups, and the difference between the two groups, showed in Table 1 and Table 2 below, were about the same, with group G scoring slightly higher overall.

The second post-test, showed in grey, much like group R, showed a much more varied result than from the first post-test. It is important to note that there was one participant from group G that did not finish post-test 2. 9 out of the 24 participants in group G who finished post-test 2 scored equal or higher compared to post-test 1. This number was greater than from group R. The majority of the participants from group G, however, did, as expected, worse in post-test 2 than in post-test 1. This will be discussed in more detail in chapter 5, but this reason was due to the fact that all participants, regardless of which group they were put in, had no interactions or input from me with the words they had encountered, other than in the pre- and post-tests, as well as the story that they read or the game they played between the week that they did the first part of the study to the final part the week after.

4.1.1 Pre-test

The first test that all participants went through was the pre-test, which sought to establish a foundation of what the participants already knew and their guess of what the English words meant in Norwegian. As mentioned, the test was created to be harder than the average 9th grade level, and this was also reflected in the average score for each group, in Table 1 listed below.

The original hypothesis speculated that the pre-test results would show about the same score for all participants, regardless of which group they were put in. This is shown with the average score presented in Table 1. The groups averaged a score of 5.68 for the reading group (R), and 5.84 for the gaming group (G), out of 20. Both groups showed a similar result, where the difference between the groups were 0.16.

Table 1 Test scores of the vocabulary pre-test- column shows the two control groups, reading (R) and gaming (G), as well as the difference (d) in average for group R and G, while the row shows the Average score (A) out of 20, as well as the worst (w) and best (b) score for each group.

| <i>PRE</i> | <i>A</i> | <i>w</i> | <i>b</i> |
|------------|----------|----------|----------|
| <i>R</i> | 5,68 | 2 | 11 |
| <i>G</i> | 5,84 | 1 | 12 |
| <i>d</i> | 0,16 | | |

Another point to note is the worst (w), and best (b) scores for each group, which was similar for both groups. The difference between the two worst scores were 1, and the same for the best results that showed a difference of 1 for both groups. This also coincides with the original hypothesis of having similar results for most participants, regardless of the group they were placed in. The best and worst scores did not differentiate between how many participants ended up with the scores presented in Table 2.

4.1.2 Post-test

After all participants had gone through either a session of playing the game or reading the story, they were given their first post-test. This test examined if the participants were able to understand the words they had encountered in the text or the game and having all participants place the correct word in their correct number for the nouns, as well as the correct conjugation of the word for the verbs. It also examined if the participants were able to correctly assess whether the missing word in the sentence was a pronoun, adjective, or

adverb. The post-test contained the same words used for the pre-test and was also designed to be harder than the average 9th grade level, in order to see if the participants would be able to guess and understand the words based on the context given. These results were presented in Table 2 and presented as the average score for each group.

The original hypothesis speculated that the test scores for the first post-test would be high, as the words would be fresher in mind, due to the pre-test containing all the words, as well as the fresh gameplay and reading session. It was, however, originally hypothesized that the score of the gaming group would be significantly higher than of the reading group. This was, as explained, due to motivation working as a driving factor to complete the project. The results, however, although showing a clearly higher average result score from the pre-test, with group R scoring on average 11.012 and group G scoring on average 11.4 out of 20, showed no significant difference between the two groups, as the difference between the averages was at 0.28.

Table 2 Test scores of the vocabulary post-test 1- column shows the two control groups, reading (R) and gaming (G), as well as the difference (d) in average for group R and G, while the row shows the Average score (A), as well as the worst (w) and best (b) score for each group.

| <i>POST 1</i> | <i>A</i> | <i>w</i> | <i>b</i> |
|----------------------|-----------------|-----------------|-----------------|
| <i>R</i> | 11,12 | 2 | 17 |
| <i>G</i> | 11,4 | 5 | 19 |
| <i>d</i> | 0,28 | | |

Looking at the worst (w) and best (b) scores presented in Table 2, there was, although quite small, a difference between the two groups, with a difference between the worst scores of 3, with a difference of 3 again for the best scores. As the hypothesis speculated that the difference in the two groups would be higher, the scores presented in Table 2 were divergent. However, there was a slightly bigger difference between the two groups, than from the previous test. The best and worst scores did not differentiate between how many participants ended up with the scores presented in Table 2.

Moving on to the final test, post-test 2, the results showed a much bigger difference than what was expected. I originally hypothesized that there would be a slightly lower score

and average from post-test 1 to post-test 2. However, what I did not anticipate was that group R would score significantly lower than group G. I initially thought that group G would score lower than group R, since I did not instruct the participants to explicitly read through the dialogue that they were given, but rather to explore. It was explained to all participants in group G that they were given instructions in the game on what to do, but it was not further implied that it was mandatory to read the dialogue. The average score of the second post-test were done out of 24 participants as one participant from each group were not able to attend the last test.

Taking a look at Table 3 below, group R scored, on average 9,67, which is a difference of 1,45 from post-test 1, while group G scored, on average 10,83, which is a difference of only 0,57 from post-test 1. The score between group R and G for post-test 2 was 1,17, which is a much higher and significant difference in the averages than from the two previous tests. Although the scores were lower for both groups, group G scored much better than group R for their final test.

Table 3 Test scores of the vocabulary post-test 2- column shows the two control groups, reading (R) and gaming (G), as well as the difference (d) in average for group R and G, while the row shows the Average score (A), as well as the worst (w) and best (b) score for each group.

| <i>POST 2</i> | <i>A</i> | <i>w</i> | <i>b</i> |
|----------------------|-----------------|-----------------|-----------------|
| <i>R</i> | 9,67 | 0 | 17 |
| <i>G</i> | 10,83 | 3 | 18 |
| <i>d</i> | 1,17 | | |

When looking at the worst (w) and the best (b) scores for group R and group G for post-test 2 it again showed very little difference between the two groups. The best results varied very little, with a difference of 1, where group G comes out slightly better than group R, while the difference between the two groups for the worst results comes out as a difference of 3 in favor for group G. This particular result, however, is interesting as it is the only time any participant scored a 0 on any of the three tests that all participants went through. I will

discuss this in chapter 5, but it is an interesting mention, as although many participants scored lower than previous tests, they all had at least 1 correct answer.

4.1.3 Multiple-choice

In order to test their understanding and if participants were able to understand a word in a context, the multiple-choice test was considered to be the best option in order to tests this as most of the data presented in this chapter is in a numerical form and can easily be read off individually, or in the form of averages and differences presented in the graphs and tables (Befring, 2015). In the tables presented below are all the questions with the options that all participants were presented with, divided into a table for the pre-test (see Table 4), as well as the two post-tests (see Table 5).

Previously, results from the test of each individual participant, as well as the average scores, have been presented in Figure 2 and 3, and Table 1 - 3. Another important part of the testing process is the multiple-choice that all tests were presented as. This means that participants had the option to pick out answers that, as explained previously, mimicked either the English or Norwegian translation of the word. Below in Table 4 are all the added-up scores for the pre-test for both group R and group G. The table shows how many participants in each group answered the correct answer, and then shows the numbers of how many participants in each group (up to a total of 25 participants) gave one of the wrong choices. If no participants chose the option, it was indicated with “-”. Some participants also gave inconclusive answers (chosen several options, or giving vague answer between two options), which would result in not noting down an option. Although it was explained to all participants to answer all questions, some participants did not answer, and therefore some of the questions do not add up to twenty-five participants for each group (total score for each question).

Table 4 Pre-test scores for all questions. Divided into correct answers, group R (R), group G (G), and wrong answers, group R (R), group G (G).

| Question – Translate the English word | Correct answers | R | G | Wrong answers | R | G |
|---------------------------------------|-----------------|----|----|---------------|---|---|
| 1. Curse | Forbannelse | 23 | 20 | Kure | - | 1 |

| | | | | | | |
|----------------------------|----------------|----|----|-----------------|----|----|
| | | | | Fordervelse | 2 | 1 |
| | | | | Kurs | - | 3 |
| | | | | Forandring | - | - |
| Total: 50 (R - 25, G - 25) | | | | | | |
| 2. Wimp | Pyse | 21 | 15 | Vimpel | - | 4 |
| | | | | Pisk | - | 4 |
| | | | | Vimse | - | 2 |
| | | | | Pysj | 4 | - |
| Total: 50 (R - 25, G - 25) | | | | | | |
| 3. Outsider | Utenforstående | 4 | 12 | Utenfor | 8 | 3 |
| | | | | Utenatlært | 3 | - |
| | | | | Nærstående | - | 1 |
| | | | | Utsider | 10 | 8 |
| Total: 49 (R - 25, G - 24) | | | | | | |
| 4. Undertake | Påta | 4 | 4 | Påsyn | 1 | 2 |
| | | | | Underta | 7 | 7 |
| | | | | Pålagt | 1 | 1 |
| | | | | Undertak | 11 | 11 |
| Total: 49 (R - 24, G - 25) | | | | | | |
| 5. Hast | Har | 1 | 3 | Haste | 14 | 8 |
| | | | | Heise | 2 | 7 |
| | | | | Hast | 4 | 6 |
| | | | | Has | 3 | 1 |
| Total: 49 (R - 24, G - 25) | | | | | | |
| 6. Dost | Gjør | 1 | - | Dust | 2 | 5 |
| | | | | Støv | 6 | 7 |
| | | | | Duo | 7 | 3 |
| | | | | Gjø | 9 | 10 |
| Total: 50 (R - 25, G - 25) | | | | | | |
| 7. Malevolent | Ondsinnet | 2 | 6 | Ondulere | - | - |
| | | | | Monovalent | 8 | 3 |
| | | | | Mannevond | 6 | 8 |
| | | | | Motstandsdyktig | 9 | 8 |
| Total: 50 (R - 25, G - 25) | | | | | | |
| 8. Vile | Avskyelig | 6 | 7 | Samtidig som | 2 | - |
| | | | | Vill | 6 | 10 |
| | | | | Testamentet | 2 | 2 |
| | | | | Slør | 9 | 5 |
| Total: 49 (R - 25, G - 24) | | | | | | |
| 9. Hither | Hit | 4 | 2 | Hater | - | 4 |
| | | | | Oppvarme | 9 | 8 |
| | | | | Hete | 5 | 8 |
| | | | | Hitterst | 6 | 3 |
| Total: 49 (R - 24, G - 25) | | | | | | |
| 10. Verily | Sannelig | 6 | 7 | Veldig | - | 5 |
| | | | | Variere | 12 | 8 |
| | | | | Sannferdig | 6 | 4 |
| | | | | Sannhet | - | 1 |
| Total: 49 (R - 24, G - 25) | | | | | | |
| 11. Fairy | Fe | 13 | 16 | Storfe | 2 | 1 |
| | | | | Fager | - | 1 |
| | | | | Rett | 3 | - |
| | | | | Eventyr | 6 | 7 |

| | | | | | | |
|----------------------------|---------|----|----|------------|----|----|
| Total: 49 (R - 24, G - 25) | | | | | | |
| 12. Muster | Mønstre | 2 | 2 | Sennep | 7 | 13 |
| | | | | Mønster | 3 | - |
| | | | | Måtte | 5 | 1 |
| | | | | Moskus | 7 | 9 |
| Total: 49 (R - 24, G - 25) | | | | | | |
| 13. Deter | Hindre | 2 | 2 | Omvei | 4 | 6 |
| | | | | Detektor | 8 | 3 |
| | | | | Hinder | 4 | 10 |
| | | | | Oppdage | 7 | 4 |
| Total: 50 (R - 25, G - 25) | | | | | | |
| 14. Bum | Boms | 11 | 7 | Bolle | 2 | 2 |
| | | | | Bunn | 3 | 6 |
| | | | | Nedtur | 8 | 10 |
| | | | | Kul | 1 | - |
| Total: 50 (R - 25, G - 25) | | | | | | |
| 15. Gift | Presang | 18 | 16 | Ekteskap | 3 | 5 |
| | | | | Presentere | - | - |
| | | | | Forgifte | 3 | 3 |
| | | | | Avgift | 1 | 1 |
| Total: 50 (R - 25, G - 25) | | | | | | |
| 16. Thee | Deg | 5 | 4 | Tre | 3 | 1 |
| | | | | De | 9 | 12 |
| | | | | Te | 3 | 3 |
| | | | | Tid | 5 | 5 |
| Total: 50 (R - 25, G - 25) | | | | | | |
| 17. Art | Er | - | - | Håndverk | 18 | 16 |
| | | | | Gjenstand | 3 | 1 |
| | | | | Arte | - | - |
| | | | | Art | 4 | 8 |
| Total: 50 (R - 25, G - 25) | | | | | | |
| 18. Vast | Enorm | 8 | 8 | Vest | 1 | 4 |
| | | | | Avfall | 8 | 7 |
| | | | | Vase | 4 | 1 |
| | | | | Bortkastet | 4 | 5 |
| Total: 50 (R - 25, G - 25) | | | | | | |
| 19. Realm | Rike | 7 | 13 | Real | 2 | 5 |
| | | | | Overveldet | 8 | 2 |
| | | | | Halm | 2 | 2 |
| | | | | Virkelig | 5 | 3 |
| Total: 49 (R - 24, G - 25) | | | | | | |
| 20. Thou | Du | 3 | 3 | Selv om | 15 | 8 |
| | | | | Gjennom | 2 | 5 |
| | | | | Tanke | 2 | 5 |
| | | | | Sterk | 3 | 4 |
| Total: 50 (R - 25, G - 25) | | | | | | |

Looking at the overall results of the pre-test presented in Table 4, there were a few questions that either the participants overall answered correctly or not at all. A few that stand out as answers that most of the participants got right are question 1. *curse*, 2. *wimp*, 11. *fairly*

and 15. *gift*. These words in themselves might not seem very difficult at first glance, as they are fairly common words used by 9th graders. The translations of the words, however, were an attempt to confuse the participants as the words picked out have either word in English or Norwegian that might be similar to one another. The results show that most participants were able to see through this and correctly pick the right option, indicating that they had prior knowledge of these words.

On the other end of the spectrum, we have words that most participants struggled with when answering. These words can be categorized into two categories: difficult words and Shakespearean English. Questions 12. *muster* and 13. *deter* stand out as most participants were not able to translate these two words, with only two participants from each group picking the correct translation. Most of the answers to question 12 were answered with either the Norwegian word for mustard, *sennep*, or musk ox, *moskus*. The word *deter*, however, showed a much more even spread amongst the wrong options. When we take a look at the Shakespearean English words from the test, presented in question 5. *hast*, 6. *dost*, 9. *hither*, 16. *thee*, 17. *art*, and 20. *thou*, we see that most participants struggled with a lot of these questions. Not a single participant was able to pick out the correct translation for *art*, *er*, with the majority picking the Norwegian word for craft, *håndverk*. The majority of participants also answered question 20, with *selv om*, which when translated to English, even though, sounds quite similar but is spelled different.

As post-test 1 and post-test 2 were the exact same test, without changing the order in which the questions were asked, all answers from both post-tests are presented in Table 5. The table contains all the answers to the post-test and how many participants chose the different options for the multiple-choice test. This is indicated with the correct answer, followed by the two groups, R and G, divided into post-test 1 (1) and post-test 2 (2) for each of the groups. Similarly with table 4, options from the test that were not chosen by any participant were marked as “- “. Some participants also gave inconclusive answers (chosen several options, or giving vague answer between two options), which would result in not noting down an option. Then the table is presented in a similar way to the correct answer, the wrong options for the test and how many participants from each group answered that question. It is then summed up below in the gray area, using the whole total of all participants (50) and then for each group. As many of the participants did not answer all the questions, the total for each question differs, and does not total to 50 participants. As the questions not answered were grouped together on the same page, it is concluded that some participants missed the page and therefore were not able to answer any question on that page.

Table 5 Post-test scores for post-test 1 + 2, with all questions. Divided into correct answers, group R (R), group G (G), and wrong answers, group R (R), group G (G).

| Question – Fill in the blank | Correct answers | R | | G | | Wrong answers | R | | G | |
|---------------------------------------|-----------------|----|----|----|----|--------------------|----|----|----|----|
| | | 1 | 2 | 1 | 2 | | 1 | 2 | 1 | 2 |
| 1. | Outsider | 9 | 7 | 6 | 8 | Related parties | - | 2 | 3 | 1 |
| | | | | | | Outside | 8 | 3 | 5 | 4 |
| | | | | | | Outsiders | 8 | 12 | 11 | 11 |
| | | | | | | Insiders | - | - | - | - |
| Total: 50, 48(R – 25, 24, G – 25, 24) | | | | | | | | | | |
| 2. | Vile | 4 | 5 | 16 | 15 | Wild | 17 | 19 | 8 | 8 |
| | | | | | | While | - | - | - | - |
| | | | | | | Will | - | - | 1 | 1 |
| | | | | | | Vail | 4 | - | - | - |
| Total: 50, 48(R – 25, 24, G – 25, 24) | | | | | | | | | | |
| 3. | Wimp | 18 | 19 | 17 | 20 | Whip | 1 | 1 | 5 | 3 |
| | | | | | | Whimsical | - | 1 | - | - |
| | | | | | | Wimpy | 6 | 2 | 3 | 1 |
| | | | | | | Wimps | - | 1 | - | - |
| Total: 50, 48(R – 25, 24, G – 25, 24) | | | | | | | | | | |
| 4. | Muster | 19 | 13 | 21 | 19 | Mustard | 2 | 5 | 1 | 3 |
| | | | | | | Mustering | 1 | 4 | 1 | 2 |
| | | | | | | Mustered | - | 2 | 2 | - |
| | | | | | | Mustards | 2 | - | - | - |
| Total: 49, 48(R – 24, 24, G – 25, 24) | | | | | | | | | | |
| 5. | Hither | 17 | 17 | 19 | 16 | Thither | 3 | 1 | 1 | 2 |
| | | | | | | Hater | 2 | 1 | 2 | 2 |
| | | | | | | Heater | - | 2 | 2 | 2 |
| | | | | | | Hither and thither | 2 | 3 | 1 | 2 |
| Total: 49, 48(R – 24, 24, G – 25, 24) | | | | | | | | | | |
| 6. | Realm | 14 | 17 | 21 | 21 | Helm | 2 | - | - | - |
| | | | | | | Realms | 6 | 3 | 1 | 2 |
| | | | | | | Whelm | 3 | 3 | 2 | 1 |
| | | | | | | Relative | - | 1 | 1 | - |
| Total: 50, 48(R – 25, 24, G – 25, 24) | | | | | | | | | | |
| 7. | Art | 13 | 12 | 11 | 7 | Was | 6 | 2 | 4 | 4 |
| | | | | | | Is | 3 | 4 | 6 | 7 |
| | | | | | | Arts | 1 | 4 | 1 | 3 |
| | | | | | | Were | 2 | 2 | 3 | 3 |
| Total: 50, 48(R – 25, 24, G – 25, 24) | | | | | | | | | | |
| 8. | Gift | 21 | 19 | 24 | 21 | Gifts | 2 | 4 | 1 | 2 |
| | | | | | | To gift | - | - | - | - |
| | | | | | | Gifted | 1 | - | - | - |
| | | | | | | Gifting | 1 | 1 | - | 1 |
| Total: 50, 48(R – 25, 24, G – 25, 24) | | | | | | | | | | |
| 9. | Curse | 17 | 16 | 23 | 20 | Cursive | 2 | 1 | - | - |
| | | | | | | Cursed | 1 | 3 | 1 | 2 |
| | | | | | | Curses | 4 | 3 | 1 | 2 |
| | | | | | | Cure | - | 1 | - | - |
| Total: 49, 48(R – 24, 24, G – 25, 24) | | | | | | | | | | |

| | | | | | | | | | | |
|---------------------------------------|------------|----|----|----|----|---------------|----|----|----|----|
| 10. | Hast | 14 | 10 | 11 | 9 | Hose | 5 | 5 | 3 | 4 |
| | | | | | | Hoist | - | 1 | 2 | 8 |
| | | | | | | Hasted | 1 | 2 | 6 | 1 |
| | | | | | | Haste | 3 | 6 | 2 | 2 |
| Total: 48, 48(R – 23, 24, G – 25, 24) | | | | | | | | | | |
| 11. | Undertake | 15 | 10 | 8 | 9 | Underwear | 1 | - | 2 | 2 |
| | | | | | | Undertook | - | 1 | 2 | 3 |
| | | | | | | Undertakes | - | 1 | - | - |
| | | | | | | Overtake | 7 | 12 | 12 | 10 |
| Total: 48, 48(R – 23, 24, G – 24, 24) | | | | | | | | | | |
| 12. | Verily | 15 | 10 | 15 | 11 | Very | - | 5 | 4 | 3 |
| | | | | | | Varying | 3 | 1 | - | 3 |
| | | | | | | Vary | 4 | 4 | 3 | 6 |
| | | | | | | Worriedly | 2 | 2 | 1 | 1 |
| Total: 47, 47(R – 24, 22, G – 23, 24) | | | | | | | | | | |
| 13. | Malevolent | 12 | 9 | 12 | 14 | Monovalent | 7 | 4 | 4 | 7 |
| | | | | | | Malevolence | 2 | 3 | 4 | 2 |
| | | | | | | Malevolently | 3 | 8 | 1 | - |
| | | | | | | Male violence | - | - | 3 | 1 |
| Total: 48, 48(R – 24, 24, G – 24, 24) | | | | | | | | | | |
| 14. | Dost | 9 | 6 | 11 | 5 | Duo | 2 | 5 | 1 | 4 |
| | | | | | | Hast | 7 | 7 | 10 | 11 |
| | | | | | | Dust | 2 | 3 | 2 | 3 |
| | | | | | | Douse | 3 | 3 | - | 1 |
| Total: 47, 48(R – 23, 24, G – 24, 24) | | | | | | | | | | |
| 15. | Fairies | 15 | 8 | 11 | 8 | Fairy | 5 | 9 | 5 | 8 |
| | | | | | | Fairly | 2 | 3 | 3 | 3 |
| | | | | | | Fair | - | 1 | 1 | - |
| | | | | | | Fairy tales | 2 | 3 | 5 | 5 |
| Total: 49, 48(R – 24, 24, G – 25, 24) | | | | | | | | | | |
| 16. | Thee | 19 | 17 | 18 | 12 | Thy | 2 | - | 1 | 3 |
| | | | | | | Three | 1 | 4 | 4 | 4 |
| | | | | | | Tree | 1 | 2 | - | 1 |
| | | | | | | These | 2 | - | 2 | 4 |
| Total: 50, 47(R – 25, 23, G – 25, 24) | | | | | | | | | | |
| 17. | Deterring | 4 | 3 | 3 | 7 | Deter | 11 | 9 | 8 | 4 |
| | | | | | | Deterred | 3 | 3 | 5 | 4 |
| | | | | | | Detecting | 7 | 6 | 7 | 9 |
| | | | | | | Detoured | - | 2 | 2 | - |
| Total: 50, 47(R – 25, 23, G – 25, 24) | | | | | | | | | | |
| 18. | Bum | 11 | 14 | 12 | 15 | Bums | 12 | 7 | 12 | 6 |
| | | | | | | Bun | - | - | - | 1 |
| | | | | | | Bummer | 1 | 2 | 1 | 2 |
| | | | | | | Buns | - | - | - | - |
| Total: 50, 47(R – 24, 23, G – 25, 24) | | | | | | | | | | |
| 19. | Thou | 17 | 13 | 14 | 10 | Thee | 5 | 5 | 6 | 4 |
| | | | | | | Thy | - | 2 | 1 | 2 |
| | | | | | | Though | 2 | 2 | 3 | 6 |
| | | | | | | Through | - | 1 | - | 2 |
| Total: 48, 47(R – 24, 23, G – 24, 24) | | | | | | | | | | |
| 20. | Vast | 11 | 8 | 11 | 8 | Vase | 5 | 5 | 5 | 6 |
| | | | | | | Vest | 2 | - | 1 | 4 |
| | | | | | | West | 4 | 6 | 7 | 5 |

| | | | | | | | | | | |
|--|--|--|--|--|--|-------|---|---|---|---|
| | | | | | | Waste | 2 | 4 | 1 | 1 |
| Total: 49, 47(R – 24, 23, G – 25, 24) | | | | | | | | | | |

When looking at the results of the two post-tests presented in Table 5, there are a few interesting answers that we should take note of. Much like the results from the first test, some of the words that the participants continually scored overall correct on in both post-test 1 and post-test 2 was question 3. *wimp*, 8. *gift*, and 9. *curse*, which indicates that the participants had equal to better understanding of the words between the pre-test and the post-tests. Words that the participants previously scored lower on showed an increase, in both groups, in question 4. *muster*, 5. *hither*, 7. *art*, 16. *thee*, and 19. *thou*, also indicating that the participants were able to understand and learn the words from the context of the texts given. Several of these words were in what was earlier categorized as Shakespearean words, which both groups struggled with translating in the pre-test. Their understanding of the words and being able to put these in the correct context after both playing and reading the game was much higher than from the pre-test.

As most of the participants did on average better and scored much better in the post-tests compared to the pre-test, there were a slight deterioration between the two post-tests. These changes are reflected in the averages presented in Table 2 and 3 above. There is one question, however, that most participants in both groups struggled with, and this was in question 17. *deterring*, where the participants in both groups chose other conjugated forms of deter (deterred, deter), but also a significant portion of the participants in both groups answered *detecting*. Although it did not stand out this was a word that the participants struggled a little bit within the pre-test as well.

Although both groups did on average worse on most of the questions from post-test 1 to post-test 2, they showed an increase overall, from the pre-test. There were no significant changes between the groups, with the exception of answers on question 2. *vile*, where group G on both post-test 1 and post-test 2 scored significantly higher than group R. While group G answered correctly 16 out of 25 times on post-test 1, and 15 out of 24 times (as there were only twenty-four participating from each group in post-test 2) on post-test 2, group R scored 4 out of 25 on post-test 1 and 5 out of 24 on post-test 2. The majority of the participants in group R answered this question with the option *wild*, which reflects the overall answers to this particular word from the pre-test, where participants answered that the translation for vile in Norwegian was the English word, wild, *vill*. Although participants in both groups were unable to guess the correct translation of the word in pre-test 1, participants in group G were able to

understand and put the word vile into the right context after playing the game, at a much higher rate than participants in group R were able to after reading.

As mentioned, the word *bum* and *bums* were used as options for question 18 on the post-test, where, although option a) *bum* was the correct answer, option b) *bums* could be interpreted as a correct answer as well, as the sentence did not indicate which of the two would fit the best, therefore making them both a correct answer. It was, however, decided that the plural of *bum*, answer b) would be considered wrong as it was determined it was not affecting the results to an extent. It is interesting, however, to see the answers all participants gave on question 18, in both post-test 1 and post-test 2. If looking at what participants might have interpreted as a correct answer, it still gives us an indication on what the participants understood out from a context. Looking at Table 5, all participants from group G answered either a) or b) on question 18 (13 for option a, and 12 for option b), while group R, similarly had all participants answer a) or b), with the exception of two who answered d) *bummer* and one not answering the question (11 for option a, and 12 for option b).

For post-test 2, similar results occurred. As shown in Table 5, Group G had a total of 21 out of 24 participants who answered either option a) *bum* or option b) *bums* for question 18 (15 for option a, and 6 for option b), where the other three participants answered other options. Group R, answered quite similarly as group G in this test, where a total of 21 out of 24 participants answered either option a) *bum* or b) *bums* for question 18 (14 for option a, and 7 for option b), with the other three participants answering with another option or not answering at all.

5. Discussion

In this chapter I will discuss the results that were presented in chapter 4, as well as discuss other aspects of the study conducted, such as in chapter 5.1 Adapting to the lessons, where I discuss the reasoning behind changing the original plan. I will also discuss the results considering motivation and observations done during the study.

5.1 Adapting to the lessons

All participants were given a pre-test, and then would have 30 minutes of either gameplay or reading before given the post-test. It was originally planned that all participants would either read or play the game for 30 minutes, but it was shortened to 25 minutes. There were several reasons to why the time was changed.

One of the main reasons this was dropped down was because of the time restraint. As different schools in Norway plan how long each lesson and breaks between are, the actual execution of the study also needed to be planned accordingly. As lessons would last for 45 minutes each, that would give the participants 15 minutes to spare for both the pre- and post-test, as well as all the information that was given at the start. It was made clear very early on that it would take roughly 50–55 minutes for each group, as it took time to select the participants at the start of each lesson, have them find a seat, and then go through all of the information that they needed in order to participate in the study. It would also take different amounts of time for all participants go through the pre-test as they read and worked at a different pace. It was important that all participants start the gameplay and reading session together so that the time would be measured accurately for everyone. The post-test, however, worked differently as they were able to leave and turn in both their tests when they were done with the post-test and therefore it did not impact the time cut.

It was also important to not take too much time out of the next lesson as not all the teachers had the availability to have their pupils participate in those lessons, due to other tests, as well as important information that would be discussed during that lesson. Another reason that the time was shortened, which will be discussed further in 5.2 Motivation was that several of the reading participants would finish before the 30-minute mark. This would range between being done reading 10–15 minutes before the timer ran out and it was therefore decided to shorten the time.

Although it might not seem like a drastic change, the original time was selected at the beginning phase of this project from a small group of participants that would pre-play the game until they would reach the first dungeon. This part of the game is considered the introduction and would be a good place for all participants to start from, and therefore it was important to tune the time, so all participants would have enough time to engage with the game, as well as creating a story that would be based on the same parts of the game that all the gaming participants would encounter. The change was dropped from 30 minutes to 25

minutes, in order to not shorten the gameplay too much so all participants could reach the intended area and dialog, but also accommodate the participants different classes as well as the structure of the classes.

5.2 General findings

As presented in chapter 4, the results of the tests showed very little difference between the two groups for the first two tests. For the pre-test the difference in average was 0,2, which was a highly expected result as all participants came from the same school and were in the same grade and therefore should be at approximately the same level. All participants were chosen from different classrooms, based on availability as well as a desire to participate in the study, but they were randomly divided into playing group G and reading group R.

As results for the pre-test showed a very low score from each group, 5,68 for group R and 5,84 for group G, it indicates what was the intention of the pre-test itself. In order to look at the vocabulary acquisition, one must use vocabulary that is unfamiliar to the participants, or in this case, where most of the vocabulary were of a more difficult level than what would be expected of a 9th grade classroom in Norway. Out of 20, both groups on average did not score close to half, and this indicates that most of the words chosen were outside of their known vocabulary. It is also important to note that, and although we can only speculate, many of the participants might have guessed and hit the right answer. With that said, it should still show about the same results as if participants guessed on the questions, they should get the answer wrong, even more times than they would be able to pick out the correct answer, as well as using process of elimination in order to guess and choose the right answer.

Looking at the overall results for both groups on the first post-test, both groups showed improvement, doubling the scores, and showed quite a bit of improvement from the first test. This indicates that the participants were able to recognize the words, either from the pre-test, or from the dialogue they encountered in either the game or the story. Participants were on a much higher level, able to recognize the words, as well as being able to put them in a context, even though the words were never translated for them into their L1, as well as not getting any input from me or each other in order to figure out the words and their meaning. Participants were able to recognize whether the words were nouns, adjectives, adverbs,

pronouns, or verbs as well as their correct number or tense. There were some standouts that will be discussed, but on a general basis, most participants were able to distinguish these features of most of the words on pre-test 1. This is similar to the vocabulary scores that Chen & Hsu (2019) presents in their study where most participants improved their vocabulary scores between the testing. Although the study conducted did not have a control group, the group that played showed improvement in their overall scores. It is impossible to say what the results would have said if they had a control group, but according to results emanating from this study one could assume that similar results might occur. It is also important to note that this study was much smaller, and they were therefore able to get even more accurate results, but one could speculate that the results from this study would not differ too much from the presented results, as they are very similar to Chen & Hsu's results as well.

Post-test 2, however, showed a bit more difference in the two groups, than what the previous test results showed. The pre-test and post-test 1 both showed very little to no difference between the groups in the test scores and indicated that both groups scored better overall after playing or reading, but not better than the other. Post-test 2 showed a different result that I think is an interesting find. For post-test 2 group R scored, on average 9,67, while group G scored, on average 10,83, which already indicates a difference between the two groups. As the difference between the two groups in the first two tests showed a difference of 0,2 and 0,32 respectively, post-test 2 had an average difference of 1,17. This indicates that the participants in group G that played the game were able to not only understand and learn more words than the participants in group R, but also retain more words on average. DeHaan (2005), Zheng et al. (2015) and Chen & Hsu (2019) also agree with that there is a significant difference as learning vocabulary during play is much easier as the game itself provides the players richer and contextualized clues in order to better understand and learn the words and meanings. In other words, playing games teaches the players to learn through the context of the game.

As words in a book are only presented in their linguistic forms (Chen & Hsu, 2019), the words that are presented in games are of a multimedia annotation, like spelling, dialogue, images, and graphics, as well as sound. This gives the players much deeper and richer contextual clues, that Ranalli (2008) also argues, is an important part of the multimedia annotation. An example, although not one of the specific words used for this study, is how the participants of group G had to physically find the sword and shield in the game in order to progress. The game would on several occasions give them clues and hints as to where these items could be found (in the town's shop and in a hidden chest) and would also give them

visual and auditory cues when rewarded with these items. The participants of group R had only the words mentioned in the text, with no other visual or auditory clues. The story itself was also linear and the readers were not able to jump to pages to explore where these items could be obtained the same way the gamers could. One can also argue that part of this experience for group G was the exploration and adventure to find these items, and several of the words actually used in this study were often related to how to find these items as well as specific expressions made throughout that adventure, such as “outsider”, “wimp” and “bum”. Wimp and bum were used to describe the main character as well as the leader of the town, who acts as the first barrier of the game. These two words are very descriptive of their characters that is reflected in the music played around these characters (their themes), as well as their overall looks that the graphics introduce.

5.3 Standouts

Although most of the participants followed a general pattern when answering all tests, there were some questions in all three tests that stood out. These standouts were all presented in chapter 4, but will be further discussed in this chapter, as well as speculations as to why this might have occurred.

As presented in chapter 4, some of the answers presented in Table 4 stood out, for different reasons. Question 1, 2, 11 and 15 all pointed to words that participants already had knowledge about before participating in the study. This previous knowledge was also indicated in the post-tests presented in Table 5 where all participants overall scored about the same on these questions. This might be due to the words themselves. Words like curse, fairy and gift are words that are more common in the English language and are words that an L2 English speaker is more likely to come across. The words were chosen, however, for their deceptive nature in the Norwegian language. The word gift in English means a present or to present someone with something, but in Norwegian it means to poison or to be married. Most participants, however, were able to see through this and answer correctly, further implying that the participants are capable of understanding the task they were given, as well as sort out the words.

There were, however, words that the participants struggled understanding, particularly in question 12 and 13 of the pre-test, which are words not commonly used in the English language. Question 12 in particular, *muster*, also sounds very similar to the word *mustard*, which a lot of the participants answered as the translation of the word. As the word *muster* is an uncommon verb, the noun *mustard* is a very common word as it is a condiment used on a lot of different foods and are often associated in a lexical chunk *ketchup and mustard*. As the word might be associated with a lexical chunk, seeing the translation of the word might have tricked participants to see the word as part of the word chunk or mistake it as part of it. In the post-tests, however, the results indicate that the participants were able to change the perception of the word associated with the word chunk *ketchup and mustard*, to understanding the word in the given context, *to gather forces*. This question in particular had an overall positive and better score than from the pre-test and as mentioned, it indicates what this study looks at, if participants are able to understand word in a given context from just encountering the words in a given text.

Another interesting result is the participants' understanding of archaic English, which to this point has been referred to as Shakespearean English. Although pupils in Norway are often introduced to Shakespeare in English class, the language he used is not very commonly taught. It might have been looked at and given pupils an indication of what the English language looked like and how it has evolved, but it is not something that most 9th graders would know about. This is reflected in the answer of said words in pre-test 1, where I already mentioned that most of these words, and especially *art* that scored a zero and *dost* that only had a few that managed to select the correct translation, averaged a low score in both groups. The word *art* is for many pupils connected to the lexical chunk *arts and crafts* as it is a subject all pupils in Norway has this subject in school, *kunst og håndverk*, which might be the reason why they only understood the word as a noun, and not as a verb. Although the noun *art* is translated to *kunst*, as it is often associated with the word *håndverk* in a lexical chunk, might be the reason to why most participants chose this option in the pre-test. It did, however, change in the post-tests where these words were scoring much better than in the previous test and closing to a full score for some of the words like *hither*, and *thee*. These words in particular are interesting as many games use the archaic language as a trope to portray wise and old characters, that in many cases, help the protagonist forward. It is therefore important to understand these words in order to understand the wisdom that these characters relay to you as the player. Although there was no significant difference between the two groups and the answers given in the questions with archaic words, it does show that words that are not used

in modern English can still be understood given the context in the stories and games the participants play.

In both post-test 1 and post-test 2, one question in particular stood out, as the interpretation of the correct answer could be dedicated to two different options. In question 18 of the post-tests, as mentioned, most of the participants would answer one of the options that arguably could be considered the right choice. When looking at the first part of the question, “*Probably just some _____ living in the alleyway*” itself one can argue that both singular and plural form of *bum* could be correctly placed in the sentence. The question itself does not distinguish between the two and does not eliminate or hint to what the correct answer might be. As the majority of the participants were able to select one of two options as the correct answer, it does indicate that the majority of the participants were able to guess from the context, just from playing the game or reading the story. The word *bum* in particular, is a word, in this sense, more commonly used in British English, and used as a word for a homeless person or a vagabond but is also used as a word for someone’s bottom. It is a word not commonly used in the EFL classroom in Norway, and although some participants might have already had an understanding of what the word meant, this does indicate that this particular word stuck with most participants (as many of the participant correctly answered this question in both post-test 1 and post-test 2), even though they had only encountered the word a few times.

When looking at the pre-test, both the reading group (group R) and the gaming group (group G) scored equally on question 8. Vile, where group R had 6 participants who answered correctly, while group G had 7 participants who answered correctly. There were some differences in what the two groups answered as the translation with the majority of group R answering either the Norwegian word *vill*, meaning wild or answered *slør*, which means veil, while the majority of group G answered *vill* as well. This is particular does not indicate much, but if we take a look at the scores on the post-tests, especially between the two groups on each test we can see an interesting observation. On both post-tests the reading group (Group R) scored lower than on the pre-test, with only 4 and 5 correct answers in post-test 1 and post-test 2 respectively. The majority of group R answered *wild* as the correct input in the sentence “*His _____ mood made him an unpleasant person to be around and upsetting everyone who witnessed his behavior*”, while group G scored 16 and 15 in post-test 1 and post-test 2 respectively. This is a major difference in the two groups more than half of the group that played the game were able to understand the word and put it correctly in the sentence, while only 1/5 of the participants in group R were able to do the same. One could argue that the

sentence in itself could indicate that *wild* is the correct answer, the description of the person being *an unpleasant person* and *upsetting everyone*, indicating that the correct word is *vile*. This difference indicates that the input the gaming participants received through playing the game gave a better understanding of the word, than in the group that only read the story, and giving them the necessary tools to understand it through the context. While the readers only see it in the context of the sentence, the players are introduced to this word while somber music is playing in the background, which is also played earlier at the start of the game where the players are able to see the main antagonist of the game, linking the music and the words to that person giving them more context to the word being negative than of those who only read the story.

5.4 Acquisition

Even though looking at the overall scores as well as individual standouts, it is also important to look at the bigger picture. Looking at what the participants learnt or did not learn, and what that actually means. I have mentioned several times that some of the individual results show that the participants have acquired some level of acquisition through either playing (group G) or reading (group R), but what are the actual differences between the two groups?

It was briefly mentioned earlier the overall results and averages for each of the two groups, which is also presented in Table 1-3. The test averages showed very little difference between the two groups, both in the pre-test (see Table 1) as well as post-test 1 (see Table 2). Both groups scored about equal, with some differences in the individual tests, as well as some similarities between the two groups on certain words. This alone does not present a high level of acquisition in either group, but it shows a tendency that regardless of if participants played the game (group G) or read the story (group R) they showed some level of acquisition between the first two tests. This is reflected in the results where both groups scored, on average, 5.68 for group R and 5.56 for group G between the pre-test and post-test 1. These two scores show little to no difference between the two groups, and one might deduct that both reading and playing a game is equally as efficient when learning a new language and building new vocabulary.

However, looking at the differences in post-test 2 paints a different picture than what we are led to believe from the first two tests in both groups. As mentioned, when learning and acquiring new language it is important that the new vocabulary acquired is stored in the long-term memory and not short-term (Gürkan, 2018; Munden, 2016) as this build on their ability to recall information in order to gain new knowledge (Krashen, 1972). When we look at the differences between post-test 1 and post-test 2 in both groups, we also see a slight difference. Both groups scored, on average worse in post-test 2 than in post-test 1, but the differences between the two groups for both tests show a much higher difference than expected. As group R were able to read through all of the text at least once, I hypothesized that group R would score better on post-test 2 as several of the participants in group R were unable to reach the second part of the major text that was used in the story. Group G still had only a difference of -0,57, while group R had a difference of 1,45 between the two tests. This, together with the difference between the two groups for post-test two landing on 1,17 gives us a different picture than what the pre-test and post-test 1 showed. Group R scored much better on post-test 2 than participants in group R and this indicates a much larger margin of words that group G were able to retain and also recall a week later for the last test, than what group R were able to do. I have already mentioned that group G were subjected to other input than what group R were in the form of being able to see the pictures and hear the music that was playing giving them other input that might have helped retain the information they were given. Although short-term, it seems that both reading and playing a game have about an equal effect on learning, playing a game clearly shows better retention than what reading does. This might also be affected by each participants' motivation to read and play as well.

5.5 Motivation

While conducting the study, due to minimal space, all participants in groups of eight were playing and reading in the same room. All participants in group R had to read next to the playing participants in group G, which yielded some interesting results.

Another interesting observation was the engagement to the text and to the game that participants had. While all participants that were given a console to play on were deeply into the gaming and seemed to have a full focus on their part of the study, several participants

from group R had a much higher lack of concentration when reading the text. There are several reasons as to why the participants of group R might have had a lack of motivation when reading, compared to group G that played the game.

One possible reason is that the game itself is motivating. As the participants are typically not allowed to play games at school ground and lectures usually does not result in playing a game, having the opportunity to do so is a big motivational factor. It might be dissapointing for the participants that were then randomly selected to read that their classmates are then allowed to play, and they are not.

A second possibility is the difficulty in words. It has already been established that the participants were encountering words that are not of the typical 9th grade English level in Norway. A big part of learning new vocabulary is selecting appropriate vocabulary (Munden, 2016; Davis & Kryszewska, 2012) as well as being motivated to learn (Munden, 2016), but in order to look at the participants' acquisition of vocabulary, if we follow Krashen's input hypothesis (1982) it is necessary to raise that level ever so slightly in order to see if that is actually the case. As many words in the text are new and might be hard for the participants to understand, that also might affect their motivation to read and engage with the text for the whole duration of the study.

Another possible reason is the lack of motivation to read a text. It might already have been a dissapointment for the participants to see other participants placed in a different group play a game, while they must read, but reading four pages of text itself might not seem like an ideal lesson for any 9th grader. The text itself is the exact same contents of the game that all participants in group G were exposed to, but it is presented in a different way. As group G is greeted with sound and color to help visualize the story and motivate them forward, the participants in group R only have four pages of text that would arguably be quite demotivating. One thing that was observed was that when most of the participants in group G were engaged with the game for the whole duration, group R would often read the story much faster, and therefore had nothing to do. Although they were encouraged to read the text again, this was not forced upon them, and therefore many of the participants chose to not engage further with the text then what was necessary of them. This goes well into the next segment of this discussion, namely about how this could or maybe even should have been done next time.

5.6 Next time

It has been mentioned several times about things that needed to be adjusted when carrying out this study and this leads to many questions about what could have been done differently at the start? There are several ways that this study could have been conducted differently based on the experience gathered along the way in this study, both during the conduction of the tests with the participants as well as when working and processing the material and results afterwards.

One of the biggest changes done in the study was the time used for both play and read. This was dropped from 30 minutes down to 25 minutes, and although this might seem like a small difference, it is a difference. The reasoning for changing the time, as mentioned earlier, was due to how lessons are planned at the school where the study was conducted, as well as seeing the reaction of the participants that was reading. It was also not known to me before the lesson started which participants were joining the experiment, as well as a lot of time going to find participants that wanted to be included in the study as well as some participants that needed to be changed out due to some participants choosing not to participate. I would debate that a large portion of this fits the motivation of both teachers and participants and their willingness to have participants leave their classrooms in order to be a part of the study as well as the lack of motivation of many participants in group R. One way of perhaps changing this is planning more with the teachers beforehand and making sure that adequate rooms are available and set up beforehand. On the note of having adequate rooms available, that was not the case with many of the groups, and therefore the groups were mixed which might have impacted the motivation. Having two rooms available where one would be able to separate the two groups might have an effect on the motivation of group R. Being fully prepared for any type of project is essential for getting good results, and there are always ways that one can improve and do an experiment with a better chance of success and results.

Another way of doing this differently next time is separated into two parts: *multimodality* and a *3rd control group*. Starting with multimodality, there were a lot of questions from participants in group R about specifics of the story they were reading. As this is a fictional universe, there are different races and people, that might need more explanation in order to see the whole picture. Making the text multimodal and including a picture of the Kokiri (the people that the readers are introduced to), might have made it easier for the participants to understand the story. Another thing that could have been added, was a map of

how the town looked, giving them a better picture of the journey that Link is on throughout the introduction of the story. This brings us to the next part of having a 3rd control group. As part of this study was to look at traditional text that are not multimodal bringing in pictures and maps would defeat the purpose of looking at non-multimodal texts. It might therefore be more beneficial to have a 3rd group instead, group M, that would read the same text as group R, but incorporate pictures and maps to give them a better and clearer picture of the story they read, without taking away from the text itself. This way one might be able to see another way of using texts that is still very much used in the classroom and have more data on different ways that pupils learn.

5.7 Suitability of using the game

When talking about the potential of commercial off the shelf (COTS) games in the classroom and in an educational setting it is important to look at the suitability of using these games. Just as there are many factors that weigh in when choosing the proper vocabulary and material to teach, there are many factors that play when selecting games.

If we talk about raw numbers when it comes to using *The Legend of Zelda: Ocarina of Time*, it might be hard to see any benefit at all. In order to play this game every single pupil needs to have either a Nintendo 64 (N64), Nintendo 3DS (3DS) or a Nintendo Switch (Switch), in addition to a copy of the game (this is only for the N64 and the 3DS). These consoles retail between 500 – 3000 Norwegian kroner depending on how old it is and the condition they are in, while a copy of the game sells for around 200 – 500 Norwegian kroner. If you use the N64 you are required to use a screen that you can connect the N64 to, and with the Switch an additional subscription is required in order to play. This would then roughly cost between 700 – 2700 Norwegian kroner per pupil, which is money that most schools in Norway would not be able to afford. This is a major resource of money to use and might not seem beneficial at all. However, from own experience and observations, more and more schools in Norway dedicate larger portions of their annual money to build so-called “gaming rooms” which allows inclusion of different pupils. These rooms are especially made for those pupils that might not come to school or struggle learning through traditional methods and is the school’s way of reaching out to all pupils. As schools are investing more into technology,

not only through gaming, but also through laptops and pads that pupils use on a daily basis. Although it might seem that each individual pupil would get their own console and game to play on, this could be worked around as classes and groups of pupils use these at different times so all pupils might benefit from it, although at different times. There is also the potential that the original creators of the game can make deals with schools in order to provide the games needed at a more reasonable price, much like Minecraft was developed into Minecraft Education in order to create easy access to teachers and their pupils.

Looking at the game as a material and what it can offer the classroom and its pupils in terms of acquisition, it is hard to say. This study does indicate that pupils do retain vocabulary long term from playing *Ocarina of Time*, but there is still a lot of research that needs to be done in order to be able to conclude that this game works as well or even better than traditional learning material. Vocabulary acquisition and retention is only one part of the English Curriculum that pupils in Norway are needed to learn in order to be proficient L2 English speakers, and there are other areas of the game that are in much need of further studying this.

5.8 Further research on gaming

This leads us to the final part of the discussion, and the future research on gaming. Although research on gaming is quite new (Carnagey & Anderson, 2005; Anderson et al., 2008; Chen & Hsu, 2019; Chen & Yang, 2013; Cooke-Plagwitz, 2008; Cornille et al., 2012; DeHaan, 2005; DeHaan et al., 2010; Jauregi et al., 2011; Kirsh, 1997; Miller & Hegelheimer, 2006; Ranalli, 2008; Rama et al., 2012; Suh et al., 2010; Thorne, 2008), a lot of research has already been done, especially when looking into what learning potential it brings to the classroom. There is still a lot of research needed for *The Legend of Zelda: Ocarina of Time* before we can definitely say that it is or is not suited for the classroom.

As this study only looks at the vocabulary acquisition and retention in *Ocarina of Time* there are still many parts of the English Curriculum that need to be looked at. Before starting on the journey of studying this particular topic in this game, there were many ideas that were discussed before landing on this particular topic. One of these topics was how different races and people are portrayed in the game. Although it is a fictional universe, it draws inspiration from real life, and thus, can potentially be used to teach about different people

and races in a way that might not be intrusive to the pupils themselves. As this game is loosely based on different people it draws inspiration from stereotypes, both good and bad, and might open up discussion in the classroom and teach stereotype awareness on different people in the world and how we can avoid them and look past these stereotypes.

Closely following the topic of people and stereotypes is culture, which is an important part of learning a language. In order to properly understand a language, it is important to understand the different cultures that make up the language, and thus might be interesting to look at the cultures that are portrayed in the game, how we compare with our own culture and how we can learn about different cultures. When studying abroad one of the first lessons we learnt in culture class was to draw a picture of ourselves and the different cultures we personally felt we belonged into. Making ourselves aware of the different cultures that makes up our identities is important in order to understand ourselves, and games might help in discovering exactly that. It might also be able to help us understand the different cultures that we might not feel connected to or a part of, because it is important to understand each other and have respect and tolerance for each other, and in order to do so, we must gain knowledge of those cultures.

Another interesting part is how music might play a role in our motivation and mood when learning. As Munden (2016, p. 121) points out that not only our motivation, but the emotional state we are in affect learning, then looking at things that affect our mood, like music, can work when in a state of learning. Many games use music to create a certain feeling or mood in the player to help tell a story and thus, might be helpful when understanding stories and how they make us feel. This can also help when writing our own stories, which is a part of the Curriculum, and looking at music to help explain the overall mood and setting of the stories we write might be a great part of the writing process for pupils.

One last thing that might be beneficial to do further studies on in *The Legend of Zelda: Ocarina of Time* in order to see if there is a benefit of bringing it into the classroom is other parts that make up a language. This particular study looks at vocabulary, and studies that dive further into the specific lexis of the language might be beneficial. It might also be beneficial to look at syntax as it is the primary focus in many schools teaching L2 (Howatt, 1984; Rivers, 1981; Weisse, 1872; Zimmermann, 2010). The debate of lexis versus syntax is old, but both parts of language are important, and thus is important to study as well.

6. Conclusion

The use of games in school and in education is a relatively new topic, and a material that is not commonly used. However, we see that the use of games is getting more and more attention, both in research and in the classrooms, for example, in the way that Minecraft Education is more implemented in the school system as a material that teachers can use in their lessons. Are games, such as *The Legend of Zelda: Ocarina of Time*, a good fit for the classroom, and are there benefits of using such a game in the Norwegian classroom today? In order to find a definite answer, we must go back and look at the initial research questions and whether the answer in this study gives any indication to point us in the right direction. When looking back on all the results it might seem like games, and especially adventure COTS games have a bright future in the educational world.

Looking at the first research question of the correlation between vocabulary acquisition and gameplay in a 9th grade Norwegian classroom, this study suggests and indicates that there is a definite correlation between these two. As the results showed a definite change in acquisition of vocabulary in both groups, playing a game indicates that it is in short term equally as good as reading a text, and long term seem to have a positive effect on the acquisition and retention of vocabulary in pupils. This change was based on the three tests that both groups did and comparisons between the two groups showed that simply reading a text without any input gives very little acquisition. Playing a game, however, shows an increase in how pupils can learn, and acquire, but also retain, and recall this new vocabulary and information without any input from the teacher, in a much more effective way than simply reading.

For the second research question of the correlation between guessing from context and gameplay in a 9th grade Norwegian classroom, this study also suggests and indicate that there is a correlation between these two. Much like the first part of the research question about vocabulary acquisition, the pupils scored equally between the first two tests, but indicated that simply reading a text showed worse results than being able to play the game. This is indicated in the answers that both groups gave, and how pupils that scored overall lower on the English-Norwegian translation test were able to understand these words and put them into a context. For the first test they both showed promising results that the majority of all participants were able to understand the context of the words and correctly put them in the right place in the

text, through understanding plurality of a word or the correct conjugated form of the word. The second post-test, however, show the retention that the pupils had between these two tests, and it does indicate that games have a positive long-term effect on the pupils, then just reading.

Both of these questions are also affected by the motivation and the multimodality of the gameplay. Although not definitive proof, results indicate that there are more to just reading than the words themselves as observations indicated that the motivation of the reading group were much lower, than of the group that played. Some of the test results also indicate that the fact the game is multimodal might have affected the understanding of context and vocabulary acquisition of the participants that played as picture and sound might have played a role when being introduced to these new words. Specific music and specific characters would then be associated with the words, creating a link between them and thus being able to put these words into context.

Although there has been research done on the use of games in the classroom and the potential use and implementation of COTS games (Carnagey & Anderson, 2005; Anderson et al., 2008; Chen & Hsu, 2019; Chen & Yang, 2013; Cooke-Plagwitz, 2008; Cornille et al., 2012; DeHaan, 2005; DeHaan et al., 2010; Jauregi et al., 2011; Kirsh, 1997; Miller & Hegelheimer, 2006; Ranalli, 2008; Rama et al., 2012; Suh et al., 2010; Thorne, 2008) there is still research left to be done in order to see the full potential of using games in the classroom. Every study done on the topic of games, regardless of if they are about learning-based games or COTS games, they all pave the way for further research, and brings us one step closer to the full picture, and thus, is an important part of any research done, not only for the educational system, but the research itself. So, to answer the 3rd and final research question, about the potential future of COTS games in the classroom, it is hard to give a concrete answer as there are both ups and downs to using these types of games and we are still in an early stage. The study indicates that there is potential in using the games, and at the very least, potential of researching this topic even further.

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Appendix 1 – Vocabulary pre-test

Vocabulary test – Circle the correct Norwegian translation of the word from the list (a-e).

1. Curse
 - a) Kure
 - b) Fordervelse
 - c) Forbannelse
 - d) Kurs
 - e) Forandring

2. Wimp
 - a) Vimpel
 - b) Pyse
 - c) Pisk
 - d) Vimse
 - e) Pysj

3. Outsider
 - a) Utenfor
 - b) Utenatlært
 - c) Nærstående
 - d) Utsider
 - e) Utenforstående

4. Undertake
 - a) Påsyn
 - b) Underta
 - c) Påta
 - d) Pålagt
 - e) Undertak

5. Hast
 - a) Har
 - b) Haste
 - c) Heise
 - d) Hast
 - e) Has

6. Dost
- a) Dust
 - b) Støv
 - c) Gjør
 - d) Duo
 - e) Gjø
7. Malevolent
- a) Ondulere
 - b) Ondsinnet
 - c) Monovalent
 - d) Mannevond
 - e) Motstandsdyktig
8. Vile
- a) Avskyelig
 - b) Samtidig som
 - c) Vill
 - d) Testamentet
 - e) Slør
9. Hither
- a) Hater
 - b) Oppvarme
 - c) Hete
 - d) Hit
 - e) Hitterst
10. Verily
- a) Veldig
 - b) Variere
 - c) Sannferdig
 - d) Sannhet
 - e) Sannelig
11. Fairy
- a) Storfe
 - b) Fe
 - c) Fager
 - d) Rett
 - e) Eventyr

12. Muster

- a) Sennep
- b) Mønster
- c) Måtte
- d) Mønstre
- e) Moskus

13. Deter

- a) Omvei
- b) Detektor
- c) Hindre
- d) Hinder
- e) Oppdage

14. Bum

- a) Boms
- b) Bolle
- c) Bunn
- d) Nedtur
- e) Kul

15. Gift

- a) Ekteskap
- b) Presang
- c) Presentere
- d) Forgifte
- e) Avgift

16. Thee

- a) Tre
- b) De
- c) Te
- d) Tid
- e) Deg

17. Art

- a) Er
- b) Håndverk
- c) Gjenstand
- d) Arte
- e) Art

18. Vast

- a) Enorm
- b) Vest

- c) Avfall
- d) Vase
- e) Bortkastet

19. Realm

- a) Real
- b) Overveldet
- c) Halm
- d) Rike
- e) Virkelig

20. Thou

- a) Selv om
- b) Du
- c) Gjennom
- d) Tanke
- e) Sterk

Appendix 2 – Vocabulary post-test

Vocabulary test – Fill in blank with the correct word from the list for each sentence (a-e).

1. Since the beginning writers have sought to capture the true experience of the _____, the exile, the lone wanderer.
 - a) Related parties
 - b) Outside
 - c) Outsider
 - d) Outsiders
 - e) Insiders

2. His _____ mood made him an unpleasant person to be around and upsetting everyone who witnessed his behavior.
 - a) Vile
 - b) Wild
 - c) While
 - d) Will
 - e) Vail

3. Philip supposed he was a bit of a _____, with his dislike of rugby and other rough sports.
 - a) Whip
 - b) Whimsical
 - c) Wimpy
 - d) Wimp
 - e) Wimps

4. After spending a few days in the hospital and regaining her energy, Mirabel was able to _____ enough strength to walk her 7km route in the forest.
 - a) Muster
 - b) Mustard
 - c) Mustering
 - d) Mustered
 - e) Mustards

5. This is Erling Haaland, he was transferred _____ from Norway and is playing for our club now.
 - a) Thither
 - b) Hater
 - c) Heater
 - d) Hither and thither
 - e) Hither

6. You can choose to stay here in this world or come with me to the immortal _____ and regain all your powers.
- a) Helm
 - b) Realm
 - c) Realms
 - d) Whelm
 - e) Relative
7. Blessed _____ thou in heaven and blessed is thy sacred word!
- a) Was
 - b) Is
 - c) Art
 - d) Arts
 - e) Were
8. For his service, Eric was promoted in rank, and received a _____ from the military.
- a) Gifts
 - b) To gift
 - c) Gift
 - d) Gifted
 - e) Gifting
9. Without knowing what her ancestors had done, Merida was the only one strong and brave enough to try to rid Elinor of her _____.
- a) Cursive
 - b) Curse
 - c) Cursed
 - d) Curses
 - e) Cure
10. For if thou _____ promised to have pity on us, who have no works of righteousness, then thou wilt be called merciful.
- a) Hose
 - b) Hoist
 - c) Hasted
 - d) Haste
 - e) Hast
11. Eugene was told to _____ any other duties equivalent with the nature of the post at the discretion of the committee.
- a) Underwear
 - b) Undertook

- c) Undertakes
- d) Undertake
- e) Overtake

12. He who hide it, _____ his heart is sinful.

- a) Verily
- b) Very
- c) Varying
- d) Vary
- e) Worriedly

13. There, in pride and anger, she summons a dark and _____ spirit that sorcery cannot conquer.

- a) Malevolent
- b) Monovalent
- c) Malevolence
- d) Malevolently
- e) Male violence

14. Thou who _____ continually interrupt Aurora, keep quiet and listen when she speaks.

- a) Duo
- b) Hast
- c) Dost
- d) Dust
- e) Douse

15. While some authors write tales about _____ and other critters, others write classic stories about the struggle between good and evil and how evil never prevails.

- a) Fairy
- b) Fairly
- c) Fair
- d) Fairies
- e) Fairy tales

16. Surely he shall deliver _____ from the snare of the fowler, and from the noisome pestilence.

- a) Thy
- b) Thee
- c) Three
- d) Tree
- e) These

17. Our CCTV initiative aims to improve public safety and confidence whilst actively _____ people from committing crimes.
- a) Deter
 - b) Deterred
 - c) Detecting
 - d) Detoured
 - e) Deterring
18. Probably just some _____ living in the alleyway, Naveen said with a forced laugh.
- a) Bum
 - b) Bums
 - c) Bun
 - d) Bummer
 - e) Buns
19. For _____ was born under a glittering star in the family of rulers.
- a) Thou
 - b) Thee
 - c) Thy
 - d) Though
 - e) Through
20. Another point agreed upon is that the Australian flora is one of _____ antiquity.
- a) Vase
 - b) Vest
 - c) West
 - d) Vast
 - e) Waste

Appendix 3 – The Great Deku Tree

The Great Deku Tree.

In the vast, deep forest of Hyrule... Long have I served as the guardian spirit... I am known as the Deku Tree...

The children of the forest, the Kokiri, live here with me. Each Kokiri has his or her own guardian fairy. However, there is one boy who does not have a fairy...

“Navi... Navi, where art thou? Come hither...

Oh, Navi the fairy... Listen to my words, the words of the Deku Tree... Dost thou sense it? The climate of evil descending upon this realm. Malevolent forces even now are mustering to attack our land of Hyrule.

For so long, the Kokiri Forest, the source of life, has stood as a barrier, deterring outsiders, and maintaining the order of the world. But... before this tremendous evil power, even my power is as nothing.

It seems the time has come for the boy without a fairy to begin his journey. The youth whose destiny it is to lead Hyrule to the path of justice and truth...

Navi... go now! Find our young friend and guide him to me. I do not have much time left. Fly, Navi, fly! The fate of the forest, nay, the world, depends upon thee!”

Whirling between the trees, Navi the fairy has set a straight course towards the young boy. When she finally arrives at the treehouse, Link is sound asleep in his bed.

“Hello, Link! Wake up! The Great Deku Tree wants to talk to you! Link, get up! Hey! C’mon! Can Hyrule’s destiny really depend on such a lazy boy?”

Link, awake from his deep slumber, only to find the fairy guardian Navi standing above him.

“You finally woke up! I’m Navi the fairy! The Great Deku Tree asked me to be your partner from now on! Nice to meet you! The Great Deku Tree has summoned you! So, let’s get going, right now!”

Link reluctantly gets out of bed and head towards the door. As he climbs down from his treehouse, a green figure with a fairy fluttering around, is seen approaching his house. It's a Kokiri and her fairy guardian!

Saria: "Yahoo! Hi, Link! Wow! A fairy! Finally, a fairy came to you Link! Wow! That's great news! I'm so happy for you! Now you're a true Kokiri, Link!"

Link approaches Saria with a smile. It is one of the only Kokiri that likes and accepts him. Trying to remember every detail, he excitedly explains everything that Navi just told him.

"Is that right? The Great Deku Tree has summoned you? It's quite an honor to talk to the Great Deku Tree! I'll wait for you here. Go see the Great Deku Tree!"

Link walks out in the open field of the Kokiri Forest, and two Kokiri comes swarming around him, eager to see Navi fluttering around Link.

"You're not allowed to leave the forest! The Great Deku Tree said that if a Kokiri leaves the woods, he or she will die!" one Kokiri says.

"Oh, a fairy came to you! Now you have a lot to learn!" another chirps in.

Another Kokiri runs up to the group. "Oh, you have a fairy now?! That's great, Link! What? You've been called by the Great Deku Tree? What an honor! He may give you a special gift! Tee hee! That's because the Great Deku Tree is our father, the forest guardian, and he gave life to all of us Kokiri!" and adds "I wonder if the Great Deku Tree gave life to everything in the forest, I mean in addition to us Kokiri?".

As the Kokiri happily chatters with each other, Link walks towards the Great Deku Tree, but is stopped in his path. The Kokiri leader Mido stands before him and refuses to let him through. Although Link did not mind his Kokiri leader, Mido never seemed to take a liking to him.

"Hey you! Mr. No Fairy! What's your business with the Great Deku Tree? Without a fairy, you're not even a real man!" Mido looks him up and down. "What?! You've got a fairy?! Say what? The Great Deku Tree actually summoned you? Whaaaat?! Why would he summon you and not the great Mido? This isn't funny..."

Link starts to chuckle, when Mido suddenly gets serious again. "I don't believe it! You aren't even fully equipped yet! How do you think you're going to help the Great Deku Tree without a sword and shield ready?"

As Mido stares at Link, Link looks him up and down in disbelief before Mido bursts out "What? You're right. I don't have my equipment ready, but... if you want to pass through here, you should at least equip a sword and shield! Sheeesh!" With a defeated and somewhat annoyed look on his face, Link hurries back to Saria and explains everything that Mido just told him.

"What? Mido won't let you go to see the Great Deku Tree? Ohh... That bum! I don't know why he's always so mean to everyone!" Saria pauses and ponders a bit before she continues. "What he said is true, though. The forest... strange things have been happening here lately... You need to be ready for anything. You'd better find a weapon! You can buy a shield at the shop, but there is only one sword hidden somewhere in the forest."

With a little glimmer of hope, Link gathers all the rupies that he owns and hurries towards the Kokiri shop. On his way he sees that one of the Kokiri has started mowing the lawn and walks over. "That meanie, Mido, made me cut the grass at Saria's house. Mido told Saria he would do it so she would like him, but I'm the only one doing all the work!" Link gives him an apologizing look, before he continues to the shop, and walks in.

"Welcome! This shop... It sells things you can get in the forest for free!" Link points to the last shield in the shop. "We sell shields, but no swords!". He pays for the shield and remembers what Saria told him. In order to get a sword, he needs to find it in order to show Mido.

Link ponders to himself, while walking around the Kokiri forest, when he suddenly spots a hole in the wall. It was a small hole, but big enough for a Kokiri to fit through. He has never seen the hole in the wall before, but as if something is calling to him, he crawls through the hole. It's dark, but Link continues to crawl until he sees a bright flash of light at the end of the small tunnel. Being able to stand again, he looks around and there, right before him, is the sword that Saria was talking about! He can't believe it. He grabs the sword and gleefully runs back to Mido, sword and shield in hand!

"Eh, what's that?! Oh, you have a Deku Shield... and what's THAT?! Is that the Kokiri Swords?! GOOD GRIEF!!". Slightly annoyed, Mido continues "Well, even with all that stuff, a wimp is still a wimp, huh? I, the great Mido, will never accept you as one of us!" As he lets Link past, he grumbles to himself "SHOOT! How did you get to be the favorite of Saria and the Great Deku Tree? Huh?!" Link continues down the path to his father, the Great Deku Tree.

Navi flutters to him "Great Deku Tree... I'm back!"

The trees of the Kokiri forest are large, but this tree is larger than anything he ever laid his eyes on. It is the Great Deku Tree after all, but something about him makes Link wary. As if he is sick.

"Oh... Navi... Thou hast returned..." he whimpers. "Link... Welcome... Listen carefully to what I, the Deku Tree, am about to tell thee... Thy slumber these past moons must have been restless, and full of nightmares... As the servants of evil gain strength, a vile climate pervades the land and causes nightmares to those sensitive to it... Verily, thou hast felt it..."

How did he know about his nightmares? Link had never told anyone about them.

"Link... The time has come to test thy courage... I have been cursed... I need you to break the curse with your wisdom and courage. Dost thou have courage enough to undertake this task?" Link nods carefully. He doesn't really understand what the Great Deku Tree means, but he knows that he will do anything to help his father.

"Then enter, brave Link, and thou too, Navi... Navi the fairy... Thou must aid Link... and Link... When Navi speaks, listen well to her words of wisdom..." A loud thundering sound can be heard, as the ground beneath Link's feet trembles and the mouth of the Great Deku Tree opens. Link knows what he must do, and courageously walks into the belly to face the curse that has been put upon the Great Deku Tree.

To be continued...