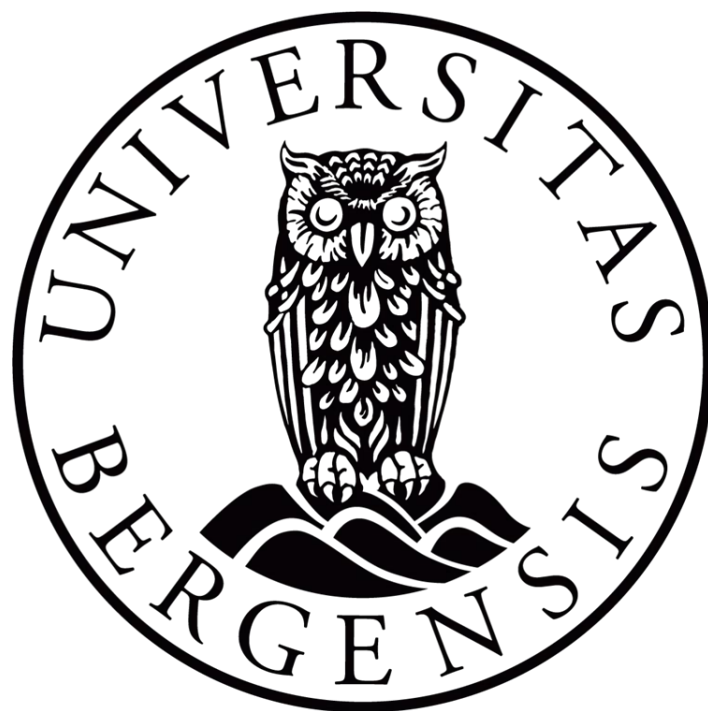


Communicative Competence and Commercial Video games:

A study of Digital Game-Based Learning
in Norwegian Upper Secondary School English Education



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Acknowledgements

Coming up on two years now, this thesis has seldomly left my mind. For long stretches it demanded all my attention, and even when it didn't it was still nestled in the back. Out of sight perhaps, never out of mind. It is almost hard to believe that I will leave the writing process behind. Writing a master's thesis is not something I will be doing; it is something I will have done. The relief is immense, and I will not pretend that the process has always been easy. But the completion of this thesis also marks the completion of my education as a teacher, and there is a profound sense of something more than just relief. There is a bit of sadness, as I leave one period of my life behind. But there is also a sense of wonder and excitement, as I am eager to keep learning in my new role as a teacher, rather than a student.

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Øyvind Hatleset, May 2023

Abstract in Norwegian

Hensikten med denne studien har vært å undersøke hvor egnet *Digital Game-Based Learning* (DBGL) (videospillbasert undervisning) er til bruk i Communicative Language Teaching (CLT) (kommunikativ språkundervisning), for å kunne dra konklusjoner om hvordan en best kan bruke videospill som et verktøy i engelskundervisningen på norsk videregående skole.

Fire VG1 klasser på til sammen 36 elever deltok i studien. Deltakerne svarte på en individuell spørreundersøkelse og deltok i et klasseromseksperiment hvor de spilte videospillet *Among Us*. Målet ved spørreundersøkelsen var å samle informasjon om elevenes tidligere erfaringer med videospill samt elevenes syn på videospill, både i og utenfor undervisningen. Spillet *Among Us* er et *commercial off-the-shelf* (COTS) (kommersiell hyllevare) videospill med fokus på kommunikasjon, og formålet med klasseromseksperimentet var å observere hvordan norske videregående elever kommuniserer med hverandre på engelsk når de spiller. Tre understilte forskningsspørsmål ble formulert for å legge grunnlaget for en produktiv diskusjon om hovedforskningsspørsmålet.

Resultatene viser at deltakerne brukte en vid rekke med forskjellige kommunikative egenskaper under klasseromseksperimentet. Fra et didaktisk synspunkt virker eksperimentet velegnet til å utvikle *communicative competence* (CC) (kommunikativ kompetanse). Under eksperimentet viste også deltakerne entusiasme for aktiviteten, og var villige til å sosialisere med hverandre på engelsk til tross for å være i et klasserom med en forsker til stede. Hvor mye elevene deltok varierte stort fra elev til elev, og virker å være relatert til tidligere erfaring med lignende videospill. Data samlet fra spørreundersøkelsen viser at deltakerne har lite tidligere erfaring med at videospill brukes i undervisningen, men flertallet er likevel veldig positive og mener det burde brukes mer. Et flertall av deltakerne spiller videospill på fritiden, og de fleste av disse rapporterer at de spiller flerspillerspill. Flertallet av deltakerne svarer at de tror de har blitt flinkere til å kommunisere på engelsk ved å spille videospill. Studien belyst også en rekke praktiske implikasjoner som er viktige å være bevisst, og identifiserer dermed også områder hvor det er nødvendig med videre forskning. Summen av resultatene indikerer at DGBL kan være et viktig verktøy for engelsklærere i norsk videregående skole når det brukes på måter som fremmer autentisk kommunikasjon.

Abstract in English

The purpose of this study was to research how well-suited Digital Game-Based Learning (DGBL) is for use in Communicative Language Teaching (CLT), with the aim of drawing conclusions on how one might best use video games as a tool for education in Norwegian upper secondary school.

Four first year classes with a total of 36 students participated in the study. Participants answered an individual questionnaire and participated in a classroom experiment where they played the video game *Among Us*. The aim of the questionnaire was to gather information about the participants' previous experiences with and attitudes towards video games, both in and outside of school. The video game *Among Us* is a commercial Off-the-shelf (COTS) video game with focus on communication, and the purpose of the classroom experiment was to observe how Norwegian upper secondary school students communicate with each other in English while playing. Three sub-research questions were formulated to provide the foundation for a productive discussion regarding the main research question.

The results show that participants used a wide range of different communicative skills during the classroom experiment. From a didactic standpoint the classroom experiment seems well-suited to developing communicative competence (CC). During the experiment participants also showed enthusiasm for the activity and were willing to socialize with each other in English despite being in a classroom with a researcher present. How much the students participated varied greatly among individuals and seems to be related to previous experience with similar video games. Data collected from the questionnaire shows that participants have little previous experience with video games being used in education, but most are still very positive and think they should be used more. A majority of participants play video games in their spare time, and most of these report that they play multiplayer games. Most participants answer that they believe they have become better at communicating in English by playing video games. The study also illuminated a series of practical implications which are important to be aware of, and thereby also identifies areas where more research is required. These results indicate that DGBL can be a valuable tool for English teachers in Norwegian upper secondary school when used in ways that promote authentic communication.

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1 INTRODUCTION

1.1 PROLOGUE

I have played video games for as long as I can remember. If I was to stipulate how much time I spent playing video games in my childhood, I believe the number of hours must be well into five figures. In hindsight, I realise what a significant and formative role they have had in my life. Many hours were spent playing alone, gathering pocket monsters, exploring strange worlds, or taking part in grand narratives of heroism. The challenges these games gave me taught me persistence and problem solving, and the stories I experienced taught me about moral and character. But for every moment I spent playing alone, just as many moments were spent playing with family and friends, and video games have served as a foundation for many important relationships in my life. My older brother taught me to play, and playing with him helped me develop a competitiveness which is reignited every Christmas, as we spend the late hours of the night replaying the games we enjoyed in our youth. In my school years, my friends and I would haul box TVs and video game consoles across town for LAN (Local Area Network) parties. When I began playing video games online, I made friends with people from all parts of the world. I became close friends with a group of peers from England, which for a period I spoke with through voice chat almost every single day. I believe I owe them much of both my proficiency with and interest in the English language. Thinking back, it is impressive how much joy, but perhaps more importantly learning, this hobby has given me.

Therefore, it is not surprising that when I began my studies to become an English teacher, I knew I wanted to bring video games into the classroom. I am very aware of how much they have taught me, either directly or indirectly, and I believe they can be used to help others learn in the same way. Directly through the gameplay, or indirectly through the social element of it. Even though I know how much video games have taught me, I also know that everyone learns differently, and I am in no way oblivious to the fact that my experiences are not universal. I believe video games hold serious potential for learning, but rigorous testing and research is required before this potential can be exploited. Therefore, as I began the process of writing this thesis, I knew quite quickly that I wanted to write within the field of didactics and that I wanted to study the viability of Digital Game-Based Learning (shortened to DGBL) in English education. Video games have changed dramatically since I grew up, and from a didactic standpoint I believe this change is for the better. The technology itself has progressed at an impressive pace, but equally as important the culture surrounding video games has seen massive change.

1.2 DIGITAL GAME-BASED LEARNING

Video games is a massive cultural phenomenon. It is common knowledge that video games have become an accepted part of popular culture, and in many ways the video game industry has become the trendsetter among the entertainment industries. In an article written for Statista, data journalist Felix Richter (2022) shows how the video game industry massively outperformed other entertainment industries on global revenue in 2021 with an estimated revenue of \$192.7 billion, which dwarfs the filmed entertainment and recorded music industries, with estimated revenues of \$99.7 and \$25.9 billion respectively. Gaming as a hobby has become the norm rather than the exception among the youth of today. The rise of E-sports and streaming platforms such as Twitch is only further proof of this, as many spend hours consuming game related content when they are not playing themselves. This popularity means that many students might welcome video games with open arms into their education. Internationally, the educational potential of DGBL is therefore already a well-established area of research within the field of English didactics (Aleksić et al., 2016; Behnamnia et al., 2020; Charsky & Mims, 2008; Gee, 2005a; Habgood & Ainsworth, 2011; Hussein et al., 2019; Mohamed & Shaaban, 2021; Oliver, 2018; Prensky, 2001; Qian & Clark, 2016; Shute et al., 2015; Van Eck, 2006, 2015).

Norway has welcomed video games wholeheartedly, and Norwegian government institutions have recognized the educational and cultural importance of video games. In 2020 the Norwegian Ministry of Education and Research implemented LK20, a new nationwide curriculum. In LK20, the English subject curriculum now lists video games as a media form that students are expected to work with. The Norwegian Ministry of Culture and Equality has recognised video games as a cultural phenomenon with the publication of a dedicated video game strategy named *Spillerom* (2019), in which the Ministry established how they wish to lift video games as a cultural expression, art form, industry, and hobby in Norway. This recognition from two major government institutions means research on the use of DGBL in Norwegian upper secondary school is more relevant than ever. To the best of my knowledge DGBL has become a popular field of research in Norway, but more research is still required. To be able to take full advantage of the unique possibilities DGBL presents, data from Norwegian studies is necessary to help establish a clear understanding of how specifically Norwegian upper secondary school students might benefit from DGBL. More empirical data gathered from national studies will provide a basis of comparison which in turn will allow Norwegian researchers to take full advantage of the wealth of knowledge available from international studies. Considering the need for research on DGBL in Norwegian schools and my own experiences with video games in the past, it was logical for me to write the present thesis on this topic.

1.3 IN COMMUNICATIVE LANGUAGE TEACHING

DGBL has a wealth of benefits and challenges, and therefore also a wealth of possible areas of study. I quickly realised that researching DGBL in general would result in a study that was broad and without any real specific contribution to the field. It was not difficult to narrow the scope, however. As mentioned in section 1.1, I learned much from video games alone. But I learned equally as much, if not more, from the social element of the experience. Gaming for me was a social hobby, and I learned a lot from situations where the video games simply acted as the catalyst for learning. Often the actual learning came from communicating, solving problems, and socializing with friends while playing. This was important, particularly in the case of English foreign language (EFL) learning. Perhaps it is because I learned most of my English through communicating with others that I have always felt an affinity towards Communicative Language Teaching (CLT). This approach to English didactics will be explained further in section 2.3, but the essence of the approach is that language learning happens primarily through authentic communication, and that the goal of an English teacher using the approach should be developing communicative competence (CC) in the learner. Based on my own experiences, I believe video games may be well suited to CLT in many ways, for example as a catalyst for discussion.

1.4 AIMS AND SCOPE OF THE STUDY

Considering the information presented in section 1.2 and 1.3, a natural question to ask then becomes: How well suited is DGBL to CLT? This question laid the foundation for the early process of shaping the study. After some considerations and feedback from peers, the decision was made to have a quite general and overarching main research question, which would be supplemented by sub RQs that help answer the main RQ. A general main RQ would allow for varied and specific sub RQs, created with the aim of collecting information that might help create an interesting discussion. Based on the question presented just above, the following main RQ was eventually formulated:

Main research question: According to data gathered from participating students in Norwegian upper secondary school, how well suited is Digital Game-Based Learning to Communicative Language Teaching?

From quite early in the process the idea of a classroom experiment became central to the study. The thinking was that such an experiment would allow the researcher to observe and record students playing video games in the classroom, providing empirical data on authentic communication produced in a DGBL context. Such an experiment could provide a wealth of interesting information related to how students communicate while playing video games intramurally (within the

classroom), as opposed to extramurally (outside the classroom). My own previous experiences with video games were solely extramural, and so I was curious whether the intramural context would fundamentally change how discussions tend to be in a gaming context: casual, relaxed, and fun. It seemed likely that the context of a classroom and the presence of a teacher would make these discussions somewhat more formal, but I was very curious to study to what degree and how this might change the learning potential of the discussion from a didactic standpoint. How the classroom experiment eventually was formed will be detailed in section 3.3, but the decision was made to use the social deduction multiplayer video game *Among Us* (Innersloth, 2018) in the experiment. This game uses discussion as one of its core gameplay mechanics and actively encourages players to partake in discussion and seek information from each other (*Among Us* will be explained in detail in section 1.6). The scope of the study was quite quickly narrowed to upper secondary students, as the amount of communication desired for such an experiment to be worthwhile would require a certain level of proficiency among the participants. With a classroom experiment in mind, the following sub RQ was formulated:

Sub research question 1: How do participating students in Norwegian upper secondary school use English to communicate in a multiplayer video game in an intramural context?

With the knowledge that a classroom experiment would require a large amount of work to plan, carry out and analyse, a practical and less time-consuming solution was desirable for the next RQs. With the aim of supplementing the data gathered from the classroom experiment, a questionnaire was deemed to be a practical and effective method of quickly gathering large amounts of information. Despite the practicality of a questionnaire being an important factor in this decision, a questionnaire also has several strengths, especially regarding quantitative data (which will be discussed further in chapter 3). The questionnaire would also be able to collect several types of data, and eventually two sub RQs were formulated which would be answerable with data from the questionnaire.

Sub RQ 2: According to data gathered from participating students, do we see a relationship between students' reported extramural engagement in multiplayer video games and evidence of communicative competence in English?

Sub RQ 3: According to data gathered from participating students, to what extent do students in Norwegian upper secondary school believe video games have helped them develop their communicative competence?

Sub RQ 2 was formulated to provide a discussion on extramural gaming habits, which could then be compared and contrasted to the intramural data collect in sub RQ 1. Sub RQ 3 was created to collect students own self-reported opinions on whether video games can be used to develop CC, which might provide valuable insight into the viability of DGBL in CLT.

1.5 THESIS OUTLINE

As already mentioned, the final section of the introduction will explain in some detail how *Among Us* (Innersloth, 2018) works, to provide insight into the classroom experiment.

Chapter 2 establishes a theoretical background which lays the foundation for the study. The chapter is divided into three main sections, first presenting theory on DGBL in general, followed by theory on Communicative Language Teaching, and finally DGBL within CLT specifically.

Having established an overview of relevant theory, chapter 3 then discusses methodology. First research design is discussed, before methods of data collection and analysis are presented. Finally, considerations such as validity and limitations of the study are presented.

Chapter 4 is structured around the research questions, presenting results and relevant discussions organized according to the sub RQs. Finally, the discussion of the main RQ is then presented, based on the results and discussions of the sub RQs.

Ultimately chapter 5 attempts to conclude the thesis by summarising the discussions in chapter 4, before drawing conclusions to the research questions. In the end, suggestions for further research are presented.

1.6 EXPLAINING THE GAME

In the following section, a brief explanation of how the video game *Among Us* is played will now be provided. *Among Us* is as mentioned a social deduction video game. In the game, a host (the player who controls the game) creates a lobby (a persistent game session within which the actual game is started) where other players may join using a six-digit code. When the host is ready, they may start the game. All players, including the host, are then put aboard a spaceship, and sorted into two separate roles: crewmembers (protagonists) and impostors (antagonists). Most players become crewmembers, usually at a rate of 80 or 90% which is decided by the host. The crewmembers must complete tasks around the spaceship and will win the game if all crewmembers complete their tasks. The crewmembers do not know what roles the other players were given; this information is given to the impostors. Their goal is to eliminate the crewmembers before all tasks are completed.

The game may be divided into three phases: play phase, discussion phase and voting phase. In the play phase, the players are not allowed to communicate. Crewmembers attempt to solve tasks while imposters attempt to eliminate crewmembers by killing them. When a player finds a dead body they may report it, which will bring the game into the discussion phase. This phase may also be entered if a player calls an emergency meeting. This is where the social deduction comes into the game. In the discussion phase players are brought into a virtual meeting room, where their only option is to communicate with each other. The discussion phase is always followed by a voting phase, where players may vote to eliminate a player from the game. Typically, the discussion phase will start with the player who called the meeting explaining themselves. Then, players may accuse other players of being an imposter. For crewmembers it is desirable to vote the imposter off the spaceship, but imposters may also manage to convince other players to vote for other crewmembers. Because of the voting phase, imposters must attempt to eliminate crewmembers while appearing as an innocent crewmember themselves. Also, since players can not present any evidence outside oral explanations during the discussion phase, players are forced to improvise accusation or defences which may win them the game. If the crewmembers manage to vote all imposters off the spaceship, they win the game automatically.

After a game is won by either side, the imposters are revealed, and the players are brought back to the lobby where the host may start a new game where roles are once again divided randomly. A single game takes approximately 15 minutes to complete but may vary greatly in time span depending on number of players, settings decided by the host and the ability of the imposters to remain anonymous.

2 THEORETICAL BACKGROUND

2.1 CHAPTER OVERVIEW

This chapter aims to provide the necessary theoretical overview to answer the RQs posed in the introduction. As this thesis focuses on the conjunction of two large and separate topics, digital game-based learning (hereby shortened to DGBL) and communicative competence, it may be beneficial to first consider each topic separately.

Therefore, section 2.2 of this chapter will discuss the possibilities and challenges of DGBL. Firstly, DGBL and other important terms will be defined, before the section will aim to give a brief overview over some general trends, including benefits and challenges of DGBL, that exist within the wealth of research that has emerged on the topic in recent years.

Subsequently section 2.3 will delve into the subject of communicative competence. The section will first focus on communicative competence as a concept and how it has been defined. Moving on, the section will highlight existing didactical research on how to approach communicative language teaching in the classroom.

Lastly, section 2.4 will focus on these two concepts, DGBL and communicative competence, in relation to each other. Some of the standout benefits of using DGBL to complement communicative language teaching in the classroom will be discussed before the section aims to address research on gaming as an extramural activity and the implications this has within the classroom.

2.2 DIGITAL GAME-BASED LEARNING: AN OVERVIEW

2.2.1 Terminology

This subsection aims to define and discuss key terms within the topic of digital game-based learning. For the sake of clarity, these key terms are as follows:

Digital games and video games - Digital game-based learning - Commercial Off-the-Shelf video games - Serious games

As detailed in the introduction, video games are being adapted for use in the classroom at an increasing rate, due in part to acknowledgment of the potential video games have for learning (Gee, 2005a; Habgood & Ainsworth, 2011, p. 170). When speaking of video games in education, it is

beneficial to turn to the term digital game-based learning. Marc Prensky, who coined the term in his book *Digital Game-based Learning* from 2001, described the concept behind the term as the combination of learning and digital games (Prensky, 2001). In another article, Prensky argues that video games are developed with a certain expertise in creating motivation and engagement that is very beneficial when used for the purpose of learning (Prensky, 2003, p. 1). Van Eck is another highly acknowledged researcher within the field and in 2015 he argued for the continued use of the term DGBL because it got many important factors right (Van Eck, 2015, p. 14). He argues that the modifier “Digital” will always be necessary as long as analogue games (e.g., board games, card games etc) exist, and perhaps more crucially he argues that “game-based” is important as it limits the implications of the definition. As will be discussed in greater detail later, video games may be the source of learning, but may also simply function as a tool to assist learning. This thesis will therefore use DGBL to refer to any situation where digital games are used in the context of learning.

The term DGBL bases itself on the term *digital games*, which is in essence a synonym for the more colloquial term *video games*. These two terms are both used frequently within research on the subject (for example Prensky 2003; Van Eck 2015). Many would agree that *video games* is the more common term. This term is very well established, especially within popular culture. However, it may be argued the term *digital games* has the benefit of being somewhat more precise. Not all video games include video, after all. Yet, they differ from analogue games specifically in the fact that they are digital. Despite this, these terms will be treated as synonyms and used interchangeably within this thesis.

It is hard to define exactly what constitutes a video game (Tavinor, 2008). However, for the sake of brevity it may be beneficial to use a simple definition. Merriam-Webster provides the following definition of the noun *video game*: “an electronic game in which players control images on a video screen” (Merriam-Webster, n.d.). While one may argue that this definition is simplified, it is still applicable enough to be used in this thesis.

Digital games is an umbrella term encompassing a wide range of subsets, but this thesis will mainly divide digital games into two specific subsets: Commercial Off-the-shelf video games (hereby shortened to COTS) and serious games. This distinction is dependent on the purpose for which the video game was made. COTS is a term used to refer to video games developed primarily for the sake of entertainment (Van Eck, 2006, p. 7). They differ from serious games, which refers to games made primarily for the purpose of learning (Djaouti et al., 2011, p. 25). However, it is important to note that their primary purpose does not reduce a video game’s potential for neither learning nor entertainment. Serious games will often be designed to be entertaining, and as will be discussed

further in another section, there is a wealth of research that suggests there is great educational potential in the use of COTS within a formal educational setting (Aleksić et al., 2016; Becker & Gopin, 2016; Brevik & Holm, 2023; Charsky & Mims, 2008; Gee, 2005b, 2017).

2.2.2 The possibilities and challenges of DGBL

Having defined key terms within the field of DGBL in the subsection above, this subsection aims to highlight some research on the several benefits of using DGBL in education, while also keeping in mind some of the challenges. While there is important research that argues the usefulness of DGBL in history (Zin et al., 2009), theology (Oliver, 2018), mathematics (Hwa, 2018) and several other subjects, within the scope of this thesis it is most relevant to focus specifically on research done within the field of EFL.

The English subject curricula in Norwegian education lays the baseline for what may be considered relevant education in a Norwegian context. LK20 lists several basic skills (oral skills, writing, reading and digital skills), some core elements (communication, language learning and working with texts in English) and competence aims for each level of Norwegian EFL education (Ministry of Education and Ministry of Education and Research, 2019). Therefore, it is reasonable to argue that DGBL is a useful tool in Norwegian EFL education whenever it aids in the achievement of any competence aims, the development of basic skills or core elements of LK20. Some examples of research that support this argument will be provided to give a very brief overview of existing research. The research provided is a small sample, but this sample has been chosen because it provides valuable insight into both benefits and challenges of DGBL, while also showing how teachers may address some of these challenges.

Van Eck writes that while there are challenges to implementing COTS video games in the classroom (Van Eck, 2006, p. 7), he considers this to be the most practical approach for teachers as there is a large amount of high quality COTS available that have been shown to have a high educational potential (Van Eck, 2015, p. 20). He also adds that to his knowledge, it is currently more prevalent to use COTS in education than serious games. When considering the use of COTS, Becker and Gopin (2016) have written an informative book chapter that aims to provide teachers with the tools to help them select the right COTS video games and produce results with DGBL. Their chapter, named *Selection Criteria for Using Commercial Off-the-Shelf Games (COTs) for Learning*, establishes a framework called The Four Pillars of Educational Games (shortened to 4PEG) that helps evaluate COTS video games for educational use (Becker & Gopin, 2016, p. 51). The four pillars are game overview, teacher support, educational content and what they call the “magic bullet”-rating. In brief, this system encourages teachers to consider several aspects of COTS before implementing them into

education. Time consumption, educational content, ease of use and gameplay should all be considered, amongst other aspects (Becker & Gopin, 2016, pp. 51-52). The “magic bullet”-rating pillar refers to subjective evaluation or “gut feeling”, meaning that if a teacher has a good feeling about the potential of a video game it is worth exploring. When concluding the chapter, Becker and Gopin give an overview of what they consider to be the best practices when selecting COTS video games for use. While they stress the importance of the educational aspects of the game, they also stress that the games must be evaluated as a game. If the game is not fun, then the benefits of using it in education quickly diminish (Becker & Gopin, 2016, p. 57). Becker and Gopin also urge teachers to be critical in their selection and consider the time they will have to invest to receive educational value from a game, both in class but also in preparation (2016, p. 57). They state that using video games in the classroom without a significant educational gain will often not be worth the time invested.

In a study published in 2013, Chen and Yang aimed to analyse how using a COTS adventure game would impact the vocabulary and language learning of EFL learners at college level in Taiwan (Chen & Yang, 2013). The study was done in two parts. In part one, twenty-two participating students were divided into two groups. They would all play the adventure game BONE, but only one group would take notes during the session. Participants would complete both a pre- and post-activity vocabulary test. The study showed no significant difference between the two groups, but both groups showed vocabulary gains. Chen and Yang do bring to light some issues regarding time restraints (Chen & Yang, 2013, p. 132). The length of the experiment in study one was 2 hours, which only allowed participants to play a short selection of the game. A new study, study two, was therefore conducted so that participants would be given the opportunity to experience the whole game. However, referring back to Becker and Gopin, time constraints such as these are important to acknowledge, as video games may be very time consuming and may require more time than what is available in a traditional classroom lesson to realise their potential (Becker & Gopin, 2016).

In part two of the study, participants would finish the whole game, but they would do so within their own leisure time. Because of the less controlled circumstances of study two, it would be difficult to conclude whether or not learning could be attributed to the game or other factors. Therefore, only the participants’ attitude towards the game was reported. Thirty-five college students participated in study two, and most of them reported that the game had helped them improve their listening, reading and vocabulary skills (Chen & Yang, 2013, p. 135). Eleven participants reported an increased vocabulary, while eight participants reported the the game had aided their learning motivation. It is particularly interesting that several students reported that the all-English learning environment provided by the game “forced” them to think and work in English, which assisted their language

learning. Participants did, however, also report some challenges. Some participants struggled with language comprehension, and failed to follow the pace of the dialogue and subtitles. There were also a large number of unknown abbreviations (Chen & Yang, 2013, p. 136). Outside language comprehension, two participants also reported that the gameplay took their attention away from language acquisition. Here students played the game as homework, and some of these challenges may be mitigated in the classroom by the presence of a teacher. It is therefore important that teachers who wish to use similar games to BONE in the classroom are aware of these challenges.

Ranalli (2008) researched how the COTS simulation game *The Sims* could be used in L2 vocabulary learning among EFLs at American university level, and their findings supports those of Chen and Yang. Ranalli's study, however, stresses the importance of theoretical guidance and supplementary EFL materials to achieve the best results (2008, p. 453). The study reports a significant difference in vocabulary gains between participants that were given supplementary materials and those that were not (Ranalli, 2008, p. 448).

Aleksić et al (2016) conducted a study which aimed to survey self-report attitudes towards COTS video games in education among primary school students in Serbia. A total of twenty-two Serbian schools participated, resulting in sample size of 1262 students between the ages of eleven and fifteen. From this sample, 1164 questionnaires were answered. When the respondents were asked for how long they had played video games, 225 respondents answered that they did not play video games, 484 answered that they had played for more than five years and the remaining respondents answered somewhere inbetween (Aleksić et al., 2016, p. 357). The following question asked respondents about their opinion on the education potential of COTS. Aleksić et al describe the results as interesting, as 389 respondents did not believe COTS had taught them any useful knowledge or skills. This amount is higher than the 379 respondents that reported they thought COTS could sometimes teach them useful knowledge. 217 respondents reported that they would often learn useful knowledge from COTS. The number of respondents who believe there was some education potential in COTS was therefore higher than the number who believed they had no educational potential at all, but the latter made up the largest single group of respondents. To specify, this study did not research COTS in EFL specifically but education in general, however their findings are still interesting to consider due the large number of respondents.

2.3 CONSIDERING COMMUNICATIVE COMPETENCE

The following section will consider relevant literature on communicative competence. First the concept will be discussed in 2.3.1, before communicative language teaching is expanded upon in 2.3.2. Finally, 2.3.3 will explore the challenges of measuring communicative competence.

2.3.1 Key aspects of communicative competence

This subsection will discuss communicative competence as a concept and the many subcompetences it entails based on relevant literature. Understanding communication is a necessary cornerstone to be able to understand communicative competence. Referring back to LK20, the English subject curriculum considers communication a core element of the English subject (2019, p. 2). According to the LK20s description of communication, it entails being able to create meaning through language and having the ability to use language in both formal and informal settings (2019, p. 2). The key to communication is social interaction, both oral and written. In a social interaction lies an exchange of meaning, and it is therefore equally as important in communication to understand others as it is to make oneself understood.

Communicative competence as a concept was first popularized in the early 1970s by Dell Hymes (1972). The term is inherently linked to communicative language teaching (Skulstad, 2018, p. 44), and the idea behind the term is that if the aim of language study is language use, then the process of language learning should be guided by the learners ability to communicate (Savignon, 2017, p. 1). This is in contrast to the grammar-translation method, which saw language as a set of grammatical structures that could be mastered through a focus on grammatical patterns and pronunciation (Savignon, 2017, p. 2). Communicative language teaching highlights several other skills, particularly social skills, that may be necessary to successfully communicate. These skills, commonly referred to as subcompetences, will now be discussed.

This thesis relies primarily on the *Common European Framework of Reference for Languages: learning, teaching, assessment* (Council of Council of Europe, 2001) (hereafter shortened to CEFR) for its definition of communicative competence and its subcompetences. CEFR has been chosen because it has had substantial influence within education. The document has inspired L2 teachers and it has helped shape national curriculums and textbooks (Skulstad, 2018, p. 49). This is perhaps because CEFR provides a detailed explanation of several concepts that may often be hard to define, including communicative competence. In addition to the version from 2001, the Council of Europe released a companion volume in 2021 which expands on the original. CEFR 2001 is still valid and will be the main source on communicative competence used in this thesis, but the companion volume will also be consulted for some new aspects of communicative competence introduced there.

Initially it may be beneficial to address how CEFR defines the word competence within the context of communicative competence. CEFR describes competences as "...the sum of knowledge, skills and characteristics that allow a person to perform actions" (2001, p. 9). CEFR distinguishes between two sets of competences on which language use is dependent: general competences and communicative

language competences. General competences are not language competences but include general knowledge and know-how that is required to perform any kind of action, including the use of language (2001, pp. 9-13). General competences are mentioned here because they are important to be aware of, but in this thesis the communicative language competences (hereafter shortened to CLC) are the most relevant to consider. For clarification, the key difference between CLC and communicative competence is that CLC does not include the general competences previously mentioned.

CEFR provides a detailed description of CLC, but this subsection will attempt to provide a brief yet accurate summary. CEFR divides CLC into three major subsets of competences (2001, p. 108). These competences are linguistic competences, sociolinguistic competences, and pragmatic competences.

- Linguistic competences (2001, pp. 108-118) are the knowledge and mastery a speaker has of the language and its many rules and structures. To be able to communicate, a speaker needs to comprehend the language. Linguistic competences include six defined competences:
 - lexical competence
 - grammatical competence
 - semantic competence
 - phonological competence
 - orthographic competence
 - orthoepic competence

While it is not practical in the context of this thesis to define each of these competences separately, a short but simplified explanation may be necessary. Lexical competence focuses on vocabulary, while grammatical competence entails understanding of grammar structures, syntax and the like (2001, pp. 110-115). Semantic competence concerns the speaker's awareness of language's actual meaning, and phonological competence deals with the mastery of the many sounds within a language (2001, pp. 115-117). Orthographic competence is the ability to create written language, and orthoepic competence is producing oral language from written text (2001, pp. 117-118). These linguistic competences are completely necessary for a speaker to communicate but are only one part of CLC. As Hymes specified, grammar rules would be useless to a speaker unless combined with knowledge of the rules of use within a language (Hymes, 1972, p. 278).

- Sociolinguistic competence makes up an important part of the rules of use that Hymes refers to. Language is a sociocultural phenomenon, and sociolinguistic competence is the knowledge and skills required to handle this social dimension of language (2001, p. 118).

Examples of such knowledge includes politeness conventions, knowledge of linguistic markers, being able to register differences, knowledge of dialect and accents and more (2001, pp. 119-122). It may be argued that when speakers use colloquial phrases such as “being able to read the room” and “knowing what to say”, they refer loosely to sociolinguistic competences.

- Pragmatic competences are concerned with a language users’ ability to arrange and structure message to perform a function (2001, p. 123). Much like linguistic competences, CEFR divides pragmatic competences into sub-competences:
 - discourse competence
 - functional competence
 - design competence

Discourse competence regards the construction of coherent sequences of language (2001, pp. 123-125). Constructing a compelling argument and telling a good story may be regarded as discourse competence. Functional competence concerns the functions language may have, and includes knowledge of why something is said rather than what is said (2001, pp. 125-130). Design competence is described as knowledge of how messages are sequenced within interactions (2001, p. 123).

The paragraph above explores communicative competence as presented in CEFR from 2001. As mentioned, however, the Council of Europe also published the companion volume in 2021, which updated the 2001 version. Everything discussed above is still valid, and the 2021 version simply expands upon it. While sociolinguistic competences are largely defined the same (2020, pp. 136-137) and linguistic competences are explained and labeled somewhat differently but not to a great extent (2020, pp. 130-136), it is worth discussing how pragmatic competences have been expanded (2020, pp. 137-142). The 2001 sub-competences have been expanded upon with six additional aspects:

- flexibility
- turntaking
- thematic development
- coherence and cohesion
- propositional precision
- fluency

A brief explanation will now be provided for each aspect. Flexibility is the ability to adapt language to new situations, such as reformulating a sentence to emphasise a point that perhaps wasn’t clear enough. How to initiate, maintain and end a conversation is considered turntaking. Thematic

development concerns rhetorical structure, and would include developing a sound argument or telling a story. Coherence and cohesion is the ability to weave elements of text or speech together into coherent whole using for example cohesive elements. Propositional precision regards the degree to which a speaker manages to express themselves without compromise, and finally fluency is to be understood in a narrow sense, meaning the ability to maintain conversation with ease and despite hesitation and pauses. These six skills all relate to the pragmatic competences introduced in the 2001 in various ways. For example, the connection between thematic development and discourse competence is quite apparent, and turntaking as a skill would be defined as an example of functional competence.

While the CEFR companion volume explains the sub-competences somewhat differently, CLC is still made up of the same three categories of competences: linguistic, sociocultural, and pragmatic. However, two additional competences are introduced in the companion volume which should be mentioned: plurilingual and pluricultural competence (2020, pp. 123-128). These are not part of the CLC, but rather part of communicative competence as a larger concept. The key to these two competences is the understanding that a language is not mastered separately, but rather in context with what knowledge the learner already possesses of language and culture. Language and culture are interconnected. One important aspect of plurilingual competence is the ability to use knowledge of another languages for communicative purposes, for example by recognizing cues and similarities to aid language comprehension. Pluricultural competence regards the many ways in which culture and language is connected, and an example may be the ability to recognize and apply the norms of language use within different cultures.

Communicative competence is the aim of communicative language teaching. As CEFR shows, communicative competence is a concept that pulls on a wide range of skills and knowledge. Keeping CLC and all its sub-competences mentioned above in mind, communicative competence should be understood as the sum of these competences combined with plurilingual, pluricultural and general competences. It may then be argued that all learning which supports the development of one or more of the many sub-competences within the concept, is supporting the development of communicative competence to some degree.

2.3.2 Core principles of communicative language teaching

Having provided a basic understanding of communicative competence in the previous subsection, this subsection aims to give some insight into how communicative language teaching (commonly shortened to CLT) is approached in EFL. This subsection will be brief, as section 2.4 will in some ways regard the same topic.

While there is no one specific learning theory that underlies CLT (Skulstad, 2018, pp. 54-56), an important core aspect of CLT is the social context of language. Purpose-driven communication between learners promotes language learning. This is considered real or authentic communication, and requires that learners are not simply using language mechanically. This is called the communication principle (Richards & Rodgers, 2014, p. 90). As an example, two learners performing rehearsed dialogue is not real communication, and a dialogue with an actual exchange of meaning would better promote learning. Meaning is also important for a second principle of CLT, the task principle. This principle entails that language used in meaningful tasks promote learning. An example of this is problem solving, where learners have to use language to solve a problem (Richards & Rodgers, 2014, p. 90). For instance, this may be done through an information gap task, where learners are given one piece of information, one piece of the puzzle, and have to combine their information to solve a problem (Skulstad, 2018, p. 61). Finally, CLT holds a third principle referred to as the meaningfulness principle. Once again meaning is the key word. The language used in tasks and examples should be meaningful to the learners. Learners will learn the most from working with authentic language (Richards & Rodgers, 2014, p. 90). These three principles detailed above, the communication principle, the task principle and the meaningfulness principle, may help teachers understand how to promote development of communicative competence. Meaning is crucial, and teachers should aim to engage learners in the act of interpreting, negotiating and expressing meaning through language (Savignon, 2017, p. 4).

2.3.3 Measuring communicative competence

As mentioned above, communicative competence is a complex concept which encompasses several sub-competences. While it is quite possible to measure some of the skills that make up communicative competence separately (e.g., lexical competence), there are several reasons why it may be difficult to measure communicative competence at large. Measuring all sub-competences individually to determine an overall communicative competence would be theoretically possible, but since the concept is so multifaceted and some sub-competences (e.g., sociolinguistic competence) are hard to measure, this would be very time-consuming and therefore impractical in, for example, the time-sensitive context of a classroom. Torres-Gordillo et al (2020) carried out a study where they designed a model for assessment of communicative competence in Spanish primary education, which aimed to help teachers improve education by streamlining the process of measuring communicative competence. However, teachers who participated in the study reported that while the model worked, it was time-consuming and impractical. Torres-Gordillo et al therefore concluded that while the model worked it needed further research (2020, pp. 12-13).

Within research, the difficulty of measuring communicative competence may be considered an issue of validity. For research on communicative competence to appear valid, the approach used to measure communicative competence must be research-based and sound (more on this in subsection 3.6.3). Since it is challenging to measure communicative competence, one approach is to rather measure specific sub-competences. A study by Calvo-Ferrer and Belda-Medina (2021) which will be discussed in section 2.4.1 focuses specifically on vocabulary learning. They use a communicative approach to language teaching (2021, p. 1), but by concerning themselves primarily with vocabulary they avoid the issue of measuring communicative competence at large. Limiting the scope of studies on CLT may therefore be an effective way to ensure validity, since a focus on, in this case, linguistic competence means that testing lexical competence appears sufficient. Hofmeyr (2020) also focuses on sub-competences, though with a different approach (the findings of the study will be discussed in section 2.4.1). Hofmeyr's study uses a limited coding scheme (Mckay, 2006) to analyse the interactions between three participants who played a COTS video game. The researcher created a coding scheme which aimed to identify and categorize how the participants used common interactional strategies, including confirmation checks, clarification requests and comprehension checks. By identifying the use of such interactional strategies, one may then argue that the participants are developing their pragmatic competences, such as discourse and functional competence.

This approach, performing interaction analysis using a limited coding scheme (explained in section 3.5.1) may be used for other sub-competences than just pragmatic competences as well. A coding scheme related to several sub-competences of communicative competence might also include codes that are related to sociocultural competences or linguistic competences. For example, politeness conventions are one of the most recognizable aspects of sociolinguistic competences, and as such a coding scheme could include codes related to all instances of politeness. Then, for every instance of this code registered, it may be argued that speakers are exercising their sociolinguistic competences. With regards to linguistic competences, one may argue that all authentic communication is an exercise, but specific instances which might be coded are, for example, when speakers correct themselves or others, either on grammar, spelling, or similar linguistic aspects of language. Using this approach and focusing on sub-competences allows for a more practical and applicable solution to measuring communicative competence rather than attempting to measure the sum of all sub-competences. This approach lays the foundation for the interactional analysis performed as part of the research in this thesis, and section 3.5 will therefore return to this discussion.

2.4 USING DGBL TO DEVELOP COMMUNICATIVE COMPETENCE

Section 2.2 and 2.3 have attempted to cover key concepts within the topic of DGBL and communicative competence respectively. This section then aims to bring these two concepts together. First, subsection 2.4.2 will, in light of relevant research, discuss how DGBL may be used within the classroom according to the principle of CLT to develop communicative competence. Secondly, subsection 2.4.3 will highlight some literature that shows how video games as an extramural activity has affected students' communicative competence and what implications this has within the classroom.

2.4.1 The intramural possibilities of DGBL within CLT

The study conducted by Chen and Yang (2013) and the study by Ranalli (2008) both reported that the participants in the studies had showed an expanded vocabulary after the completion of their experiment (see section 2.2.2). As detailed in subsection 2.3.1, communicative competence consists of several subcompetences, one of which is linguistic competence. Therefore, both these studies suggest that DGBL may be a useful tool to develop linguistic competence. Interestingly, in Ranalli's study the participants played the video game *Sims* in groups of three. When asked whether or not the participants had enjoyed playing the game together and if they had talked to each other in English while playing, most participants answered very positively (Ranalli, 2008, p. 449). This may then be viewed as an example of a problem solving task according to the task principle of CLT. The participants were engaging with each other through authentic conversation in English to solve a problem.

Another example of games being used as a problem solving task appears in a study from Japan conducted by Hofmeyr (2020). In this study, Hofmeyr researched how the video game *Keep Talking and Nobody Explodes* may be used as an information-gap puzzle to promote communicative competence. Three English learners at a Japanese university played the game over four sessions. Hofmeyr then analyzed the participating students' language output during the sessions, and attempted to identify instances of importance where negotiation for meaning happened between the participants. In the results of the study (2020, pp. 7-15), Hofmeyr identified 51 instances of negotiation for meaning, where 47 of these instances resulted in repair of a potential breakdown in communication. Another result of interest is a total of 1,013 confirmation checks between participants, which Hofmeyr credited to the time sensitive puzzles of the information-gap task.

When considering these findings, Hofmeyr is cautiously optimistic (2020, pp. 15-17). The play sessions resulted in a high amount of both L2 input and output, but he adds that once the participants had grown accustomed to the game L2 output was significantly reduced in length and

complexity. However, the findings undoubtedly show that the game was able to trigger instances of spontaneous negotiation of meaning. This is a significant finding for CLT, because such instances are examples of real, authentic and meaningful communication that helps develop several important sub-competences within communicative competence. Hofmeyr's findings in this study are valuable, as they suggest there may be significant potential of promoting learning of EFL in co-operative problem solving games such as *Keep Talking and Nobody Explodes*, but the rate of language learning may decline the longer learners play the game.

In his study of *Keep Talking and Nobody Explodes*, Hofmeyr reported providing no supplementary material to support learners' L2 acquisition. The participants had to rely solely on each other for scaffolding. Another study conducted using the same game, "Having a Blast with a Computer-Mediated Information Gap Task: Keep Talking & Nobody Explodes in the EFL" (Dormer et al., 2017), had a somewhat different approach to the game. In this study, participants were encouraged to attempt the same task several times. Between attempts, the participant would convene and plan their next attempt by identifying useful phrases that would help them successfully solve the puzzle. Supplementary material would also be provided on request, including translations if necessary. With this approach, the planning sessions between puzzle attempts provided learners with the opportunity to learn from each other without time pressure. Regarding the results of the study (Dormer et al., 2017, pp. 31-32), the language output of the participants was not analysed, but participants instead anonymously reported their opinions of the session in hindsight. Of 209 respondents every single one either agreed or strongly agreed that the session was enjoyable. Perhaps more interestingly, all but one respondent also agreed or strongly agreed that they believed the session was useful for their general development of English.

A Spanish study conducted by Calvo-Ferrer and Belda-Medina (2021) show somewhat similar results. This study aimed to use the multiplayer social deduction video games *Among Us* to promote L2 vocabulary learning in Spanish secondary school. Calvo-Ferrer and Belda-Medina argue that video games "...foster both exposure to and the production of authentic and meaning-focused vocabulary." (2021, p. 1), which would make video games a good fit for the development of linguistic competence within CLT. They specify that vocabulary learning may happen both intentionally and incidentally, and to test the effects of both the study divided all fifty-four participants into six groups (Calvo-Ferrer & Belda-Medina, 2021, p. 7). Groups were then organized in such a way that some players would intentionally use new L2 words in the game, while other players would encounter the same L2 words incidentally when other players used them. Participants also completed both a pre- and post- vocabulary test. Calvo-Ferrer and Belda-Medina anticipated that participants would retain more of the vocabulary they were assigned rather than the L2 words they encountered organically,

and this hypothesis was supported by their findings (2021, p. 10). In fact, the post-test showed that the intentional vocabulary gains were twice the incidental ones. This supports the findings of Ranalli (2008), which suggested that supplementary materials may significantly improve the learning potential of DGBL.

Quickly summarized, the literature reviewed in this section shows that DGBL may have great potential for the development of communicative competence. Several studies show that DGBL may be used successfully for vocabulary learning, and thereby also the development of linguistic competence. Additionally, DGBL games with a multiplayer aspect where players communicate with each other promote authentic and meaningful communication, which adheres to core principles of CLT. However, Hofmeyr's study suggests that communication between learners becomes less complex the longer they play a game, because as the learners figure a game out the need for communication becomes smaller. Arguably, this is an important finding to consider for teachers who aim to use DGBL to promote communicative competence in the classroom.

2.4.2 The extramural and its intramural implications

As discussed in chapter 1, video games have increased in popularity since their creation, and have now become part of our culture. As an industry, it has grown to become a billion dollar entertainment industry which surpasses both box office and the music industry combined (Richter, 2022). A large number of the current generation of learners in Norway play video games everyday in their spare time (Ministry of Culture and Ministry of Culture and Equality, 2019), and this appears to be true for large parts of the world. This subsection will review some studies which aim to discover the effects of video games as an extramural activity on the L2 competence of learners, and then use this information to consider some implications this may have within the classroom.

A study published in 2015 by Sundqvist and Wikström aimed to analyze the correlation between video games as an extramural activity and intramural vocabulary test scores in Swedish teenagers (Sundqvist & Wikström, 2015). A total of eighty L2 learners participated in the study, and were subsequently divided into groups based on how often they played video games in their spare time. The groups were made up of those who didn't play at all (35 participants), those who played some but less than 5 hours a week (26 participants) and those who played more than 5 hours a week (19 participants). Participants were then examined through a vocabulary test and through the analysis of an essay the participants had written previously. The results (Sundqvist & Wikström, 2015, pp. 71-72) showed that the group that played the most had the highest scores on both tests. In the essay analysis, the group that never played video games had the second highest results. However, they had the lowest results in the vocabulary test. In the conclusion of the study (Sundqvist & Wikström,

2015, p. 74), Sundqvist and Wikström state that there is a positive correlation between extramural gaming and L2 proficiency, but only for boys. This correlation was not present for the girls that participated in the study. However, they also note that the sample size of participants that played more than 5 hours a week was small, and their findings are therefore far from conclusive.

Another study, also from Sweden, show similar findings. Sylvén and Sundqvist published *Gaming as extramural English L2 learning and L2 proficiency among young learners* in 2012, and in it they “...present empirical evidence that L2 English proficiency correlates with the frequency of gaming and types of games played” (Sylvén & Sundqvist, 2012, p. 302). The study collected data from eighty-six participants through a questionnaire, language diary and three proficiency tests. Participants were divided into three groups based on their extramural gaming activity in the same way as the previous study discussed (none at all, less than 5 hours, more than 5 hours per week). The results showed the same trends, where the group that played video games most often had the highest scores on the vocabulary test, followed by the group that played some. Participants were also compared on national test scores, where reading and listening comprehension was measured. Once again, the frequent gamers had the best average scores, followed by the group that played moderately often (Sylvén & Sundqvist, 2012, p. 313). When discussing their findings, Sylvén and Sundqvist remark that there was some indication that there may be a particular connection between L2 proficiency and multiplayer video games as an extramural activity. In light of findings discussed previously in this chapter, this kind of correlation would make sense, as multiplayer video games may promote authentic communication.

On the subject of authentic communication within multiplayer games, it is interesting to consider the findings of a study from 2015 (Söbke & Bröker). In this study, Söbke and Bröker aim to analyse the various types of communication that occur within the multiplayer video game *Fliplife*. While Söbke and Bröker write that their point of view is more from the field of video games than from the field of communication, their research is still valuable in the context of this thesis. The study finds that players of the game communicate a great deal, and that while a lot of communication originates from the need for collaboration within the game, a lot of communication also originates from players’ desire to socialise (Söbke & Bröker, 2015, p. 90). While these findings are not surprising, they point towards an important reason why gaming as an extramural activity may correlate with increased L2 proficiency. Hofmeyr suggested that using video games as an information-gap task may lead to authentic communication and therefore also L2 learning, but that the L2 gains diminished as players grew proficient within the game and the need for communication became smaller. However, considering the findings of Söbke and Bröker, learners who play video games in an extramural context may be exposed to additional L2 output and input because they chose to communicate for

the sake of socializing. While it is currently impossible to conclude whether this is true or not, this idea will be explored further in light of the findings towards the end of this thesis.

If it is true that some of the communicative value in gaming as an extramural activity lies within the socialization aspect of multiplayer video games, then it might be possible to take advantage of this in the classroom. However, there are several challenges to doing so. *Where Everybody Knows Your (Screen) Name: Online Games as "Third Places"*, a study from 2006, explores socialization within multiplayer video games, and specifically what it means that online multiplayer games may be considered "Third Places" (Steinkuehler & Williams, 2006). Third places are described as a neutral ground with high acceptance where people are considered largely equal. People consider third places as a home away from home, where the mood is light and no expectations are put on the people who go there (Steinkuehler & Williams, 2006, p. 890). Another study which explores the same idea, *Virtual "Third Places": A Case Study of Sociability in Massively Multiplayer Games* (Ducheneaut et al., 2007), adds that common physical examples of third places, such as cafés, coffee shops, bookstores, bars and the likes, are diminishing (p. 130). They also argue that third places are important for the health of a community, and that online multiplayer video games may be considered new third places. Ducheneaut, Moore and Nickell conclude that multiplayer video games may, especially if designed with sociability in mind, function like third places, and at the very least supplement the need for a third place within a community (2007, pp. 163-164), something that Steinkuehler and Williams' findings support (2006, pp. 903-904). However, both studies also note that the similarity to third places begin to diminish if there are too many demands on the player to make some form of progress within the video game.

This is why it may be difficult to utilize multiplayer video games for socialization within the classroom. While communication for the sake of socialization may be an ideal form of communication for the development of communicative competence, it might be very hard to make learners want to socialize in this way in the classroom. Multiplayer video games promote socialization because they function much like third places, where differences are removed and the players are considered mostly equal. It may be argued that a classroom is far from a third place. When playing online, learners are largely anonymous, which removes much of the pressure that might hinder communication within the classroom. Later in this thesis, the discussion chapter will return to this issue.

3 METHODOLOGY

3.1 CHAPTER OVERVIEW

The following chapter concerns the methodology behind the research done for this thesis. Section 3.2 discusses the RQs and how they have influenced decisions of data collection and research design. Following this, section 3.3 will explain how a classroom experiment was planned, before the construction of a questionnaire will be detailed in section 3.4. Then, section 3.5 will detail how the data gathered were subsequently analysed. Section 3.6 will consider important factors such as validity, reliability, and limitations, before finally a summary will be provided in 3.7.

3.2 HOW THE RESEARCH QUESTIONS HAVE SHAPED THE RESEARCH

The research questions are presented in section 1.4 but will be quickly repeated to aid the following discussion. These RQs were of course fundamental in shaping all the research in this study.

- Main RQ: According to data gathered from participating students in Norwegian upper secondary school, how well suited is Digital Game-Based Learning to communicative language teaching?
 - Sub RQ 1: How do participating students in Norwegian upper secondary school use English to communicate in a multiplayer video game in an intramural context?
 - Sub RQ 2: According to data gathered from participating students, do we see a relationship between students who play multiplayer video games as an extramural activity and communicative competence?
 - Sub RQ 3: According to data gathered from participating students, to what extent do students in Norwegian upper secondary school believe video games have helped them develop their communicative competence?

The main RQ is formulated in such a way that it is answered by researching the degree to which DGBL may be considered a valuable tool within CLT. The sub RQs were then formulated to provide an approach to answering the main RQ. Answering all three sub RQs will help draw conclusions towards answering the main RQ.

3.2.1 Considering the main RQ

Several elements in the main RQ require a qualitative method approach. For example, the RQ aims to research CLT and by extension therefore also communicative competence, which section 2.3

argues may be considered a complex concept. According to Dörnyei, qualitative research has a unique ability to make sense of complexity (2007, p. 39), which made it a logical choice of approach when researching communicative competence. He argues that a qualitative approach may help researchers avoid simplified interpretations and focus of the data that requires particular attention, leading to more easily identifying genuine phenomena of real interest.

When choosing a research approach, it is important to consider what kind of information is necessary to answer the RQ (Cohen et al., 2002, pp. 169-170). In the case of the main RQ, an analysis of how students communicate through video games within the classroom is needed. To provide reliable data concerning student communication within the classroom, the experiment must also be performed within the classroom, since the instructional and social context of the classroom (Dörnyei, 2007, p. 186) is key to the validity of the data collected. It was therefore decided that an approach involving classroom research would be beneficial, as it would allow first hand collection of this kind of data. Without a clear and defined ruleset (Dörnyei, 2007, p. 35), Dörnyei considers one of the key strengths of qualitative research to be its flexibility (2007, p. 40). Emergent research is a characteristic of qualitative research (Dörnyei, 2007, p. 37), and means that it may be adapted and modelled to fit possibilities and opportunities that appear during the research process. This is particularly well suited to answering complex questions with no presupposed answer. In the case of research performed within a classroom this may be particularly true. Keeping an open mind and being ready to adapt may be necessary to meet the challenges of carrying out classroom research (Dörnyei, 2007, pp. 187-190). In addition to its flexibility, Dörnyei also considers qualitative research's exploratory nature a strength (2007, p. 39), which may also be relevant within a classroom situation. On the background of everything discussed in this paragraph, sub RQ 1 was formulated with classroom research in mind. This would allow data on communication to be gathered from participating students, while field notes could be taken during the process that would then be relevant when answering the main RQ.

However, though qualitative research has some profound strengths, that does not negate the benefits of quantitative research. Qualitative research works primarily with small sample sizes, due in part to the amount of labour associated with analysing a single sample in detail. Increasing the sample size allows a more representative conclusion to be drawn from the gathered data but increases the workload on the researcher. When collecting information from a large sample size of students, it may therefore be beneficial to use a quantitative method for its inherent strengths with regard to numbers and developing statistics (Dörnyei, 2007, pp. 32-35). This offers a compromise between sample size and time consumption. Dörnyei writes that he has personally come to appreciate a mixed methods approach and argues that this approach provides additional benefits

(2007, p. 47). However, he also warns that most researchers tend to have a predisposition towards either qualitative or quantitative method, and therefore using mixed methods is not always recommended. Yet, some benefits of the method include a multi-levelled analysis, the combination of strengths from both qualitative and quantitative methods and additional validity (Dörnyei, 2007, pp. 45-46) (which will be discussed further in section 3.5).

Considering this, focusing primarily on qualitative research while supplementing with some quantitative data appeared like a good option that would allow this thesis to answer the main RQ in a reliable, satisfactory, and valid manner. According to Dörnyei, the combination of self-report and observational data is a favourable approach which does a good job of mitigating the weaknesses of both individual methods (2007, p. 173). The observational data in this thesis was gathered through the classroom experiment discussed above, while self-report data would have to be gathered from the participants either through interviews or a questionnaire. McKay argues that interviews lend themselves best to qualitative research and small sample sizes (2006, pp. 16-17). With the aim of collecting data from a larger sample size, a questionnaire is a logical choice which allows for collection of large amounts of both qualitative and quantitative data within a short amount of time (Dörnyei & Taguchi, 2009, p. 6). Sub RQ 2 and 3 were therefore formulated with the intent of answering them based on self-report data gathered using a questionnaire. The construction of this questionnaire will be described in detail in section 3.3

3.2.2 Expanding on the sub RQs

Having discussed the main RQ above, it is also beneficial to explore the sub RQs. As mentioned, the sub RQs were shaped to help answer the main RQ. Sub RQ 1 was constructed in such a way that it would be answered by performing classroom research. The RQ aims to analyse how students communicate with other students when playing a video game together within the classroom. To collect this kind of data, an experiment was carried out with a voluntary participating class in Norwegian upper secondary school. Then, a way to capture, collect and analyse discourse between students had to be devised. This would enable me to draw a conclusion as to whether students engage in authentic communication during the experiment, for example by identifying negotiations of meaning like discussed in section 2.3.3.

Sub RQ 2 and 3 were both designed to be answered by data collected using a questionnaire. Dörnyei and Taguchi explain how questionnaires can primarily gather three forms of data: factual, behavioural, and attitudinal (2009, p. 5). Sub RQ 3 is concerned primarily with the attitudes of students and wishes to discover whether students themselves believe DGBL may be used to promote communicative competence. Sub RQ 2 was formulated with the intention of eliciting a

combination of factual and behavioural data. To gather enough data of all three types, the questionnaire would need a satisfactory number of diverse questions.

3.3 RESEARCH DESIGN: PLANNING A CLASSROOM EXPERIMENT

In the previous section, two different approaches to data collection were identified as particularly suitable to answer the current RQs. This section will detail how the data was collected through the classroom experiment. In such a classroom experiment, a video game-based activity that allowed students to communicate had to be devised, and a relevant sample of students had to be chosen. First, however, the process of choosing a video game to use will be detailed.

3.3.1 Choosing a video game

When choosing a video game for the experiment, some limitations to the options available are already in place. This thesis is primarily concerned with the effect of COTS video games, and it therefore would not make sense to use a serious game for this activity. In addition, few single player games promote any substantial communication, and it would make most sense to choose a video game with multiple players playing either together or against each other. Ideally, the game chosen should use communication as a central part of its gameplay, to ensure a rich amount of data to analyse.

When evaluating options, it may be beneficial to turn to the guide written by Becker and Gopin (2016), which was mentioned in chapter 2. They introduced a framework for the selection of COTS video games called 4PEG (Becker & Gopin, 2016, pp. 51-52). For the sake of clarity, this framework is made up of four pillars, which are game overview, teacher support, educational content, and the “magic bullet” rating. For more detail, see subsection 2.2.2.

Early in the process, the COTS video game Portal 2 developed by the Valve Corporation (2011) was considered. In this game, two players are tasked with completing puzzles which steadily increase in difficulty. Timing and teamwork are both necessary to advance within the game, which promotes communication in the same way that an information-gap task does. Previous studies which have used Portal 2 (Escobar & Buteler, 2020; Shute et al., 2015) with a DGBL approach show that this game may have the desired attributes needed for a classroom activity centred around communication. Referring to 4PEG (Becker & Gopin, 2016), Portal 2 would seem to be a solid choice of game when considering three of four pillars: game overview, educational content and even “magic bullet” rating. From my own experience, the game is fun, easy to learn yet relatively challenging, and it requires communication. However, there are logistical challenges to consider, which would fall under the pillar of teacher support (Becker & Gopin, 2016). Since the game only

allows a maximum number of two players, an activity built around this game would force the class to be divided into pairs, which could be problematic in classes with an odd number of students. Additionally, this means that playing Portal 2 in a class of, for example, sixteen students would require eight licenses for the game and eight devices capable of running the game. Since the game requires little regarding PC specifications, it should be possible for students to play the game on their private PCs if they volunteered to do so. However, the game is not free and buying eight licenses would require financial investment. Considering this, despite the opportunities a game such as Portal 2 could afford, it was decided that finding another alternative would be better.

The pillar named teacher support is perhaps the most important pillar of the 4PEG framework (Becker & Gopin, 2016). The educational value of a game may be raised by including supplementary materials in the experiment, but logistical challenges may be harder to mitigate. In light of this, the COTS video game *Among Us* became a prime candidate for use in this thesis. This is the same game used by Calvo-Ferrer & Belda-Medina in their study of L2 vocabulary gains (2021). *Among Us* is a social deduction video game developed by Innersloth, which centres around players using communication and deduction to win the game. *Among Us* is available on most devices and is free through Apple App Store or Google Play on iPhone and Android phones respectively. The game is small and may therefore be downloaded quickly, and it is rather easy to learn how to play the game. All this means that *Among Us* is a decent choice as far as teacher support is concerned, as it may easily be downloaded by every participating student on their personal mobile devices, without any financial investment and without having to acquire additional hardware. When considering the three remaining pillars, the game still holds up well. The game has grown very popular and seems to appeal to a large amount of people, which would indicate that the game is fun. The educational content is communication, and while the game does not force players to communicate it is very beneficial for players to communicate if they wish to win the game. Considering this, it was decided to use *Among Us* (Innersloth, 2018) in the experiment (for detailed explanation of the game, see section 1.6).

3.3.2 Shaping an activity around *Among Us*

The technical aspect of this activity seems rather simple to plan. Participating students may download the game quite quickly on their mobile devices, and as such it should be sufficient to dedicate a small amount of time in the classroom to get everyone onto the game. Due to the game's popularity, many students might have experience with the game from before. For those who do not, however, the game is easy to learn, and providing a short set of instructions before the activity may help bring the class up to speed. The game sessions itself could easily be controlled if I, the researcher, participate in the game as the host of the game lobby. Participating students may then

join the game when provided with a six-digit code which the game automatically generates. The game may then be played as normal. Since the game itself encourages communication in the discussion phase of the game, no further means of promoting communication were planned. The limitations of this approach will be discussed further in section 3.5.

When considering a sample size, there are two specific decisions to consider. How many students should participate per session, and how many sessions should be carried out. Since the game allows a total of fifteen players per game, it would be challenging to accommodate a large class with many students, but it would still be possible if two separate game lobbies were running at the same time. It is also important that each game lobby has enough players, since the game is more fun the more players there are. Therefore, it would be ideal to have as close to fifteen or thirty participants per sessions as possible. Also, to ensure the validity of the data collected, it would be beneficial to run the activity in several classes if possible. A school was contacted, where two English teachers volunteered a total of four classes to participate in the experiment. All four classes were first year classes of Norwegian upper secondary school, and all classes had less than fifteen students, which means a single game lobby would suffice for each class.

3.3.3 Data collection

Having organized a classroom activity conducive to authentic communication among students, I needed to find a reliable method of data collection. One important consideration that remained is then whether students should communicate through oral or written discourse. Each has their own benefits and limitations. First, the game has an in-game chat function which makes written communication quite simple. This would also be easy to record and analyse in hindsight, since it would be possible to take screenshots of the chat as the students communicate. However, communicating in writing is more time consuming, which is far from ideal within the time sensitive constraints of the game. Oral discourse would allow for quicker input and response from the participants. But an argument against oral discourse is that students who dislike talking aloud in the classroom may remain silent when they instead would participate in a written discussion. Though transcription of oral discourse would make it easy to analyse, recording oral discourse with fifteen participants may be challenging. In this regard, recording written discourse is easier and less time consuming. On the matter of privacy and anonymity, written discourse may also be preferable as this makes it easier to remove dialogue written by a particular participant should they decide to pull their consent in hindsight. In light of all this, it was decided the activity should be carried out using written discourse. This way, data could be collected by means of screen capture.

3.4 RESEARCH DESIGN: CONSTRUCTING A QUESTIONNAIRE

As mentioned in 3.2, a questionnaire was chosen as the method of data collection for two sub RQs. First, the sampling of respondents will be discussed before the design of the questionnaire and its survey items will be explained. Finally, how the questionnaire will collect and organize data is detailed.

3.4.1 Sampling

The target group of respondents for this questionnaire was upper secondary school students, same as with the gaming session. Since it would be necessary to find volunteer classes for the classroom experiment anyway, it was deemed logical to include the questionnaire as part of the same sessions. This way, any classes that chose to participate in the game sessions would also be respondents in the questionnaire. As mentioned, two teachers volunteered four classes with a differing number of students, which led to a total of 36 respondents. By conducting the survey as part of the same sessions as the gaming session, this would also allow the researcher to be present during the data collection.

The questionnaire was created using SurveyXact (more on this in subsection 3.4.2), which means it could be distributed digitally using a link, for example through email. There are, however, some benefits to being present with the respondents while the questionnaire is completed. Since the questionnaire aims to gather self-reported data from students in upper secondary school, it was also deemed necessary to introduce the concept of communicative competence to the students before the questionnaire was completed. The concept could be introduced in written form as part of the questionnaire, but by being present with the respondents this could be done through a short presentation instead. This would allow respondents to ask questions if anything was still unclear and would hopefully lead to a better understanding of the concept among respondents. Being present during the survey would also allow clarification of survey items to be provided, should it be necessary.

There are of course also some limitations to consider when being present during this process. Whether respondents feel anonymous affect their answers to some degree. The questionnaire would of course be anonymous, and the respondents were assured of this several times before answering, but the researcher being present with the respondents might still impact the answers to some degree. Respondents might subconsciously feel less anonymous which may impact honesty, or participants may subconsciously have a desire to meet expectations (Dörnyei, 2007, p. 54), which in this context would mean to answer what participants believe the researcher would wish them to answer. This phenomenon is not unique to situations where the researcher is present, however. It

was also decided that the questionnaire should be in Norwegian, to minimize the likelihood of respondents misinterpreting survey items.

3.4.2 Survey items and questionnaire design

The online survey creation service SurveyXact was used to create the questionnaire used in this thesis. There are several benefits to using an online service and collecting data through the internet, including convenience, anonymity, reduced costs and more (Dörnyei, 2007, p. 121). SurveyXact is approved by the University of Bergen and provide an easy-to-use tool for creating and distributing a digital questionnaire with anonymous respondents. The service also stores the collected data and provides options for creating automatic statistics from all variables in the questionnaire. Their questionnaire tool allows for a large range of survey items, and therefore simplified the process of designing a questionnaire. Since the questionnaire aims to gather factual, attitudinal, and behavioural data using both qualitative and quantitative method, three different types of survey questions were chosen for this purpose: Multiple-choice questions, rating statements on a Likert scale of agreement and open-ended questions with free text answers.

Multiple-choice and Likert scale statements are useful for gathering multiple types of data and arranging them into statistics, while free text questions are particularly well suited to gathering detailed data which may be analysed qualitatively. The final questionnaire was made up of twenty-three survey items, consisting of nine Likert scale statements, eight multiple-choice questions and six free text questions. While the full questionnaire is included in the appendix, figures 1, 2, and 3 provide examples of each type of survey item. This shows how the survey items in the questionnaire appears to the respondents. As mentioned, the questionnaire is in Norwegian and therefore English translations will be provided instead.

Figure 1

Example of Statement Rated Using Likert Scale

Statement: I believe video games should be used in English education

Strongly disagree	Slightly disagree	Neither agree nor disagree	Slightly agree	Strongly agree
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The example above in figure 1 shows a survey item that uses a statement to collect attitudinal data from respondents.

Figure 2

Example of Multiple-choice Question

Multiple-choice: Of the options below, where do you feel you have learned the most english? (You may pick more than one alternatives)

<input type="checkbox"/> English education	<input type="checkbox"/> My parents	<input type="checkbox"/> My friends	<input type="checkbox"/> Film, TV and series
<input type="checkbox"/> Books and reading	<input type="checkbox"/> Video games	<input type="checkbox"/> The internet (excluding film, tv, series and video games)	<input type="checkbox"/> I do not know

This multiple-choice question attempts to collect self-report data regarding which source the respondents consider the most influential for their EFL education. It would be ideal to gather factual data concerning this, but in a self-report situation attitudinal data is easier to collect.

Figure 3

Example of a free text answer survey item

Free text answer: Do you believe video games may be used to teach communication in English? Why/why not?

In the final example above, the hope is that longer answers will provide useful data which may be analysed qualitatively.

3.4.3 How the questionnaire collects and organizes data

As mentioned, SurveyXact collects and stores data digitally. Respondents' answers are saved continuously, meaning that even if respondents do not finish the questionnaire in its entirety their answers prior to leaving the survey are still made available through SurveyXact's online service. All respondents are classified through a random code, and it is therefore impossible for the researcher

to connect answers to a specific respondent. However, as Dörnyei pinpoints, machine numbers and data transmission through the internet are traceable which makes information in practice identifiable (2007, p. 121). Despite this, SurveyXact provides a high level of anonymity which should promote honesty among respondents. After SurveyXact has collected the data statistics are easily available and several types of graphs may be automatically generated on request.

The survey items have been formulated to collect a wide range of information. Some questions aim to collect data on the respondents' self-reported experience with video games. For example, respondents are asked how often they play video games currently, how often they played while growing up, and how often they play online with other players. Then, with the aim of comparing participants' use of video games to other media, respondents are also asked about their experience with other media (e.g., English movies and TV series). Attitudinal data is collected through several questions regarding their opinions. For example, participants are asked outright if they believe video games, and other media, should be used in English education. As discussed, measuring communicative competence can be challenging, and it is therefore interesting to know how participants rate their own communicative competence. Participants are therefore asked if they believe they are proficient at communicating in English, and whether they believe video games and other media have helped them develop this competence. Since the intramural context is important to the RQ, some questions are aimed towards gaming in the classroom. Students are asked whether they think it is difficult to speak English aloud in a classroom, and if they think it is easier to communicate in English with a person that does not speak Norwegian.

A brief run through of the questionnaire will now be provided. Initially, practical information such as instructions on how to complete the questionnaire and information regarding privacy is provided. Following the practical information, the questionnaire asks respondents if they have understood the concept of communicative competence, and provides a brief additional explanation should they answer no. The questionnaire uses activation, which means that some survey items are only activated if prior requirements are met. For example, if respondents answer that they do not play video games in their spare time, they will not be asked how often they play video games with other people online. After all relevant survey items have been answered, the respondents are given the opportunity to provide optional feedback and the questionnaire is then finished. It takes approximately fifteen minutes to complete.

3.5 ANALYSING THE DATA

The following section will detail how the data collected in this thesis will be analysed.

3.5.1 Analysing the written discourse in Among Us using codes

Mckay explores several approaches to researching classroom discourse, including both oral and written discourse (2006). Lazaraton provides a research review describing sixteen different studies that utilize some form of discourse analysis (2002). Both these sources clearly show that interaction analysis is typically more concerned with spoken rather than written communication. In their section on written discourse, Mckay only discusses written monologic discourse, such as essays (2006, pp. 109-138). When Mckay introduces both general and limited coding schemes as an approach to interaction analysis, all examples given are of spoken discourse (2006, pp. 89-100). However, the approach itself may quite easily be transferred to written discourse. The provided examples analyse transcribed oral conversation, which is different in several ways to the written conversations present in an in-game chat, but still similar enough to be applied in this thesis.

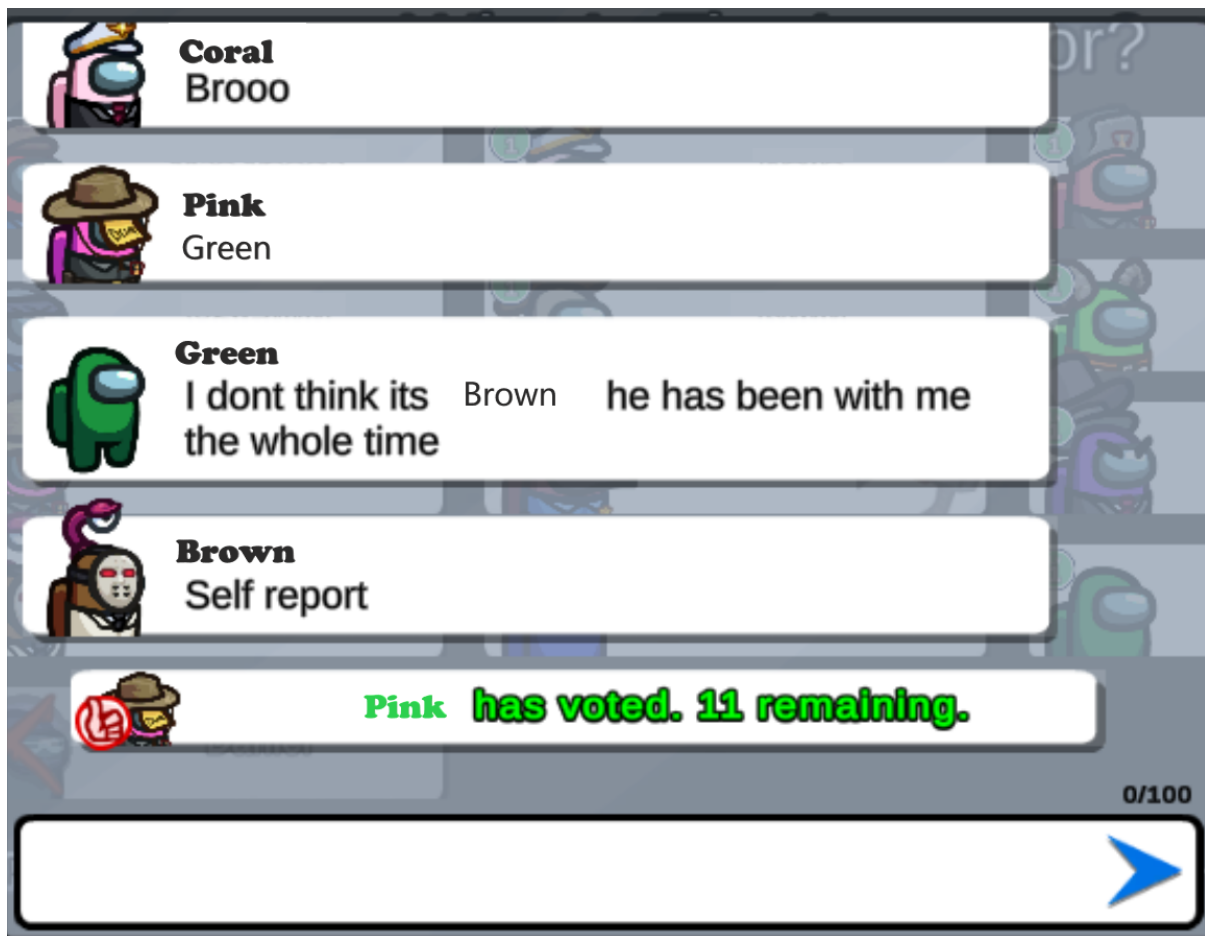
A limited coding scheme as introduced by Mckay (2006) allows for the gathering of specific and relevant data in a convenient and practical manner. When using a limited coding scheme, discourse must first be analysed and interpreted qualitatively, after which utterances of significance are coded according to a scheme that is specifically developed for the occasion. In this thesis the coding scheme was developed after the data had been collected, as this allows the scheme to be tailored specifically to suit the data. An example of a category in this context is “argumentation” (the full coding scheme is included in 3.5.2). Afterwards I could for example analyse the frequency with which each code appears, or what code typically triggers which other code as a response. It may also be possible to see whether the frequency of specific codes changes throughout a game session. This enabled me to draw a conclusion to answer the main RQ.

3.5.2 Creating a coding scheme

As mentioned, a unique limited coding scheme was created specifically for the analysis of the data collected in the classroom experiment. By creating the coding scheme after the data collection, it could be tailored as necessary to ensure relevance. In the context of this thesis, it makes sense to connect specific codes to sub-competences of communicative competence (for an overview of sub-competences see section 2.3). To provide insight into the coding process, an example of how a code is created will now be provided:

Figure 4

Example of Screenshot Used in the Coding Process



The image above is an example of a screenshot that has been collected during the classroom experiment, and which has subsequently been edited to ensure the anonymity of all participants. In the screenshot, four players are communicating during the discussion phase of the game. This specific example concerns the category labelled “Argumentation”. In the discussion above, Green presents an opinion (that Brown is not an impostor) and provides an argument to justify that opinion. Whether this argument is solid and or truthful is not interesting in the analysis, what is interesting is the fact that Green has used their discourse competence. As discussed in 2.3.1, discourse competence involves the ability to formulate an argument, which Green has done. Therefore, during the process of coding this image the category “Argumentation” was added into the scheme, and one count of the code was registered into the final analysis.

This process means that the coding scheme is not finished until the final image has been analysed. It was therefore deemed logical to do a second analysis after the coding scheme had been finalized, to ensure that all counts of all categories had been registered. The full and final coding scheme used in this thesis is shown below in figure 5.

Figure 5

Full Limited Coding Scheme

Category	Related sub-competence	Code description
Argumentation	Discourse competence, thematic development	The player is arguing either for or against something, which would suggest that they are practicing their discourse competence
Accusation	Functional competence	The player is accusing someone of being an impostor, indicating that other players should vote to eliminate this player
Initiation	Functional competence	In some form, the player initiates a discussion
Response	Functional competence, turntaking	The player responds to a statement or argument.
Clarification Request	Linguistic competences, turntaking, fluency	A breakdown in communication has occurred, and the players has requested clarification to repair the breakdown
Reformulation	Linguistic competences, discourse competence, flexibility	The player reformulates something or corrects spelling to repair or prevent a breakdown in communication
Information inquiry	Discourse competence, functional competence	The player asks for additional knowledge or explanation from other players
Socialising	Discourse competence	The player engages in socialising when they write something that has no function within the context of the game
Expletives	Functional competence, turntaking	The player may use expletives when they feel it is natural to take part in the discussion, but do not know what to say
Plurilingualism	Plurilingual competence	The player switches between several languages to get their message across
Ridicule	Functional competence	A player attempts to disarm an argument, accusation, or another player by means of ridicule
Game assistance request	Functional competence, discourse competence	A player requests help with game mechanics
Confirmation	Functional competence, turntaking	A player confirms that they have understood something, or that they agree with something another player has said

As the table in figure 5 shows, the analysis resulted in a coding scheme consisting of 13 different categories. Some codes are mutually exclusive, such as initiation and response, but a single utterance may be coded into several categories. For example, it is not uncommon that an accusation initiates a discussion, thereby combining the codes initiation and accusation. All codes are linked to one or several sub-competences, and the descriptions in the table above attempt to expand on the

logic behind these links. Sociolinguistic competences are not represented by any specific code, but this will be discussed further in chapter 4.

3.5.3 Analysing data gathered from the questionnaire

As discussed above in section 3.4, SurveyXact provide a very practical tool which organizes data points into statistics automatically on demand. This allows all quantitative data collected to be organized into visual information which may be easily comprehended and analysed. Charts will be interpreted and compared in such a way that key findings and results are highlighted. A key part of analysing data from graphs is recognising patterns and viewing the data critically, since a chart might not tell the full story. Data from various survey items will also be cross-referenced, to provide additional insight. For example, while data from separate survey items on gaming as a spare time activity and communicative ability are interesting on their own, cross-referencing these results to see if respondents that play video games report a higher communicative ability allows for additional depth in the analysis.

Survey items where respondents write free text answers will be analysed qualitatively, attempting to provide a clear overview of the main tendencies, while isolating key answers which might be of interest. For example, if most respondents write similar answers this will be noted, while longer answers with interesting viewpoints will be highlighted, whether they support the common tendency among other respondents or not. The free texts survey items in the survey often ask respondents to expand on their answers in a previous survey item, and it therefore makes sense to use these free texts answers to provide additional insight into the previous survey item which respondents are expanding on.

3.6 VALIDITY, LIMITATIONS AND ETHICAL CONSIDERATIONS

This section will first discuss how the validity of the research in this thesis was ensured, before reliability will be briefly discussed. Then, some limitations and how this thesis attempts to mitigate them are considered before finally ethical considerations are discussed.

3.6.1 Validity and reliability

Validity is the degree to which research is considered sound (Mckay, 2006, pp. 11-15; Riazi, 2016, p. 341). It is one of the most common key terms used in research (Riazi, 2016, p. 341), and in essence it means that the researcher should strive to convince their audience that their findings and the conclusions drawn are legitimate (Dörnyei, 2007, p. 48). Validity may be used to describe how sound the research is in its entirety (Dörnyei, 2007, p. 52), or it may relate to specific methods of

measurement and data collection (Dörnyei, 2007, p. 51), and the term has different meanings within qualitative and quantitative research (Mckay, 2006, pp. 11-15).

In this thesis, several decisions have been made to ensure validity. First and foremost, the methods used are presented to ensure visibility and insight into how all data is collected. Then, all findings in chapter 4 are presented as plainly and as objectively as possible. This allows the reader to evaluate all findings objectively. Findings are also discussed with all limitations of the approach in mind, to ensure that the conclusion made in light of the findings does not make generalizations that are unsupported. Also, the mixed methods approach used has the benefit of combining validity from both qualitative and quantitative methods. This allows quantitative data to support any qualitative findings, and the other way around.

As established in section 2.3, communicative competence is a complex concept which encompasses several sub-competences. While it is quite possible to measure some of the skills that make up communicative competence separately (e.g., lexical competence), there are several reasons why it may be difficult to measure communicative competence at large. Within the topic of research validity, the difficulty of assessing communicative competence may be considered a matter of construct validity. McKay (2006) lists construct as one of three different types of validity, alongside external and internal validity, and explains that construct validity is the apparent degree to which the measures used in a study actually assess the construct (in this case communicative competence) they are being used to assess. McKay adds that the measures selected must appear reasonable to an outsider (2006, p. 12). What this means to this thesis is that to provide valid research, communicative competence must be assessed in a way that appears reasonable, applicable, and reliable to both insiders and outsiders alike. This may be achieved by locating specific instances of communicative importance within discourse, using the approach discussed in 2.3.4. This means that individual sub-competences are measured separately instead of attempting to measure communicative competence as a whole.

According to Dörnyei, the term reliability means the consistency with which results are produced from the various procedures within research and under varying circumstances (2007, pp. 50-51). In essence, this means that research is reliable if the methods used are transferable and would produce similar results if applied by a different researcher. Data is unreliable if there are variables which may cause inconsistencies in the results (Dörnyei, 2007, p. 50).

In this study reliability is ensured first and foremost by providing as much insight into the methodology as possible. Hopefully, this will make it possible to replicate the process, and in extent therefore also the results, of this study should other researchers wish to do so. By providing quite

detailed information regarding the sampling of respondents for this study, it should also be possible to conduct a hypothetical second study using a representative sample. All decisions that aim to mitigate the presence of the researcher and which promote honesty among respondents are also important to ensure the collected data is reliable. Finally, the researcher chose to partake as little as possible in the classroom experiment, which hopefully would allow respondents to communicate as freely as possible and without artificial results promoted by the researcher's involvement. This should diminish the effect the researcher has on the results of this present study, and if replicated would also diminish the effects of a second researcher in a hypothetical second study.

3.6.2 Limitations

In the classroom experiment where screen capture is used for data collection, this process is dependent on the researcher partaking in the experiment to have access to the in-game chat where the participants are communicating. This may be considered a limitation to the collected data. By playing the game along with the participants, this may lead to artificial behaviour among participants. They may not communicate quite as freely and genuinely as they would have had the researcher not been present. In addition, the researcher may affect how the game is played through their in-game choices. In this study, this limitation was attempted mitigated by actively trying to take as little part in the game as possible. The researcher attempted to not partake in discussion unless prompted to do so by other participants, which could potentially have led to artificial results. The aim was for the discussions in game to be led and initiated by the participating students and allowing them to communicate as freely as possible without providing any real guidelines. Since the game uses usernames, the researcher was also anonymous to the participants in the game, in the same way that all participants were anonymous to each other. Participants did know that the researcher was participating in the game session however, though not by what username. However, it is worth mentioning that since the aim of this thesis is to research the use of DGBL within the classroom, the presence of the researcher during the experiment may be considered representative of the presence a teacher would have during a similar classroom context.

As already discussed to some degree in 3.3.4, there are both benefits and limitations to using written discourse in the classroom experiment. Because of this, it would be ideal to conduct parallel experiments using both oral and written discourse. This would provide very interesting data and would mitigate some of the limitations to using only one form of discourse. It would however be quite time consuming and was therefore not practical within the scope of this project. Only written discourse was used during the experiments, which is a limitation because the conclusion drawn towards the RQs would be more valid if both written and oral discourse had been analysed. The

need for a study which analyses and compares both forms of discourse in a similar experiment will be discussed in section 6.3 on further research.

3.6.3 Ethical considerations

One important ethical consideration in this thesis is privacy and anonymity. When performing a classroom experiment in a participating class, it is impossible not to gather some degree of personal information. However, all participants have been promised that no information that may be used to trace them will be shared. True anonymity may never be guaranteed, but various measures have been taken to ensure as high degree of privacy as possible. All participants were given a consent form containing information regarding the project, including the experiment and the data that would be collected. After having read and understood the information, all participants provided signed consent that they wanted to participate in one or both types of data collection in the project. As part of the consent form, participants agreed that the researcher could gather personal information and store this information until the project was finished, or until a participant decided to pull their consent. Upon the completion of the project, all collected data that had not been treated and anonymized would be deleted. The project was evaluated and approved by NSD (Norwegian Centre of Research Data).

Regarding the specific methods of data collection: Screenshots taken during the classroom experiment have been treated and usernames have been anonymized. Some participants may have chosen usernames which could somehow be traced back to them, and it was therefore deemed necessary to replace all usernames with the colour associated with their in-game character. All instances where a participant wrote something in the chat that may be considered sensitive or personal has also been treated. Regarding the survey, anonymity is especially important. SurveyXact ensures this by automatically connecting respondents to a random number, which means that it is almost impossible to trace any answers back to specific respondents. Furthermore, once this study is finished all data stored by SurveyXact will be deleted, and only the charts used in this study will remain.

4 RESULTS AND DISCUSSION

4.1 CHAPTER OVERVIEW

With the aim of answering the research questions introduced in chapter one in a clear and concise manner, the present chapter will present and discuss results from the collected data. Sections 4.2, 4.3, and 4.4 will address each of the three sub research questions in turn. Each section has been structured in the same way. First the results from the relevant data sets are presented using methodology discussed in the previous chapter, before a separate discussion of the relevant sub research question follows.

Section 4.2 presents results from the classroom experiment (see section 3.3 for methodology) and discusses how students in Norwegian upper secondary school participating in the present project use English to communicate while playing a multiplayer video game in an intramural context.

Section 4.3 presents data on self-reported experiences gathered from the questionnaire (section 3.4) with the aims of answering whether we see a relationship between students who play video games as an extramural activity and communicative competence.

Section 4.4 presents attitudinal data gathered from the questionnaire (section 3.4) regarding participating students' opinions towards whether they believe video games have helped them develop their communicative competence.

Following this, section 4.5 will discuss the main research question, how well suited is Digital Game-Based Learning to Communicate Language Teaching according to the gathered data presented in the previous sections? Finally, the chapter will be briefly summarized in section 4.6.

4.2 SUB RQ 1: HOW DO PARTICIPATING STUDENTS IN NORWEGIAN UPPER SECONDARY SCHOOL USE ENGLISH TO COMMUNICATE IN A MULTIPLAYER VIDEO GAME IN AN INTRAMURAL CONTEXT?

4.2.1 Results of the classroom experiment

In this section the results of the classroom experiment will be presented. In the experiment, four classes in Norwegian upper secondary school played the COTS video game *Among Us* while data was collected using screenshots (for more detail on methodology see section 3.3). The present section

has been divided into two parts, where 4.2.1.1 presents and analyses specific examples of screenshots and 4.2.1.2 studies the frequency and the sum of the collected data.

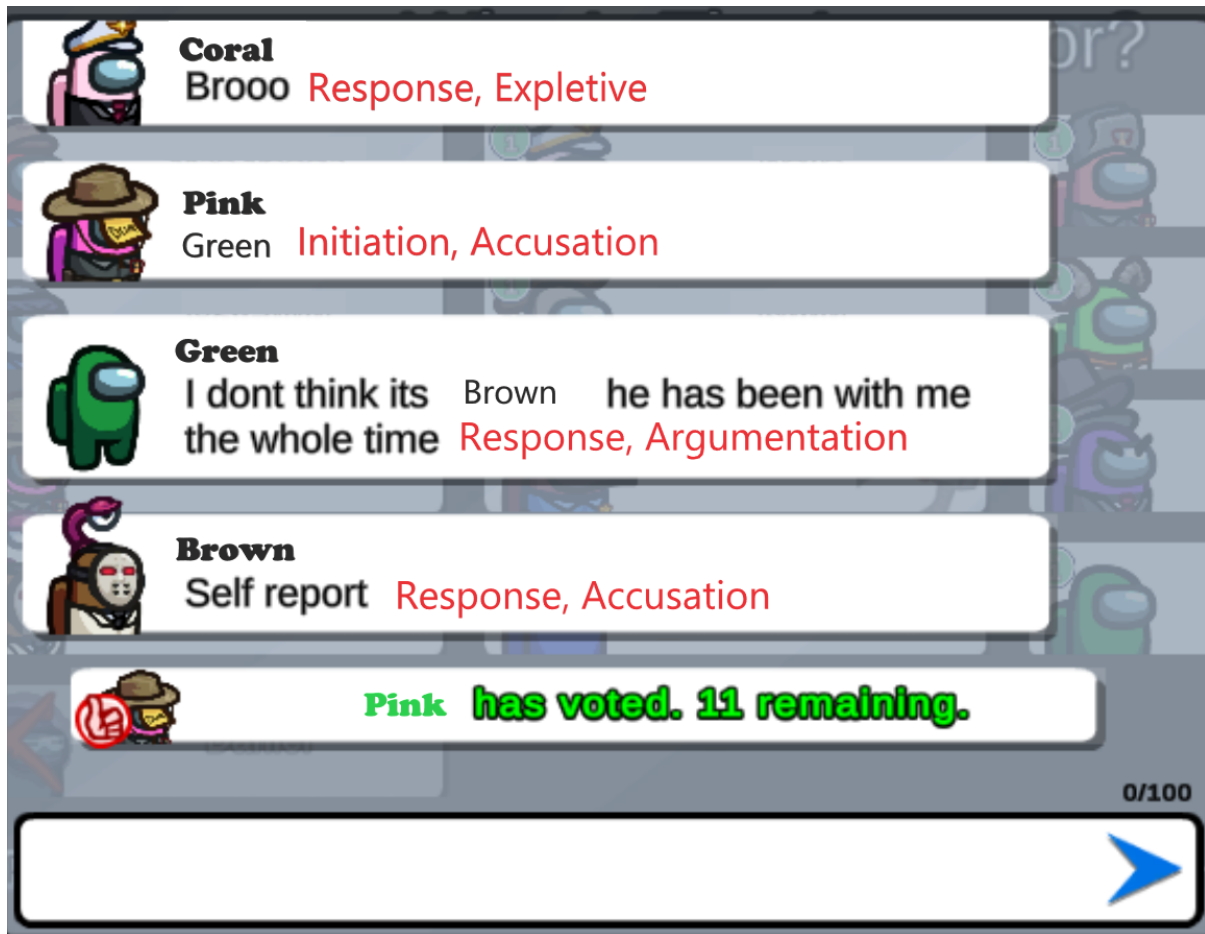
4.2.1.1 Screenshots

A total of thirty-three screenshots have been analysed and coded according to the thirteen different categories outlined in the coding scheme (figure 5) presented in section 3.5.2. While more than thirty-three screenshots were captured during the experiment, several screenshots had overlapping content and some screenshots were therefore left out of the analysis as they offered no new data to the analysis. All thirty-three screenshots are available in appendix A, but a selection of those screenshots which were judged to provide the most interesting findings are presented in this section. Due to the time sensitive aspect of the game, the researcher was not able to capture all relevant discussion, and in hindsight it might have been wise to record the game session as a video. This would have presented its own challenges but would have ensured that nothing of interest had gone undocumented.

In the screenshot shown below in figure 6, four players are interacting. This interaction is taking place in the discussion and voting phase of the game, and this chat window is only available during these phases of the game. In the bottom of the image, a prompt shows that Pink has submitted their vote, which means that the voting phase must have begun. Players may still communicate during the voting phase, but as more and more players submit their vote, the amount of discussion is generally reduced. Since the game has entered the discussion and voting phases, at least one period of the game phase must have already been played (For more information on how Among Us is played, see section 1.6).

Figure 6

Analysed Screenshot #01

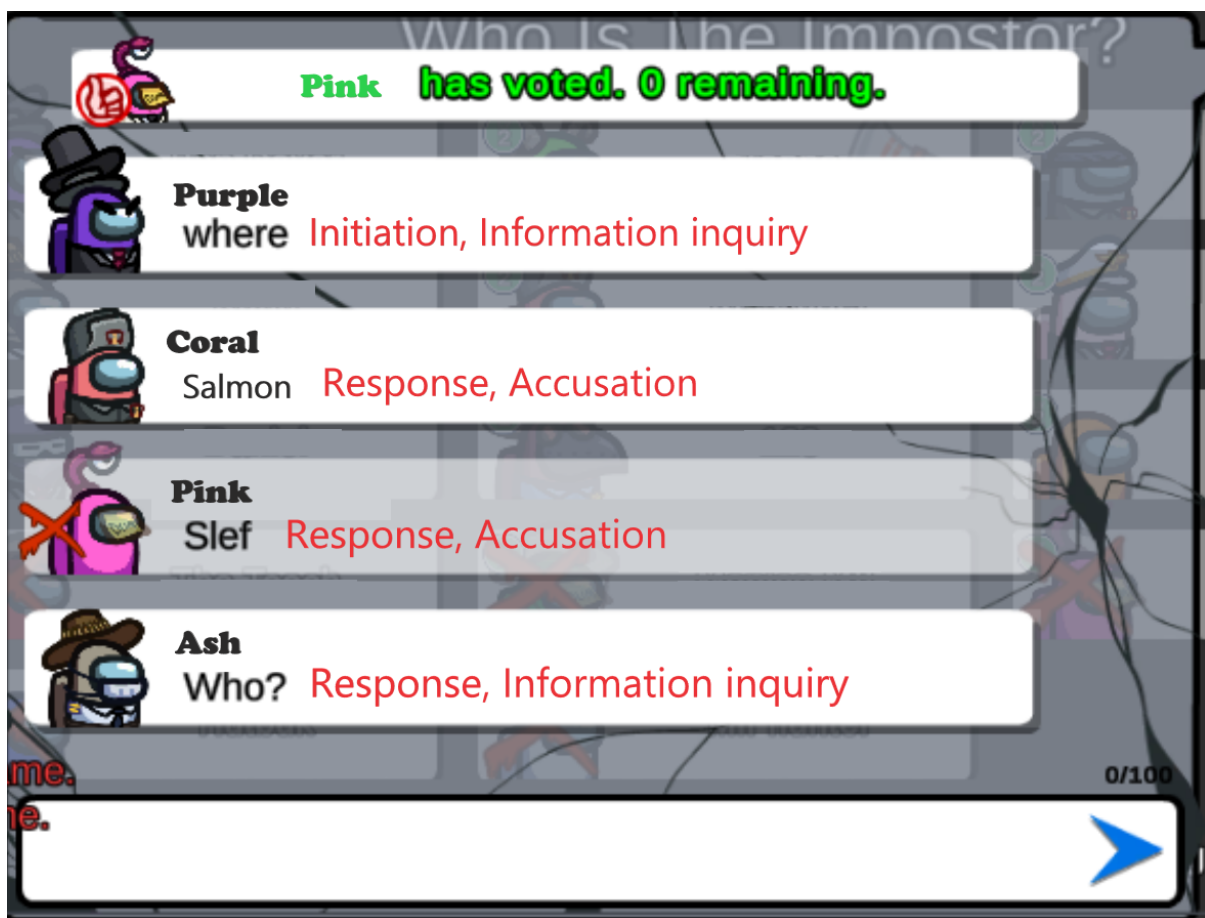


The first interaction in the image is Coral exclaiming, in response to something that has been said previously. This is a response, which is related to turntaking as presented in 2.3.1. In addition to being coded as a response, the category labelled “Expletive” is relevant. Coral responds without contributing anything specific to the previous discussion, most likely because Coral has been addressed directly and therefore feels that it is natural to respond. Unrelated to Coral, Pink simply writes “Green” in the chat. As further examples below will show, this is not uncommon in Among Us and here it has been coded as an accusation. When a player writes the name of another player without providing any context or argumentation, it is almost always interpreted by the other players as accusing the player mentioned of being the impostor. When a player accuses another player in the discussion phase of the game, they indicate to the other players that this player should be voted out of the game in the voting phase. It is in the crewmembers’ interest to guess/vote correctly, but in the interest of the impostors to make an innocent crewmember the target of the vote. When Green is accused in this discussion, they do not respond by defending themselves. Instead, they argue the innocence of Brown, by providing an alibi of Brown’s whereabouts. This might serve

several functions within the discussion for Green. If what Green writes is true, then Green can't have killed another player without Brown noticing. Therefore, it would be logical for the other players to assume that if Brown backs up Green's story, then either both of them are impostors or both are innocent, something Green most likely is aware of. This way, by providing alibi for Brown, Green has to some degree shifted suspicion away from himself. In response to what Green has written, Brown writes "self report". When an impostor kills another player and then reports the body themselves, this is called self-reporting. This means that to some extent Brown is confirming Green's story. The player that reported the body is Grey, which means Brown is shifting the blame onto Grey. Green has used their discourse competence to remove themselves as main suspect in the current discussion phase. Since only one player may be voted out of the game per voting phase, this occasionally seems to create a dynamic where players will attempt to make a different player the target of the vote, rather than trying to prove their own innocence.

Figure 7

Analysed Screenshot #02



In the next example (figure 7), once again four players are interacting. The context here is that a dead body has just been reported by Coral. Purple initiates the following discussion phase by asking where the body was found. This is a common start to a discussion phase, and as the frequency table (figure 10) in subsection 4.2.1.2 shows, information inquiries are in general quite common. Logically this makes sense since it will be in the interest of the crewmembers to gather as much information as possible, with the aim of making correct decisions and accusation in the discussion and voting phase. Information inquiries are an example of the players using their pragmatic competences, more specifically both functional and discourse competence. The link to functional competence may be argued because they are using language for the specific purposes within the game. In the example above, Purple simply writes “where”, but in extension what Purple is asking here is “where was the body found”. But because of the context, since a body has just been reported, Purple assumes that the other players will understand the question even though some important elements of the question have been omitted. The second competence linked to information inquiry is discourse competence, and this link is made because a question must be formulated in such a way that the player receives the answers they are seeking, meaning it requires some conscious or unconscious decision regarding form and function to be made.

Moving on from Purple’s message, this initiation triggers three different responses. It was Coral that reported the body, which means Purple’s question would naturally be directed towards Coral, but Coral does not provide an answer. Instead, they accuse Salmon of being the impostor. Coral’s accusation is in the same fashion as Pink accusing Green in the previous example, just a short accusation with no real argumentation. But there is one important difference, Coral has the benefit of being the player that reported the body. Since Coral found the body, they might also have seen who the killer was, and as such the other players might be inclined to trust Coral. However, as also seen in the previous example, the player that reports a body may also be accused of self-reporting. Pink, who has been eliminated from the game and is therefore greyed out in the chat, is attempting to accuse Coral of this, meaning that Pink believes Coral is the killer. However, it is worth to note that since Pink has been eliminated from the game, they cannot vote, and their messages are not visible to the players that are still in the game. The final response provoked by Purple is another question, posed by Ash. Ash writes “who?”, which is not as easy to interpret from context as Purple’s question. Ash might refer to identity of the suspected killer or may wish to know whose body was found. Either way, Ash does not receive an answer. This may perhaps be because the other players found the question to be vague, and therefore chose not to answer. From a CLT standpoint one might hope that Ash would then choose to reformulate their question in an attempt to fix this

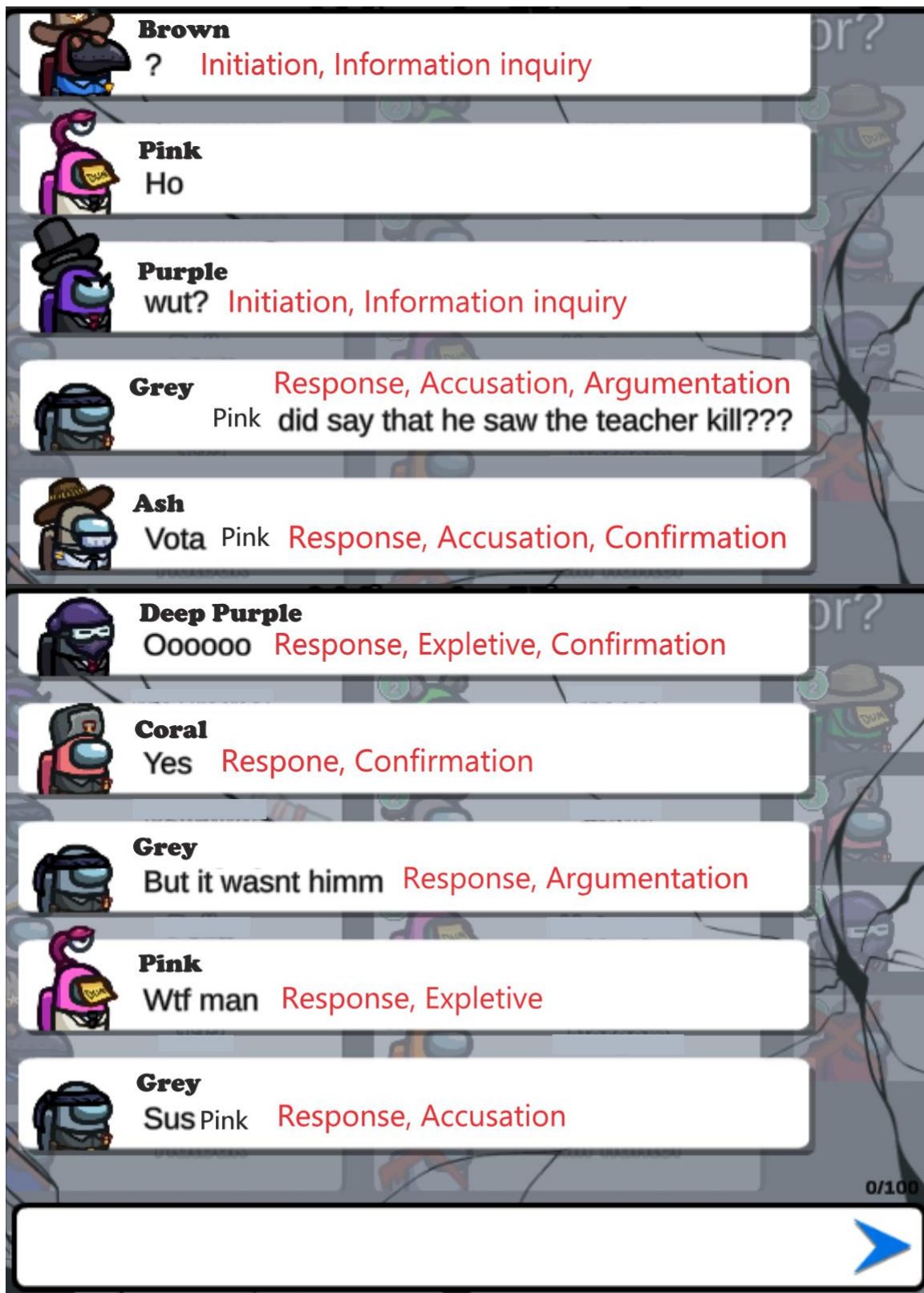
breakdown in communication, as this would be an excellent practice of discourse competence. Ash does not do this however, which might be due to several factors, such as time constraint.

The next example is a discussion that stretches across two separate screenshots, which will be presented together. In the image we see a total of seven players partaking in a discussion. This discussion happens following Grey having called an emergency meeting. This means that a dead body has not been found yet, but a player has decided it is beneficial to initiate a discussion and voting phase, most likely because they think they have sufficient evidence against a player they believe to be the impostor. However, this is a game where the impostor has much to earn by sowing distrust among the other crewmembers. Crewmembers are always looking for suspicious behaviour in all phases of the game, and all messages sent in the chat are scrutinised. For example, making empty accusations may result in being voted out of the game, as only an impostor stands to benefit from accusing an innocent player. This dynamic means that an impostor often can get away with quite little involvement in discussion. If they see a crewmember accuse a different crewmember, they might choose to pour fuel on the fire, or simply to remain silent. In the example below (figure 8) we see a typical discussion phase where one player brings to attention that another player has done something suspicious.

In the screenshot we can see that the discussion phase is initiated two times, as both Brown and Purple write separate information inquiries into the chat almost simultaneously. No body has been found, and it is therefore safe to assume that these questions regard why the meeting was called, and Brown's singular question mark is not an uncommon message in this type of scenario. Grey, who called the meeting, then responds with an explanation. Grey reminds the other players that Pink had previously said they saw a different player kill someone (in this case the player in question is me, students usually quickly uncovered which user was mine). Due to Pink's accusation and argumentation, that player was voted out of the game by the crew. However, said player turned out to be innocent. Therefore, what Grey in effect is doing here is accusing Pink of lying, and perhaps also being the impostor. If Pink did lie on purpose, only an impostor would have a reason to do so. However, Pink may have believed the player they accused was the impostor. Grey formulates their message as a question, most likely as a call to other players to back up their argument, which both Ash and Coral do. It could also be considered a suggestion towards other players along the lines of "Pink lied, and what should we do about it?". Deep Purple does not specifically state agreement but writes an expletive which indicates they consider this to be interesting information.

Figure 8

Analysed Screenshot #03



In response to a general agreement from other players, Grey expands on their argumentation, adding that which was only implied in the previous message. Grey probably does this in case some

players did not pick up on this in the first message and shows a use of both functional and discourse competence. Pink responds to the accusation with an expletive, indicating disbelief towards the accusation but providing no counter argument. In response, Grey addresses Pink directly and calls their behaviour suspicious. Pink does not defend themselves, but instead writes a series of expletives containing crude language into the chat. This is most likely an emotional response from Pink, who has understood they are about to be voted out of the game.

Figure 9

Analysed Screenshot #04



Finally, it is interesting to note how the participants socialised during the game sessions. As the frequency table in 4.2.2 shows, a total of twenty instances have been coded as socialising. This is promising, because despite the presence of the researcher, and despite communicating in a second language in a classroom context, the participants still socialised. In this analysis, all instances where players write messages that have no apparent function within the context of the game have been coded as instances of socialising. This may include instances where the players use humour, such as in the example shown in figure 9. Here, Lime wrote a message which contained examples of poor grammar. In response to this, Salmon writes a joke which is sarcastic and plays on language. Rather than writing “Very good English”, Salmon purposefully uses the wrong word and writes: “Very good England”. This was met with a chuckle and generally a good response from the other players. In response, Lime plays along and writes another incorrect sentence which switches between English and Norwegian. This is also met with a positive response from the other players. These jokes show a willingness to be playful with language, which partly may be credited to the playful nature of the game. Regarding competences, the switch between languages present in this case is a good example of plurilingualism, as mentioned in the companion volume of CEFR and discussed in 2.3.2. It may also be argued that writing a funny joke shows the same level of discourse competence as writing a convincing argument. The function of a joke is to generate the desired form of response, usually laughter. Achieving this requires both sociolinguistic and sociocultural competence, since the recipients of the joke must both understand the joke and see the humour in it.

4.2.1.2 Limited coding scheme frequency table

While the previous subsection showed specific examples of findings from the screenshot analysis, this subsection will consider the sum of the data collected from all screenshots. As mentioned, a total of thirty-three screenshots have been analysed using a coding scheme containing thirteen different categories, and the frequency table below shows the total count of occurrences in each separate category.

Figure 10

Limited Coding Scheme Frequency Table

Category	Related sub-competence	Frequency
Argumentation	Discourse competence, thematic development	18
Accusation	Functional competence	37
Initiation	Functional competence	18
Response	Functional competence, turntaking	98
Clarification request	Linguistic competences, turntaking, fluency	2
Reformulation	Linguistic competences, discourse competence, flexibility	2
Information inquiry	Discourse competence, functional competence	31
Socialising	Discourse competence	20
Expletives	Functional competence, turntaking	9
Plurilingualism	Plurilingual competence	5
Ridicule	Functional competence	5
Game assistance request	Functional competence, discourse competence	1
Confirmation	Functional competence, turntaking	10

As shown by the table, the significantly most recurring category was Response, which is unsurprising considering any form of participation in a discussion that had already been initiated has been coded as Response. Initiation and Response are both examples of interactional strategies related to the functional competence, one of the pragmatic competences. It was noticeable that often the same few players would initiate the discussion, while some players only responded when addressed directly. The low total number of instances that initiated a discussion, 18 initiations versus 98 responses, support this idea. This is perhaps not very surprising however, and most likely this result is due to personality rather than any aspect of the game itself. While there are gameplay related reasons to remain anonymous, as will be discussed below, it is likely that some participants are uncomfortable with being the centre of attention even when it could have an in-game benefit for them. True anonymity would perhaps help mitigate this factor, but even though the participants were hidden behind usernames during the game sessions, they were usually quick to identify each other.

After Response, the second most common code is Accusation. Since the voting phase is such an integral part of the game, accusing players is a key part of the gameplay in Among Us, and it is therefore logical that this code would appear at a high frequency. It is interesting to consider the frequency of accusations against the frequency of argumentations. While a total of thirty-seven accusations were registered, the number of argumentations made up only eighteen cases, of which there were several occasions where players provided more than one argument for the same accusation. This shows just how common it is for players to accuse another player without providing any sort of argumentation or reasoning. From a CLT standpoint this may be considered disappointing, as argumentation is a good exercise of discourse competence. There are several reasons why players may often choose to not support their accusations. Players may simply feel restrained by the time sensitive nature of the game and may choose not to write an argument because they feel they don't have time to do so. Another reason may be that by using poor argumentation they risk becoming the target of the vote themselves. Because of this, some players may choose not to say anything at all in the hopes that this way they avoid drawing attention to themselves. A common solution seems to be to participate with short messages but to avoid getting into lengthy discussions. However, while this was the case during three of four sessions of Among Us, the fourth class seemed to develop a different culture, where long discussions were more common, and those that did not participate were considered suspicious. In this class, arguments such as "Red has been very quiet, that's suspicious" were more common. Since the preparation for the game session was identical in all classes it is difficult to conclude why this was the case, but one likely reason might be the culture already developed in the class prior to the experiment. This is an interesting finding which suggests that the culture within any specific classroom has a big effect on the viability of Among Us as an approach to DGBL, and in extension perhaps also DGBL in general.

Turning the attention away from the categories occurring at the highest frequency, several categories were rather rare. Clarification request and Reformulations, both categories that are linked to linguistic competences, were only recorded in two instances each. While this may be incidental, it may also suggest that the participants were willing to risk communication breaks while playing the game. In the experiment there were multiple instances of misspelled words and vague messages that perhaps needed clarifying, but players seldom chose to interact with this. Most commonly, if a message was vague, it would not receive response, and misspelled words would not be corrected unless necessary. It is hard to know for sure, but one possibility is that this may be due to the nature of written communication in a time sensitive context. If the players had been communicating orally there would perhaps be more clarification request since oral communication is quicker and more reactive than written communication. Still, it is possible to argue that an exercise

in interpreting vague messages will help participants develop their semantic competence, for example. And, when players receive no response after sending a vague message, they will hopefully learn from this and write more detailed messages in the future.

Another interesting observation is the low total of instances coded as Plurilingualism. While the participants used Norwegian often, only instances where they combined it with English were coded as Plurilingualism, as described in section 3.5.2. Most commonly, participants that switched to Norwegian would write whole messages in Norwegian rather than combining with English. It is possible to argue that participants are still developing their plurilingual competence in these instances, but in the final analysis it was decided that only messages containing both English and Norwegian text would count as plurilingualism.

It is also interesting to note the low frequency of any categories related to linguistic competences. Only two categories were identified that could be related quite directly to linguistic competences (as presented in 2.3.2), and of these two categories there was recorded a total of four occurrences. It is logical to argue that this number would have been higher had all discourse that took place during the experiment been recorded and analysed, but there is nothing that would suggest that the ratio of which linguistic competences are represented compared to other competences would be higher. Therefore, in the context of linguistic competence, this might be considered disappointing numbers. However, it is not unreasonable to suggest that participants might also develop their linguistic competence from interacting with other players in ways that are difficult to record. For example, players might encounter new words, understand them from context and expand their vocabulary.

Lastly, the high count of information inquiries is interesting. A total of thirty-one instances were recorded in thirty-three screenshots. Considering the nature of the game, this is not surprising. Since *Among Us* is a social deduction game where any player could be the impostor and any single player only has a small portion of all the data available, it is natural that questions are common. To clarify, even the most perceptive players can only be in one spot of the map at the same time. There are tools available, such as security cameras, which allow capable players to observe more than an inexperienced player, but even with these tools a player will only be able to observe a small area of the map at the time. Therefore, crewmembers are naturally encouraged to share observations and seek information from each other. Asking a question and generally seeking information through communication is a great practice of both functional and discourse competences. The players know what kind of information they wish to receive and must formulate a question which will trigger the right response from the other players. It is therefore encouraging from a CLT standpoint that *Among Us* provokes a high frequency of Information inquiries.

4.2.2 Discussion

When returning to the research question, how do students in Norwegian upper secondary school use English to communicate in a multiplayer video in an intramural context, the results presented in 4.2.1 provide some interesting insight. The limited coding scheme frequency table in figure 10 clearly shows that students use a large and varied number of competences while communicating in the experiment. Functional and discourse competences were the most used competences by a rather large margin. As mentioned, other categories such as linguistic competence and plurilingual competence were quite rare by comparison. Nonetheless, what remains evident is that the participants in the experiment used a wide range of competences while playing *Among Us*.

4.2.2.1 *The intramural element*

An important element of the research question is the intramural context, and it is interesting to consider whether the intramural context had any noticeable effect on how participants communicated. Would a similar analysis of four game sessions played in an extramural context and without the presence of a researcher give different results? If so, and the results differed greatly, one could make the argument that any relationship between gaming as an extramural activity and EFL learning is invalid, as it would not necessarily translate to EFL learning in the classroom. However, results of the present study might be considered positive. Twenty instances of the category labelled *Socializing* and nine instances of *Expletives* would suggest that participants did not communicate in a formal way despite playing the game in a classroom with a researcher present. Field notes taken during the experiment also suggest the same thing. Participants appeared to find the game fun, and most participants appeared to be engaged by the gameplay. This in turn seemed to create a relaxed atmosphere where students dared to partake and have fun with language. This supports what Becker and Gopin (2016) suggests and shows the benefits to using a game that is both engaging and fun. Had participants not found *Among Us* to be fun, participation in the discussion would most likely have decreased and the potential for learning would have diminished.

It was not uncommon that students would switch to oral communication, perhaps due to the time sensitive aspect of the discussion phase. While this is not ideal, since only written communication was recorded, it does show engagement and a desire to communicate. It is possible to argue that whenever a participant switched to oral communication, they did so to prevent a breakdown in communication, which shows a desire to maintain a flowing discussion. In general participation was good, and it was noted that in all four classes almost all participants wrote something in the game chat at some point during the experiment. Despite this, it was very apparent that some students took a greater part in the discussion than others. This may, as mentioned, be due to personality rather than the game itself, but might also be related to experience with video games.

Results of the experiment suggest that previous experience with Among Us specifically, or video games in general, had a noticeable impact on participants ability to partake. Some practical implications to this will be discussed in 4.5.2, but specifically in relation to language it is interesting to note that experienced players appear to use a lingo that was unique to Among Us. There are examples of this in the screenshots analysed in section 4.2.1, including the meaning of “self-report”, the understanding that using someone’s name without context is an accusation, the abbreviation “sus” which almost completely replaces the use of the word suspicious, and so on. Students with little to no previous experience with the game may struggle to understand this lingo from context, which might make it challenging to interact with the more experienced players. Another interesting point of discussion is whether this lingo is beneficial or detrimental to the development of linguistic competence. If this lingo truly is unique to Among Us, one may argue that it is not beneficial for students to play Among Us in the classroom if the language they learn is only beneficial within the game.

This also ties into a bigger issue: Is the language used while playing video games as beneficial to EFL as for example a text with more academic language? Even if we disregard lingo unique to specific games, there is a large amount of other video game related terminology that students learn and use during gameplay which might not be versatile enough to expand the vocabulary students use in academic, vocational, or general social context. However, there is reason to believe that this is not necessarily the case. There are examples of video game lingo becoming a part of English, or even Norwegian, colloquial speech. For example, during the experiment the field notes recorded that students would use the word “sus” in social scenarios completely unrelated to Among Us, and to my knowledge the word is also widely used on the internet completely unrelated to the game it originates from. While it is not unlikely that this word might fall into disuse if the game Among Us disappears from popular culture, at the time of writing the game still has a big enough presence to argue that lingo used in the game is relevant for use in social contexts. It is also interesting to consider that even if the game Among Us might eventually disappear from popular culture, it is still possible that words such as “sus” will remain a part of the English language. The word has a meaning which is applicable both outside of Among Us and outside of video games. Social deduction games are a popular genre of both video games and other more analogue games, such as board games and party games. Most likely the abbreviation “sus” will never replace the word “suspicious” completely, but it might coexist as a more colloquial form of the word used by friends in informal contexts. Video game terms in general are likely to remain a large part of the English language. As mentioned in the introduction, video games as a cultural phenomenon have grown rapidly the last years and to my knowledge there is nothing that suggests this will change anytime soon.

What this means specifically in an intramural context is that the language students might learn from playing video games in the classroom is relevant from a sociocultural perspective, and to some degree also academically. Topics such as 21st century skills, video games and digital literacy have become a large part of the English curriculum for students of English in Norwegian upper secondary school, and it is not uncommon for these topics to appear on official exams. Because of this, it is logical to argue that it might be beneficial for students to have some knowledge of video game lingo, even in an academic context. It is still worth to note, however, that this argument does not mean that video games are more beneficial to EFL than an academic text, it simply means that even though participants in the experiment conducted for the present study communicated using a lingo that is tailored specifically to the game, there is enough benefit from learning language related to video games that it is still valuable in an intramural context.

4.2.2.2 *General discussion*

The results of the present study are quite similar to those presented by Hofmeyr (2020). Hofmeyr used a different game, but reported that the experiment resulted in a high amount of both L2 input and output among the participants. Most significantly, the experiment managed to create real, authentic and meaningful communication, which is a core principle of CLT (see section 2.3.2 for more information). The present study shows similar results. The screenshots show a fair amount of both L2 input and output, and the high number of occurrences of categories related to one or more sub-competences of CC suggests that authentic and meaningful communication has taken place. Hofmeyr also reported that the amount of L2 input and output decreased over time as participants became more familiar with the game. However, there is nothing in the results of the present study that suggests that this was the case during the experiment. It is possible that this would be the case had more game sessions been carried out, but it is also possible that this results is dependent on the game used. Without going into detail, the game used by Hofmeyr, *Keep Talking and Nobody Explodes*, is very different from *Among Us* in several aspects, and the games motivate players to communicate in very different ways. More research is required.

Four games sessions carried out in four classes is not sufficient to make any proper generalizations, but the results of this experiment might be considered encouraging. There is little to suggest that these results would not replicate if a similar experiment were conducted in other classes from other schools, or in other parts of the country. Though gender has not been considered in the present study, it is worth to mention that most of the participants were male, though there also were several female participants. It would have been very interesting to compare the results of the present experiment to results of a similar experiment carried out in a classroom with mostly female participants, to study whether gender affects the way a class communicate with each other. In

general, more research is required to draw any kind of conclusion, but the present results suggest that students in Norwegian upper secondary school use English in a varied and informal way when playing a video game together in the classroom. The limited coding scheme shows that participants used several sub competences of CC while playing, of which discourse and functional competence are the most prevalent. Despite the intramural context, participants were willing to socialize, something which is promising when considering the potential for learning in authentic social dialogue. The results show that authentic and meaningful communication has taken place during the experiment.

4.3 SUB RQ 2: ACCORDING TO DATA GATHERED FROM PARTICIPATING STUDENTS, DO WE SEE A RELATIONSHIP BETWEEN STUDENTS' REPORTED EXTRAMURAL ENGAGEMENT IN MULTIPLAYER VIDEO GAMES AND EVIDENCE OF COMMUNICATIVE COMPETENCE IN ENGLISH?

4.3.1 Results of the questionnaire: Data on self-reported experiences

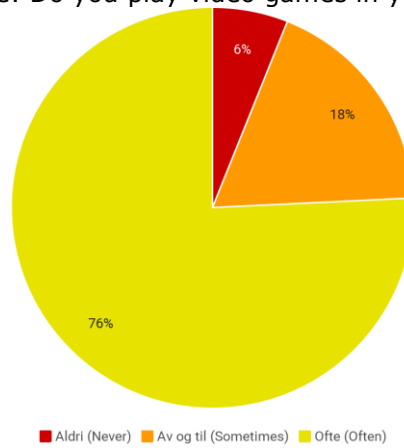
As detailed in section 3.4, the questionnaire was made up of twenty-three survey items aiming to gather data on self-reported experiences and attitudinal data regarding video games, both within and outside the classroom. This section presents all results relating to data on self-reported experiences with video games before section 4.3.2 will discuss these results in light of the relevant literature presented in chapter 2.

It is beneficial to begin by considering previous and current experience with video game among respondents. The survey item presented below in figure 11 aimed to establish a general knowledge of how many respondents currently played video games as a spare time activity, while the following survey item presented in figure 12 gathered info regarding experiences with video games while growing up. This distinction was made since some respondents might not play video games currently but might still have substantial previous experience with video games. While the sample size in this survey is far too small to draw generalisation regarding Norwegian teenagers in general, they still provide pointers which may be useful. Since the questionnaire was conducted in Norwegian, English translations have been provided in parentheses.

Figure 11

Pie Chart: Number of Respondents that Play Video Games in their Spare Time

Flervalg: Spiller du videospill på fritiden?
(Multiple choice: Do you play video games in your spare time?)

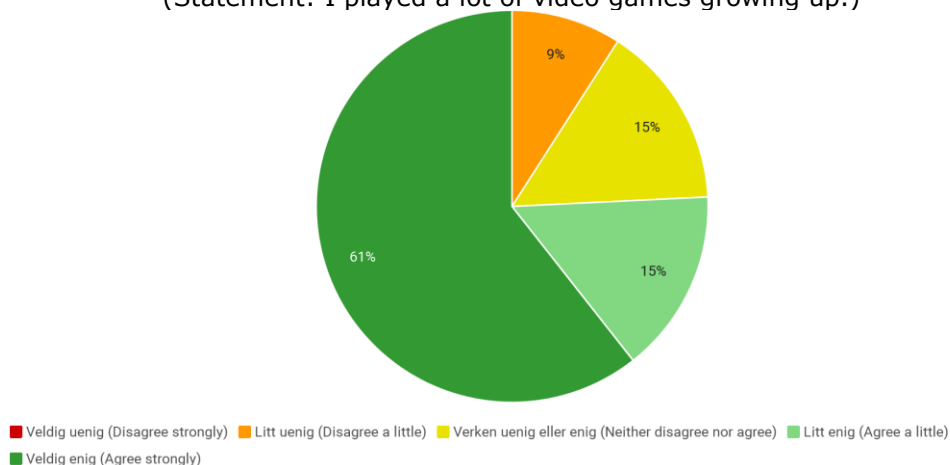


Of thirty-three respondents, seventy-six percent answer that they play video games often, while eighteen percent play sometimes. Only six percent, two of thirty-three respondents, answered that they never play video games. It is interesting to contrast this result with that of the next survey item, which asks whether respondents played video games while growing up. No respondents strongly disagreed that they had played a lot of video games while growing up.

Figure 12

Pie Chart: Number of Respondents that Played Video Games while Growing Up

Påstand: Jeg spilte mye videospill på engelsk i oppveksten.
(Statement: I played a lot of video games growing up.)



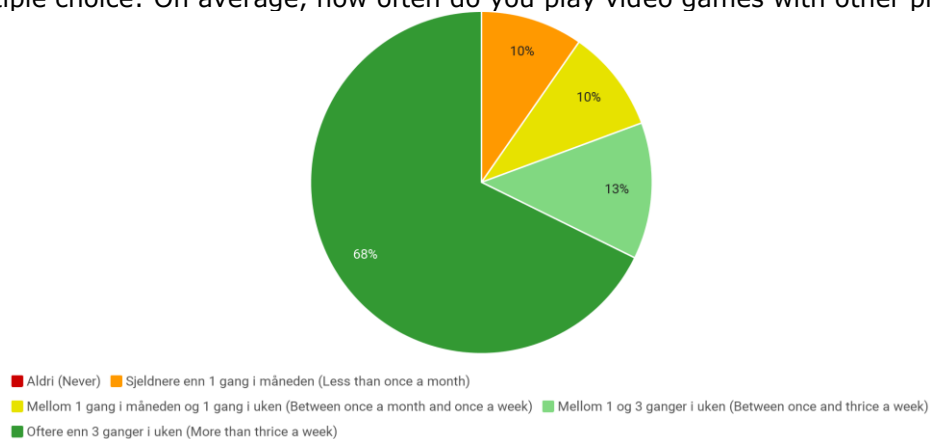
This suggests that all respondents had at least some previous experience with video games, even if it is not a current hobby. However, nine percent of respondents disagree a little, which would indicate that they played a little but not much during their youth. It could also be the case that they played video games in a different language than English since the questions specifically regarded video

games in English. As will be discussed in section 4.5.2, understanding how to play a video game requires a set of skills that can only be acquired through playing the game in question or a game that is similar enough for experiences from one game to carry over. That all respondents had at least some previous experience with video games is positive finding when considering the use of DGBL in the classroom, but this finding is still limited by how large and varied the category ‘video game’ really is. For example, having played the football simulator FIFA will teach players how to operate the controls of their respective game console, which is a skill that carries over to almost all other video games on the same console, but it teaches the player nothing about how specifically Among Us is played. Nonetheless, previous experience with video games in general is a very important factor when using DGBL in the classroom.

Figure 13

Pie Chart: Number of Respondents that Play Multiplayer Games

Flervalg: I gjennomsnitt hvor ofte spiller du videospill sammen med andre spillere?
 (Multiple choice: On average, how often do you play video games with other players?)



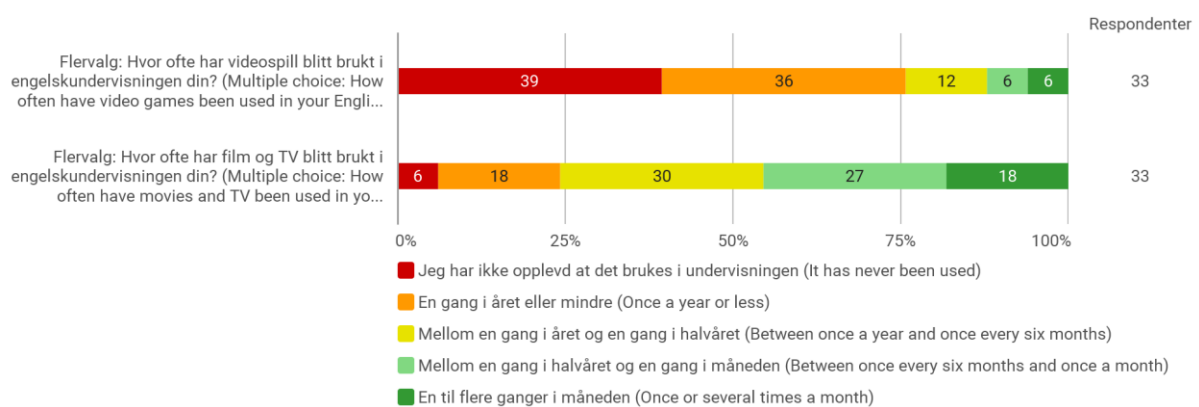
The pie chart in figure 13 shows how often respondents play video games with other players, either online or locally. This survey item only appeared for respondents that answered that they played video games at least occasionally, which was thirty-one respondents. Of those, sixty-eight percent answered that they play video games with others at least three times a week. In hindsight, these results suggest that it could have been beneficial to scale the response alternatives further towards a higher frequency. It is not unreasonable to suggest that several of the respondents that play multiplayer video games thrice a week might play as often as every day. Only ten percent played with others less than once a month, while no respondents answered that they never play multiplayer. This shows how social gaming as a hobby has become, and as will be discussed later may tie into the value of extramural gaming towards L2 proficiency. When asked what kind of games the respondents played the most, multiplayer games were overwhelmingly most common.

Regarding specific titles, the titles most mentioned were Fortnite (Epic Games), Call of Duty (Activision), and Minecraft (Mojang), all of which were popular titles at the time of the survey.

Respondents were asked how much they used English in their spare time, to which thirty-nine percent of respondents answered: “more than 6 hours a week”, while thirty-six percent answered: “between 1 and 3 hours a week”. Following this survey item, respondents were asked to expand on their choice with a free text answer. Answers were generally very short, with twenty-two respondents writing less than five words and thirteen of those writing just a single word. “Gaming” was the most common one-word answer, and twenty-three respondents mentioned video games in their answer. YouTube and social media were the most common answers besides video games. Interestingly, not a single respondent mentioned movies, TV, or series. Rather than indicating that respondents do not watch English-language media, this may suggest that respondents did not consider watching English media as “using English”. One respondent answered that they used English approximately two to three hours almost every day when playing video games with friends, while another respondent answered that they used English “24/7” after coming home from school. One respondent specified that they often played video games online with random players, which required a high degree of communication and had taught them much. A few respondents that mentioned YouTube also reported watching English-speaking content creators play video games. Interestingly, one respondent wrote that they used English when playing video games, but sometimes only for “callouts”. Callouts are a form of lingo. They vary from game to game but are generally specific words or short phrases commonly used in competitive multiplayer games to quickly convey important information to teammates.

Figure 14

Bar Chart: Video Games and English Media use in Previous EFL Education



Finally, before moving on to the discussion, the graph in figure 14 shows how often video games and other English media had been used in respondents’ EFL education previously. It was specified that

this included all English education at all levels. As shown in this bar chart, thirty-nine percent of respondents had never experienced video games being used in education, and a total of seventy-five percent had experienced it never or less than once a year. For contrast, twenty-four percent answered correspondingly for English media. If these results are representative for Norwegian upper secondary school students in general, then this would clearly suggest that DGBL has not been adopted at scale into the Norwegian classroom yet, despite their presence in LK20 and Spillerom (2019). As mentioned, previous experience with video games is an important factor for the viability of DGBL, and it is therefore logical that the educational possibilities of DGBL will be biggest if it is implemented into all levels of the school system. There is some room for interpretation in these results. It is curious that two students have experienced video games being used in education once or several times a month, while most other respondents have experienced it less than once a year, or even never. Two respondents also report that they have never experienced movies or TV being used in education, which would be surprising considering the general experiences of other respondents. This could be due to how respondents interpret the question, or it might be due to previous experiences before upper secondary school.

Figure 11 showed that thirty-one of thirty-three respondents play video games in their spare time, of which twenty-five respondents reported that they play often. Sub RQ2 asks whether we see a relationship between students who play multiplayer video games as an extramural activity and communicative competence, and it is therefore particularly interesting to cross-reference the data presented in figure 11 with those presented later in figure 15. Figure 15 presents attitudinal data from a survey item where respondents were asked to rate their own ability to communicate in English on a Likert scale. When cross-referenced with data on self-reported experiences, this creates the table visible below in table 1, a table that shows which respondents play video games in their spare time and how they rate their own ability to communicate in English. The data presented in figure 13 shows that all respondents that play video games also play multiplayer games at least occasionally, with 68% playing more than three times a week.

Table 1*Cross-reference Table: Self-reported Communicative Competence & Respondents who Play Video Games*

Påstand: Jeg er flink til å kommunisere på engelsk. (Statement: I am good at communicating in English.)
 Crossed with: Flervalg: Spiller du videospill på fritiden? (Multiple choice: Do you play video games in your spare time?)

	Aldri (Never)	Av og til (Sometimes)	Ofte (Often)	In total
Veldig uenig (Disagree strongly)	0	0	0	0,0%
Litt uenig (Disagree a little)	0	1	1	6,1%
Verken uenig eller enig (Neither disagree nor agree)	0	1	3	12,1%
Litt enig (Agree a little)	2	2	13	51,5%
Veldig enig (Agree strongly)	0	2	8	30,3%
In total	2	6	25	33

There are several interesting observations in this table. Firstly, the largest group of respondents play video games often and agree a little that they are good at communicating in English. When considering a relationship between multiplayer video games as a spare time activity and CC, this is a positive result. Secondly, it is perhaps even more positive that the second largest group of respondents play often and rate their ability to communicate strongly. When viewed in unison, this means that twenty-one of thirty-three respondents play video games often and have a positive opinion of their own ability to communicate in English. Thirdly, all respondents that agreed strongly to the statement played video games. However, it is also worth to note a fourth observation, both respondents that slightly disagreed to the statement also played video games.

4.3.2 Discussion

Initially it is interesting to consider the self-reported experiences of respondents in the present study against the experiences of respondents in the study conducted by Aleksić et al (2016). In the present study, two of thirty-three respondents (6%) reported that they did not play video games in their spare time, while no respondents reported that they had no previous experience with video games. In the study conducted by Aleksić et al, 225 out of 1164 respondents (19.32%) that completed the survey reported that they did not play video games. This is a clear contrast that perhaps is most apparent in percent, 6% in the present study contrasted with 19.32%. This difference is substantial, and there might be several reasons that account for this. Firstly, Aleksić et al conducted their study in 2016, and the present study was conducted in early 2022. Video games have only grown in popularity since 2016, and quite noticeably so during the Covid-19 lockdown. Secondly, there is a demographic factor among respondents. The respondents of the present study were Norwegian

students in upper secondary school, which may have different experiences with video games due to both age and culture when compared to Serbian primary school students. However, despite this difference, it is still important to note that both studies found that most respondents played video games in their spare time. Though 80.68% is significantly less than 94%, it is still a large majority.

Moving on, it is interesting to discuss the data presented in table 1. These are the results that are perhaps most directly connected to sub RQ2. The table shows that twenty-one of thirty-three respondents both played video games often in their spare time and agreed with the statement (I am good at communicating in English). Of twenty five respondents that played video games often, twenty-one rated their ability to communicate positively. When considering a relationship between playing multiplayer video games and communicative competence, these results are very encouraging and could suggest that there is a possible positive relationship. However, some other findings in table 1 are interesting to consider. The sample size is very small, but both respondents that did not play video games agreed a little to the statement, thereby rating their ability to communicate positively. Two respondents is a very small number and it is impossible to make generalisation for the larger population based on these results, but if these results are considered representative for the larger population then this would mean that Norwegian upper secondary school students in general rate their ability to communicate in English equally positive, whether they play video games in their spare time or not. This in turn would suggest that there is no positive relationship between multiplayer video games as a spare time activity and CC. However, the sample size is far too small, and in general more research is needed. It would perhaps be particularly interesting to know how a larger sample of students that do not play video games rate their own CC.

The results presented in section 4.3.1 are similar to those presented in section 2.4.2. First it is interesting to consider the study carried out by Sundqvist and Wikström (2015). Their study did not focus specifically on CC but used a vocabulary test and an essay to rate respondents' English proficiency. From a sample of eighty Swedish teenagers, they found that the respondents who played the most video games had the highest scores. Though English proficiency is self-reported in the present study, the results show the same tendencies. Based on their findings, Sundqvist and Wikström concluded that there was a positive relation between extramural gaming and L2 proficiency. Secondly, the study conducted by Sylvén and Sundqvist (2012) show the same kind of results. Respondents were evaluated by a vocabulary test and by their national test scores, which measure reading and listening comprehension. Once again, respondents who played the most video games consistently scored higher than other respondents. Sylvén and Sundqvist also suggest in their discussion that there might be a relationship between multiplayer games and English L2 proficiency, which the findings of the present study would seem to support.

In summary, the findings related to sub RQ2 may be considered somewhat optimistic. Most respondents played video games in their spare time, and all respondents reported a least some experience with video games while growing up. These are positive numbers when considering the viability of DGBL in the classroom. Furthermore, sixty-eight percent of respondents that play video games play multiplayer game more than three times a week, and more than eighty percent of respondents that play video games often rate their own ability to communicate in English positively. There are some anomalies in the data that suggest that further research is required, but the general trend of the results suggests that there could be a positive relationship between multiplayer video games and CC. It is not insignificant that all respondents who strongly agreed with the statement (I am good at communicating in English) played video games.

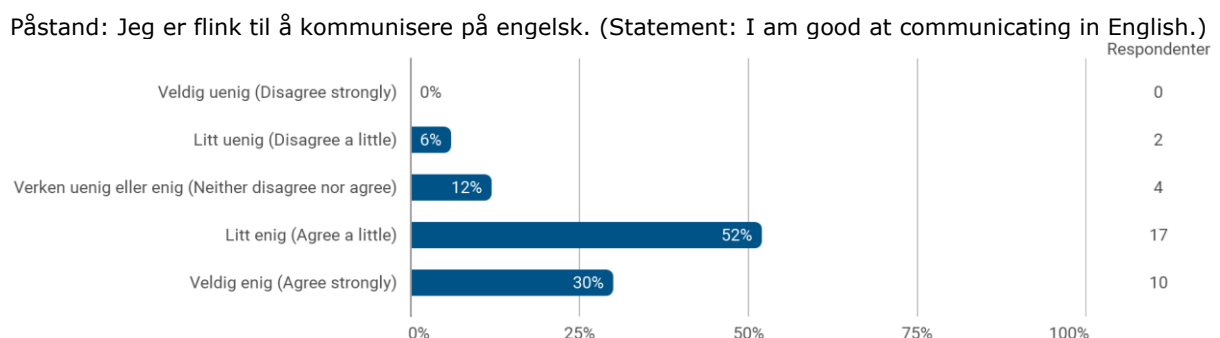
4.4 SUB RQ 3: ACCORDING TO DATA GATHERED FROM PARTICIPATING STUDENTS, TO WHAT EXTENT DO STUDENTS IN NORWEGIAN UPPER SECONDARY SCHOOL BELIEVE VIDEO GAMES HAVE HELPED THEM DEVELOP THEIR COMMUNICATIVE COMPETENCE?

4.4.1 Results of the questionnaire: Attitudinal data

The survey collected attitudinal data on several topics, but for the sake of relevance it makes sense to begin by presenting the bar chart below in figure 15, since this data was used to create the cross-reference table already discussed in table 1. This bar chart shows how respondents rated their agreement to the following statement on a Likert scale: I am good at communicating in English.

Figure 15

Bar Chart: Self-reported Ability to Communicate in English



As already mentioned to some degree in section 4.3.1, the results of this survey item are quite encouraging. As many as twenty-seven respondents either strongly agreed or agreed a little that they were good at communicating in English. No respondents strongly disagreed, while only two respondents disagreed a little. It is worth mentioning again that respondents were presented information about CC before answering the survey.

Figure 16

Bar Chart: Attitudinal Data Regarding Use of Video Games and English Media in Education

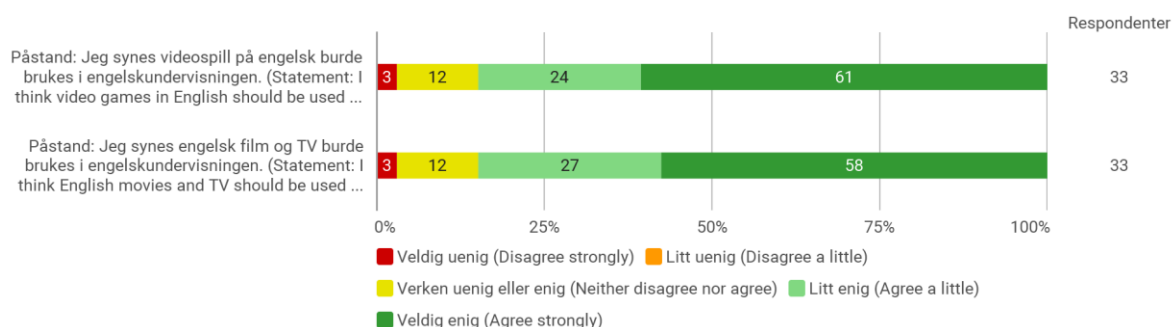
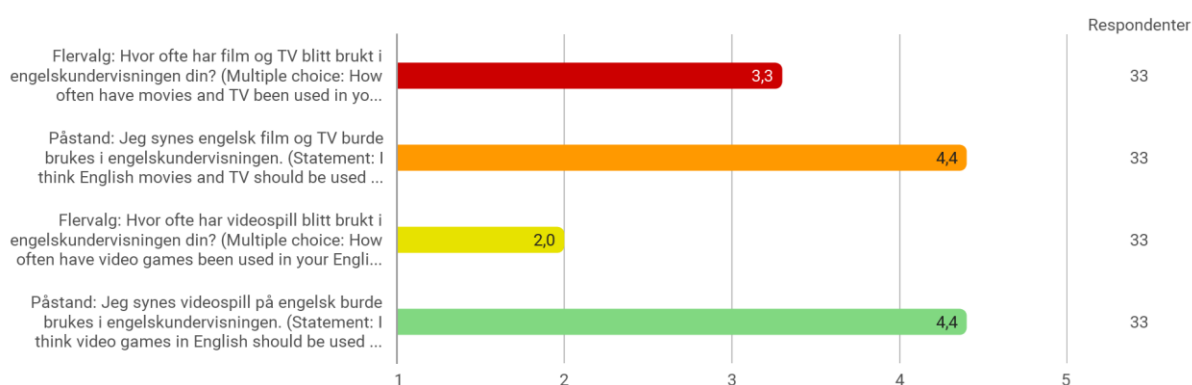


Figure 14 presented in section 4.3.1 shows how often video games and other English media had been used in previous EFL education, while figure 16 above shows whether respondents believe video games and English media should be used in education. As this chart shows, most respondents agree that both should be used in EFL education. A total of eighty-five percent of respondents agreed that video games should be used in education, where sixty-one percent agreed strongly and only three percent disagreed. This does in no way conclude that video games should be used in education, but most teachers will agree that it is important to take the wishes of the students into consideration when constructing educational material. It is interesting that the same percentage of respondents agreed that both video games and other English media should be used in education, but more respondents strongly agreed when considering video games. Figure 17 shows the average answers in figure 16 next to the averages in figure 14.

Figure 17

Bar Chart: Comparison of Averages from Figures 14 and 16



These averages show quite effectively how disproportionately respondents have experienced video games being used in education compared to how many agree that it should be used. When asked in a following free text survey item why or why not the respondents believed video games should be used in education, responses were varied despite the mostly positive attitude shown in figure 16.

The most common tendency across all responses was that video games are a fun way to learn. Second most common was that since respondents felt they learned English from playing video games in their spare time they believed it would also work in the classroom. One respondent wrote that it would be beneficial to play video games in school because it would teach them the English they need when playing at home. In general, most responses were positive to both video games and English media as the graph in figure 15 would suggest, but as mentioned answers were still varied and more nuanced than the graph indicates. One respondent wrote that they did not believe using video games in English education would make students learn more English, but that it might still be useful for increasing motivation. Another respondent wrote that they believed video games are “too loud” to be used in the classroom, and that a lot of vocabulary learned through video games would not be useful in other contexts. This is a very relevant and important observation, that ties directly into the discussion in 4.2.2. A different respondent indicated that video games provided a much easier and less awkward way to practice communication, because when playing video games there is always something to talk about. The final respondent which will be mentioned explained how video games make the player want to learn English because they need it to play the game. This is perhaps not the case for all respondents, but this logic would suggest that all video games that are sufficiently engaging and require English to be played are prime candidates for use in the classroom. The table below in table 2 shows respondents’ attitudes towards video games in English education cross referenced with which respondents play video games in their spare time.

Table 2

Cross-reference Table: Attitudes Towards DGBL & Video Games as a Hobby

Påstand: Jeg synes videospill på engelsk burde brukes i engelskundervisningen. (Statement: I think video games in English should be used in English education.)

Crossed with: Flervalg: Spiller du videospill på fritiden? (Multiple choice: Do you play video games in your spare time?)

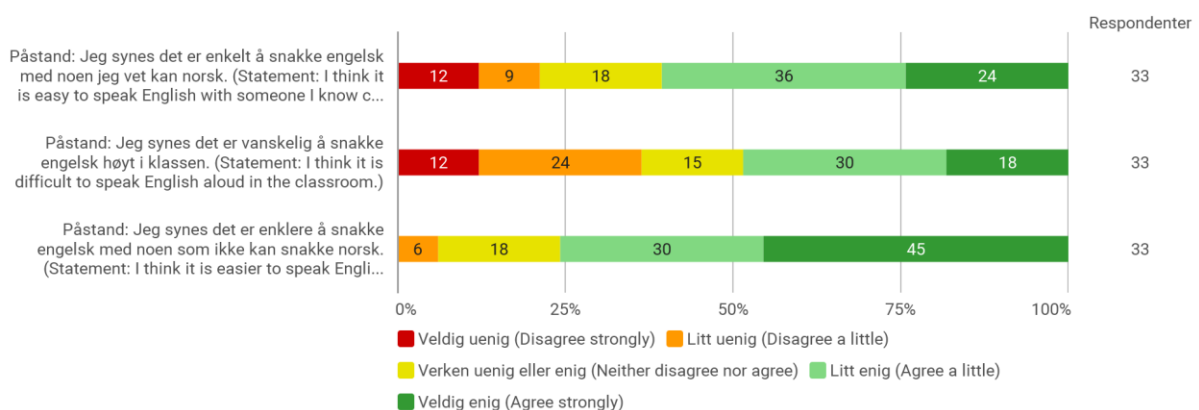
	Aldri (Never)	Av og til (Sometimes)	Ofte (Often)	In total
Veldig uenig (Disagree strongly)	0	0	1	3,0%
Litt uenig (Disagree a little)	0	0	0	0,0%
Verken uenig eller enig (Neither disagree nor agree)	0	1	3	12,1%
Litt enig (Agree a little)	1	2	5	24,2%
Veldig enig (Agree strongly)	1	3	16	60,6%
In total	2	6	25	33

The table shows that sixteen respondents both play video games often and strongly agree that video games should be used in English education. Including those that agree a little and play video games sometimes, a total of twenty-six respondents play video games and agree with the statement. This makes up approximately seventy-nine percent of respondents. This table also provides two interesting additional observations. Firstly, the one respondent that disagreed strongly with the use of video games in the classroom was a respondent that plays video games often in their spare time. Secondly, the two respondents that never play video games in their spare time both agree that video games should be used in English education.

A couple of survey items aimed to gather data regarding respondents' attitudes towards speaking English in the classroom, which is useful when considering how intramural and extramural context might affect the educational value of DGBL. The bar chart below shows the results of three survey items, all of which were statements rated on a Likert scale.

Figure 18

Bar Chart: Attitudes towards Speaking English in Various Contexts

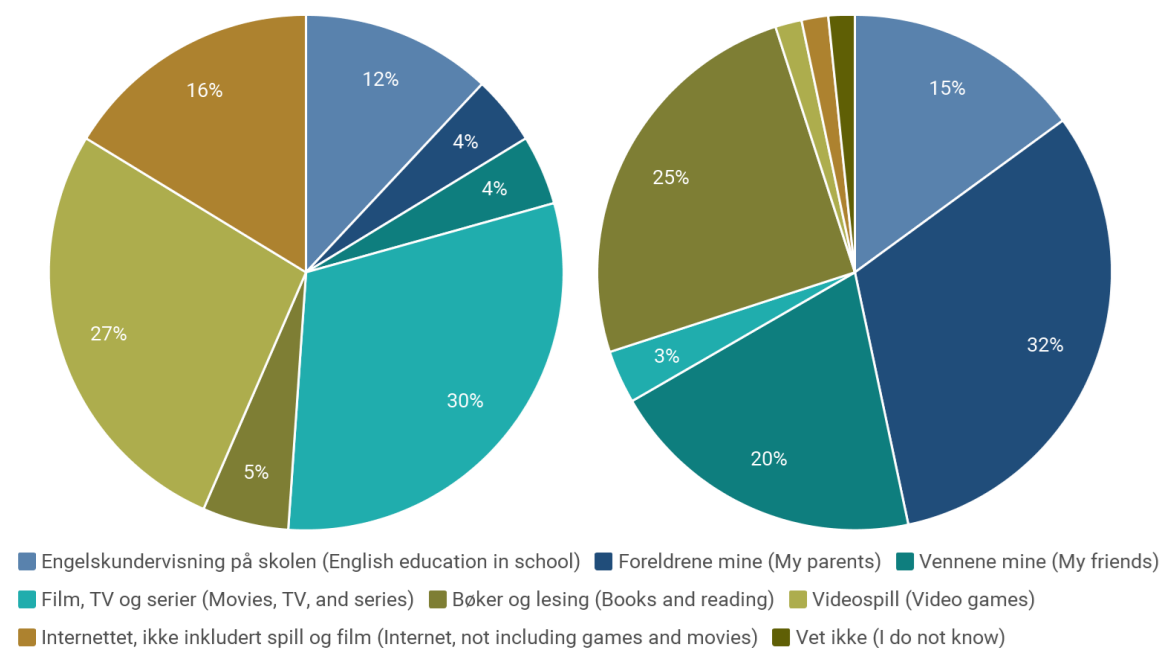


An interesting result of these survey items is the fact that even though sixty percent of respondents think it is easy to speak English with someone they know can speak Norwegian, seventy-five percent still think it is easier to speak English with someone who cannot speak Norwegian while no respondents strongly disagreed. It is also worth noting that forty-eight percent think it is difficult to speak English aloud in the classroom, while thirty-six percent disagreed. Like previously, respondents were asked to expand on their answers in a free text survey item. In general, most respondents answered that not having the opportunity to revert to Norwegian makes it easier to speak English when speaking to someone that does not speak Norwegian. One respondent also reports that speaking English to someone that knows Norwegian can often feel pointless, which makes sense considering the core principles of CLT highlights the importance of authentic communication.

The pie chart below in figure 19 shows what source respondents reported had taught them the most and the least English. When reading this chart, it is important to be aware that respondents could pick multiple options and that responses below the chart are listed clockwise from the top. Since respondents could chose multiple responses, the chart does not convincingly show what percentage of respondents picked each category. Twenty-eight of thirty-three respondents picked film, TV, and series as one of the sources that had taught them the most English, while twenty-five respondents picked video games. The third most picked option was the internet, then closely followed by English education in fourth. If this result is representative for the larger population of teenagers in Norway, the result suggests just how important digital media might have already become for English as an L2. If the three most common sources for learning English are all outside the classroom, this is both important and perhaps slightly problematic since this makes public English education less influential.

Figure 19

Pie Chart: Where Respondents Report Learning the Most (Left) and Least (Right) English



With regards to where respondents reported they learned the least English, the results are in many ways mirrored. The three most picked options for where respondents learned the least English are parents, books and reading, and their friends, in that order. English education in school was picked fourth most as a source where respondents learned the least English. This data is of course self-reported, which means it cannot be regarded as factual. A respondent might have learned much from their English education without realising it. It does, however, provide a window into how students in Norwegian upper secondary school view their English education. It is important to mention that these pie charts do simplify the data. At first glance English education appears to have

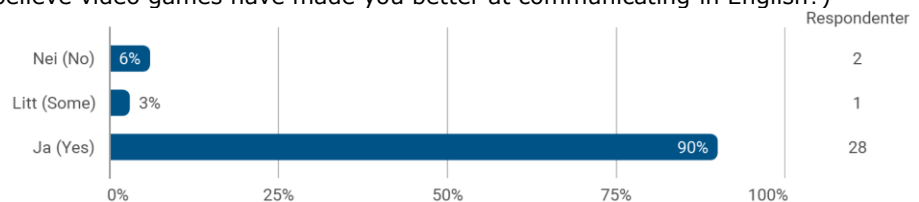
been picked more often as a source where respondents learned the least English, but this is only because the total number of options picked in the right pie chart is smaller than in the left. English education was picked by eleven respondents as a source of most learning and by nine respondents as a source of least learning.

The final set of results which will be highlighted in this section are perhaps those most relevant to sub RQ3. Figure 20 shows whether respondents believed video games had made them better at communicating. Only respondents who answered that they played video games in their spare time were presented with this survey item.

Figure 20

Bar Chart: Self-reported Effect of Video Games on Communicative Competence

Flervalg: Tror du selv at videospill har gjort deg flinkere til å kommunisere på engelsk?
(Multiple choice: Do you believe video games have made you better at communicating in English?)



An overwhelming ninety percent of all respondents that played video games in their spare time believed that video games had improved their ability to communicate in English. Only two respondents answered in the negative. In hindsight it would have been beneficial for all respondents to answer this survey item, since the results from section 4.3.1 showed that even though not all respondents played video games actively in their spare time, all respondents had some previous experience with video games. Despite this, these numbers are still very encouraging. In table 3 below, the results from figure 20 have been cross-reference with which respondents play multiplayer video games.

Table 3*Cross-reference Table: Attitude Towards DGBL & Multiplayer Video Games*

Flervalg: I gjennomsnitt hvor ofte spiller du videospill sammen med andre spillere? (Multiple choice: On average, how often do you play video games with other players?)

Crossed with: Flervalg: Tror du selv at videospill har gjort deg flinkere til å kommunisere på engelsk? (Multiple choice: Do you believe video games have made you better at communicating?)

	Nei (No)	Litt (Some)	Ja (Yes)	In total
Aldri (Never)	0	0	0	0,0%
Sjeldnere enn 1 gang i måneden (Less than once a month)	2	1	0	9,7%
Mellom 1 gang i måneden og 1 gang i uken (Between once a month and once a week)	0	0	3	9,7%
Mellom 1 og 3 ganger i uken (Between once and thrice a week)	0	0	4	12,9%
Oftere enn 3 ganger i uken (More than thrice a week)	0	0	21	67,7%
In total	2	1	28	31

This table would suggest that there is some relationship between respondents that play multiplayer video games and respondents that believe video games have helped them become better at communicating in English. All respondents that play multiplayer video games more than once a month answered positively, while all respondents that answered negatively played multiplayer video games less than once a month. The one respondent that believed multiplayer video games had helped them develop their English communication a little also played less than once a month.

4.4.2 Discussion

Sub RQ3 seeks to answer if Norwegian upper secondary school students believe video games have helped them develop their communicative competence. Therefore, it is first and foremost interesting to consider the results presented in figure 20, where respondents were asked directly whether they believed video games had helped them develop their communicative competence. The results were very positive, with ninety percent of respondents confirming that they believed so. Only two respondents disagreed, while one respondent answered that video games might have helped some. Considering that “some” was an option, it is encouraging that ninety percent did not moderate their answers and appeared to agree wholeheartedly. If these results are representative for the larger population of upper secondary school students in Norway, it would show quite definitively that they believe video games have helped develop their CC.

The cross-reference table presented in table 3 also provides some additional depth, that might suggest that previous experience with multiplayer video games affect the respondents' attitudes, since all respondents that played multiplayer video games more than once a month had a positive disposition towards video games impact on their ability to communicate in English. One might speculate that this is due to the social aspect of multiplayer video games, which those respondents that seldom play multiplayer video games might not consider. This would certainly make sense considering the core principles of CLT presented in section 2.3.2, which state that meaningful and authentic communication is crucial to development of CC. The findings of Söbke and Bröker (2015) suggest that communication in multiplayer video games is as much due to players socializing as it is due to the inherent need for communication within the game itself. It is therefore possible that if all respondents had the same experience with multiplayer video games as those that played more than once a month, all respondents would agree that video games had helped them develop their CC. If that is true on a larger scale, we may assume that if the majority of Norwegian upper secondary school students play multiplayer video games, then they will also agree that DGBL may be beneficial for the development of communicative competence in English education.

The results presented in figure 19 show that among this sample of respondents, the three sources that had taught them the most English were outside the classroom. As already mentioned, it may be considered problematic if Norwegian upper secondary school students report that their formal English education is only the fourth most influential source of L2 learning. It is of course positive that students are exposed to and learn English outside the classroom, but one may argue that based on these findings Norwegian public English education needs to become more influential in some way. How that may be achieved requires a longer discussion and further research, but the findings presented in figure 16 suggest that Norwegian upper secondary school students believe video games should be used more in English education, with eighty-five percent of respondents in the present study either agreeing or strongly agreeing. Since few respondents reported much experience with video games being used as part of their previous education, it is logical to suggest that it may be considered a step in the right direction to expand the use of DGBL in EFL education.

4.5 MAIN RQ: ACCORDING TO DATA GATHERED FROM PARTICIPATING STUDENTS IN NORWEGIAN UPPER SECONDARY SCHOOL, HOW WELL SUITED IS DIGITAL GAME-BASED LEARNING TO COMMUNICATIVE LANGUAGE TEACHING?

Having discussed the three sub RQs separately, the next step is to consider what these findings mean for the main RQ. The discussion of the main RQ will be structured in three main parts, before a

final summary. First subsection 4.5.1 will discuss how the sub RQs help answer the main RQ, before subsection 4.5.2 discusses the DGBL in an intramural context versus an extramural context. Then lastly, section 4.5.3 will discuss practical implications that were observed during the study which may be relevant when considering the viability of DGBL in the classroom.

4.5.1 Discussing the sum of the sub RQs

All three sub RQs were formulated with the aim of eventually answering the main RQ. Initially, it is perhaps relevant to consider the relationship between sub RQ 2 and sub RQ 3. Briefly summarized, sub RQ 2 asks whether we see a relationship between participating respondents that play multiplayer video games and communicative competence, while sub RQ 3 asks whether participating respondents believe video games have helped them develop their communicative competence. The discussions presented in section 4.3.2 and 4.4.2 respectively find that there appears to be such a relationship, and respondents do indeed believe that video games have helped develop their CC. In addition, results presented in section 4.4.1 show that respondent who play specifically multiplayer video games agree stronger that video games develop CC, which might further indicate that the relationship researched in sub RQ 2 does indeed exist. In general, data on self-reported experiences and attitudinal data related to sub RQ 2 and sub RQ 3 show that most respondents have considerable extramural experience with video games, most respondents believe video games are beneficial to the development of CC and most respondents wish to see video games used in English education. All these factors would indicate that according to the students participating in this study, digital game-based learning is well suited to communicative language teaching and could be a very effective tool in the Norwegian upper secondary school English classroom. However, more research is required before any generalizations can be made regarding the broader population of Norwegian upper secondary school students.

While sub RQ 2 and sub RQ 3 were concerned with respondents' attitudes towards and experiences with video games, sub RQ 1 aimed to research how students in Norwegian upper secondary school communicate with each other while playing a multiplayer video game in an intramural context. A classroom experiment using the COTS video game *Among Us* was carried out, and the results showed that participants engaged in authentic communication and used a wide range of relevant sub-competences of CC while playing the game. It became evident that participants with previous experience with the game actively used a lingo developed specifically for the game, and section 4.2.2 therefore discussed whether this lingo may be considered problematic when considering the educational value of using the game in the classroom, and whether the same regards video game lingo at large. Though this lingo is perhaps not very beneficial to EFL learning, neither is it very detrimental, as it might be relevant in certain social situations.

The results clearly show that participants used discourse and functional competence the most while playing *Among Us*, which means *Among Us* might be a good tool for developing these sub-competences above others. A video game does not have to develop all sub-competences of CC to be considered well suited for CLT, and it is logical to think that different games might be best fitted to developing one or a few competences at a time. These results suggest that *Among Us* is well suited to developing discourse competence. *Keep Talking and Nobody Explodes*, which was used in the studies conducted by Hofmeyr (2020) and Dormer et al (2017) might be better suited to developing linguistic competences, for example. In sum, they become valuable tools that a teacher might use to fit the needs of their students. Respondents in the present study clearly show a desire to see video games used in their education, and as a few respondents wrote in their free text answers, even if the educational value is only equal to that of other methods, it might be worth using video games simply for the sake of variety and motivation. Based on the findings related to all three sub RQs, DGBL seems well suited to supplementing the already existing English education, if organised in ways that engage students and promote purposeful interaction among them.

4.5.2 Intramural versus extramural

The intramural element has already been discussed in extent throughout the previous sections, but it remains an essential talking point. As already mentioned, some previous research show that people who play video games in their spare time score higher on various English L2 aptitude tests, and the findings related to sub RQ 2 in the present study suggest that there is a relationship between playing video games as an extramural activity and self-reported ability to communicate in English. From a didactic standpoint this raises several complex questions: How does learning happen in this extramural context, how does it translate to learning in an intramural context, and how can teachers use this knowledge to achieve optimal results in the classroom?

With regards to the second question, this has already been discussed to some degree in section 4.2.2, as the classroom experiment attempted to discover whether participants in this study would communicate organically in an intramural context, which seemed to be the case to some degree. It is, however, natural to assume that some participants would engage more in discussions within the game had they played with friends at home. Because of this, even though the experiment showed that participants used several sub-competences of CC while playing *Among Us* in the classroom, the potential for developing CC might be even greater when played at home, and it might be impossible to fully recreate this in the classroom. Söbke and Bröker (2015) highlight how important socializing is to the way people communicate within video games, and considering this it is logical that a student playing at home with friends will socialise more than if playing with classmates at school. In this context it is also very interesting to consider the studies conducted by Steinkuehler and Williams in

2006 and Ducheneaut et al in 2007, where they discuss how multiplayer video games act as a “third places” for the players (as discussed in section 2.4.2). Briefly summarized, a “third place” is a location with high acceptance and a casual atmosphere. It is a home away from home, where people go to escape from everyday struggles. Common examples of traditional third places include cafés, bookstores, and bars. It is not unreasonable to suggest that if multiplayer video games indeed act as third places, then this might be part of the reason why there is a relationship between people who play multiplayer video games in their spare time and communicative competence in English. The casual and no-judgement setting of a third place might be an ideal arena for those who are less confident in their English to develop their communicative competence, especially since many multiplayer video games encourage players to cooperate, thereby providing the motivation that might be missing in other arenas. The classroom is not a third place, and as figure 18 showed in section 4.4.1, forty-eight percent of respondents in the present study find it difficult to speak English aloud in the classroom. Due to the presence of a teacher and other social factors, it might be difficult to recreate some of the no-pressure atmosphere that makes third places ideal for the development of communicative competence.

When considering how learning happens in an extramural context, there is another factor apart from third places and other social factors which might be equally important. One simple reason why those that play video games in their spare time show an aptitude for English might be the amount of time invested. The results of the questionnaire, visible in figure 11, show that seventy-six percent of respondents in the present study reporting playing video games often. The survey did not specify what constitutes as often, but for additional context figure 13 shows that sixty-eight percent of respondents report playing video games with other more than three times a week. It is not unreasonable to assume that a game session is at least a few hours long. Many that play video games as a hobby will probably spend much more time exposed to English within the context of a video game than they will spend in English class. There is simply not enough time available to replicate that amount of exposure within an intramural context.

The final question then remains, how can teachers use this knowledge to achieve optimal results in the classroom? Considering the social factors discussed and the time constraints in the classroom, it is necessary to adapt. While some learning might be achieved simply by making students play a suitable video game in the classroom, the potential appears far greater when a lesson is carefully tailored around the strengths and weaknesses of a video game. Since the intramural context might discourage some of the communication that is so beneficial within multiplayer video games, it might be necessary to find some additional motivation or alternative reason for the students to communicate. When considering the time constraints, it is perhaps most important to have a

thorough knowledge of the video game you wish to use. This way, one can ensure that the students spend as much time as possible engaged in the most beneficial parts of the game. Using *Among Us* as an example, the game might promote even more communication if students are given some kind of pre-exercise tasks before playing. It might also be wise to lengthen the discussion phase of the game, to make sure the time constraints do not hinder any authentic communication. This would also make sense because the play phase of the game allows for no communication, which is not ideal from a didactic viewpoint. It might also be beneficial to find some way to ensure anonymity, as this might encourage more students to partake in discussion. In essence, even though there is a relationship between video games as an extramural activity and English L2 aptitude, there are several reasons why this does not necessarily translate to video games being an effective tool for communicative language teaching. However, there is a multitude of ways video games might be adapted for use in the classroom. Both studies conducted by Calvo-Ferrer and Belda-Medina (2021) and Ranalli (2008) found that supplementary materials greatly increased the potential for learning when using DGBL, and the findings of this study support that conclusion.

4.5.3 Practical implications

When discussing how well suited DGBL is to CLT it is important to weigh the benefits against the challenges. As mentioned, field notes were recorded during the classroom experiment, and the experiment highlighted several practical implications that are worth considering. The main points of interest will be discussed in order. First, initiating the experiment will be discussed, before the focus is moved to the completion of the experiment. Then, the practical solutions available to teachers is discussed, before finally the time aspect already mentioned in the previous section will be expanded on.

In the process of initiating the experiment there was made several interesting observations. As already explained, *Among Us* was chosen for this experiment for several reasons, one of them being its availability. Since the game is free and available on mobile devices, all participants would be able to download it quickly on their private devices, and the hope was that this would reduce the time needed to initiate the experiment. Despite this, the process was not problem free. There was usually little problem related to downloading the game, but several participants encountered problems after starting the game. The game requires all players to create a free account, which might be done quite quickly when launching the game for the first time. As part of the registration players must enter their age, to ensure all players are older than the required threshold of three years, which should in theory not be an issue. However, several participants did not read the age prompt and simply hit enter, which entered their date of birth as the current date and in turn prevented them from playing the game. This could be fixed by using a credit card to prove their age, which proved

time consuming. Another issue that appeared during the experiment was connectivity issues. Randomly a participant could lose connection to the game session for no apparent reason at all, which happened on five separate occasions. They would then have to sit out the current game session and join the game again before the next one. In the big picture this was not a big issue, but some participants showed clear frustration when they were disconnected. Both these issues are examples of technical issues that might appear when using video games in the classroom. These issues take time to solve, which will be discussed further later in this section, but they also require some technical ability and know-how to solve. This is one more reason why it is important for a teacher that wants to use DGBL to know the game they wish to use beforehand. Ideally, one should be aware of common issues and how to fix them. It would also be practical to have a clear plan for how all students will participate, and to have a backup plan if students for example have issues with their device. In the experiment for this thesis, one participant borrowed a mobile device from the researcher because their own device was out of power. But, even if technical issues are quickly solved, they can still cause frustration that might demotivate both teachers and students alike. There was also a cause for frustration among some participants related to the completion of the experiment.

It was very evident that the participants in the experiment had very varying previous experience with video games. Quite a few participants had experience with Among Us specifically from before. Regarding those who had not played Among Us before, most participants still had sufficient experience with video games to learn quickly. They knew enough to be able to pick the game up and participate without much issue. However, some participants with less experience struggled. With some help most still managed to take part in the game and seemed to enjoy themselves, except for one student. In one class, a student eventually stood up from their desk and left the classroom. After speaking to them it became evident that they had little to no experience with video games and did not possess the necessary understanding of English to comprehend the instructions within the game, which in turn led to the participant becoming frustrated, understandably enough. The student was excused from class and did not participate in the remainder of the experiment. While this was an isolated incident, it clearly shows that using video games in the classroom requires a certain prerequisite capability that not all students might have. In this instance it was the all-English game environment that became hard to navigate for a student who struggled with written English, but similar issues might also arise when a student does not have the practical knowledge. If a game that requires more fine mechanics had been chosen, many students might have struggled to simply control the game. Among Us is relatively accessible and easy to play, and more participants might have opted to leave the experiment if a more difficult game had been chosen.

There are some concerns connected to the practical solutions available to Norwegian upper secondary school teachers. Do most Norwegian upper secondary school have a good framework available to make DGBL available for its teachers? For example, if a teacher wishes to purchase fifteen licences of a video game for use in DGBL activity, is there a framework in place that allows these licenses to be registered to the school, or do they have to be registered to private individuals? If they are registered to the school other teachers might use the same licences later, but if no such framework exists and the licences must be registered to private individuals, it will become more difficult for other teachers at the same school to benefit from the same licenses. Ideally, it might even be possible to share licenses across schools within the same district. Then there is also the question of hardware, such as computers powerful enough to play more demanding video games. Research into the practical solutions currently available would be very interesting. Without this research it is hard to make good assumptions, but from my own experience most Norwegian upper secondary school teachers lack the practical framework necessary to make DGBL easily available. It is fully possible but requires more effort than if a proper framework had existed.

Finally, it is worth expanding on the time factor. When discussing the viability to DGBL to CLT, it is important to consider whether the potential for learning matches the time invested. In the study for this thesis, it usually took less than fifteen minutes to initiate the experiment, but in one of the four classes it took thirty-two minutes from the participants were asked to download the game until all participants managed to join the game lobby and the game could start. In that instance, a few participants struggled with the age barrier and some other minor technical issues. Most other participants in the same class were ready to play within ten minutes, meaning they had to wait more than twenty minutes for the game session to begin. In general participants were patient, but there were occasional exclamations of frustration. Thirty-two minutes is a long time to spend simply initiating an activity, and while it on average took significantly less time in the other three instances, it is a valid reason for concern when evaluating DGBL. Of course, most other activities apart from DGBL also take some time to initiate, though the average most likely is much shorter than thirty minutes, and perhaps also shorter than the fifteen minutes averaged in the other three instances.

The time it might take to initiate a DGBL activity is only one example of how the time factor is important. In this experiment, the researcher had previous experience with Among Us and therefore did not have to spend much time learning the game. Should a teacher with no experience with the game perform a similar activity, it would be recommended that they first get to know the game, which will take a varying amount of time depending on how quickly they learn how to play. As mentioned Among Us is relatively accessible, and some video games might require a significant amount of time invested by the teacher before an activity might be carried out, or even planned.

Research into hardware requirements and licences might also be required. Depending on the video game chosen, it might take some time to acquire the licenses, and funding if necessary.

When considering all these practical implications, it is not hard to understand why as many as thirty-nine percent of respondent in the present study report that they have never used video games in their education, with as many as seventy-five percent reporting that they have used video games less than once a year. Most likely, DGBL would already have been used more often had there been fewer practical obstacles. My impression is that a lot of teachers in Norwegian upper secondary school are very curious and positive towards DGBL, but they do not feel they have the necessary knowledge nor time to use it. If some of the practical issues are solved and DGBL becomes more easily available to teachers, then it would be easier to argue that DGBL is very well suited to CLT.

5 CONCLUSION

5.1 CHAPTER OVERVIEW

Initially, section 5.2 will provide a summary of the study, before section 5.3 will attempt to answer the research questions based on the discussions in chapter 4. Finally, section 5.4 will highlight some suggestions for further research.

5.2 SUMMARY

The present study aimed to collect data related to the use of video games in Norwegian upper secondary school, with the aim of investigating how well-suited digital game-based learning is to communicative language teaching. Chapter 2: Theoretical background highlights previous research on DGBL which lay the foundation for the eventual discussion, as well as a theoretical foundation related to communicative language teaching. Three sub RQs were formulated to help answer the main RQ, and an approach to answering these RQs was detailed in chapter 3: Methodology. A classroom experiment was carried out to collect data on how students communicate with each other in English, while a questionnaire was used to collect both data on self-reported experiences with video games and attitudinal data towards the educational potential of video games. These data were gathered from a sample of thirty-six voluntary Norwegian upper secondary school students, divided between four classes.

5.3 RESEARCH QUESTIONS

This section will summarize the discussions and attempt to draw conclusions related to each RQ in the order they appear in chapter 4, finishing with the main RQ.

5.3.1 Sub RQ 1: How do participating students in Norwegian upper secondary school use English to communicate in a multiplayer video game in an intramural context?

Section 3.3 details how a classroom experiment was planned with the aim of recording authentic communication between Norwegian upper secondary school students while playing video games in an intramural context. Communication was recorded by screen capture, and subsequently analysed using a limited coding scheme (as explained in section 3.3.3). The results show that the participating students engaged in authentic communication and utilized several sub-competences of communicative competence while playing the game. Despite the intramural context, participants

were willing to socialize and have fun with the game. It was interesting to note that some participants used a lingo which seemed unique to the game being used. The use of this lingo may be accredited to previous experience with the game, and its presence might make it more difficult for inexperienced players to partake in discussions. Despite this, the results may be considered positive, as participants communicated in a way that makes this activity suitable for communicative language teaching.

5.3.2 Sub RQ 2: According to data gathered from participating students, do we see a relationship between students' reported extramural engagement in multiplayer video games and evidence of communicative competence in English?

Section 3.4 details the creation of a questionnaire, designed to collect both data on self-reported experiences with and attitudinal data towards video games, both in education and in general. Data on self-reported experiences were particularly interesting to determine whether we see the kind of relationship in question among the respondents of the survey. The results (as presented in section 4.3.1) seemingly show a positive relationship, as respondents who play multiplayer video games report a higher confidence in their own ability to communicate in English. It is also worth to note that all respondents had at least some previous experience with video games in their life, while almost all respondents played video games in their spare time during the period the study was conducted. These findings are similar to the findings of several studies outlined in chapter 2, which also suggest that such a positive relationship might exist.

5.3.3 Sub RQ 3: According to data gathered from participating students, to what extent do students in Norwegian upper secondary school believe video games have helped them develop their communicative competence?

As already mentioned above, the questionnaire (see section 3.4 for more detail) used in this study collected several types of data with the aim of answering the RQs. Data on self-reported experiences showed that respondents had little experience with video games being used in their education but reported that they thought it should be used more. As presented in 4.4.1, results show that respondents are in general very positive towards the potential benefits of playing video games on communicative competence. Most respondents that played video games reported that they believed it had help them become better at communicating. These findings seem to support the findings of previous studies, as detailed in chapter 2.

5.3.4 Main RQ: According to data gathered from participating students in Norwegian upper secondary school, how well suited is Digital Game-Based Learning to communicative language teaching?

As the data related to sub RQ 2 and 3 show (presented in section 4.3.1 and 4.4.1 respectively), participating students in this study are in general positive towards the use of DGBL in the classroom. Almost all respondents played video games in their spare time, which is cause for optimism considering the skills required to play video games. It stands to reason that the more upper secondary school students that play video games in their spare time, the easier and more beneficial it will be to bring video games into the classroom. In general, the respondents rate the learning potential of video games quite highly, and particularly related to communication. Most respondents that played video games in their spare time believed it had help them develop their ability to communicate in English, and a large majority wanted video games to be used more in their education than they had experienced in the past.

Results of the classroom experiment associated with sub RQ 1 (presented in section 4.2.1) suggest the video game *Among Us*, and in extent DGBL, may be well suited to CLT. Foremost, participants produced a large amount of authentic communication during the experiment. From a CLT standpoint (as discussed in section 2.3), this is highly beneficial for the development of CC. Though the amount of L2 output varied greatly among participants, all participants were exposed to large amount of L2 input. From the communication that was recorded and analysed, it was also clear that participants used a wide range of sub competences of CC while playing *Among Us*. The argumentative nature of the discussions in the game appears particularly well suited to developing discourse competence. While participants used other competences as well, it is likely that other games might be more suited for the development of linguistic competences, for example.

When considering the intramural element, EFL learning might be greater when playing video games extramurally rather than intramurally. This is most likely due to the casual and judgement free atmosphere, and the high degree of anonymity, in which communication can happen when playing at home. It is hard to replicate similar conditions in the classroom. But in the experiment conducted for this study, participants still seemed to communicate with a high degree of freedom. An example of this might be how participants socialized with each other in English on several occasions throughout the experiment. From a CLT standpoint, socializing is authentic communication, and it is very positive for the development of CC. Socializing might be a large reason why we see a beneficial relationship between students who play video games in their spare time and EFL proficiency.

Regarding practical implications, using DGBL properly may be challenging in several ways. Most important is perhaps the time factor. The experiment in this study showed how time consuming it can be to get all students in a class into a game and ready to play. The experiment also required extensive planning, which would be even more time consuming for teachers with little previous knowledge of video games. And as previous research suggests, DGBL might be more beneficial when students are given supplementary material to aid them while playing. One should also not ignore the fact that not all students are adept with video games, and therefore might struggle to play the game, which in turn could diminish the learning potential of the lesson. There also appears to be little help available for teachers who wish to begin using video games in their lessons, and research into practical solutions could be very beneficial.

In conclusion, the findings of this study suggest that Digital Game-Based Learning is well-suited to communicative language teaching. The results reveal some concerns regarding time consumption and practicality, but the potential benefits appear to outweigh these concerns. If these findings are considered representative for the larger population, Norwegian upper secondary school students communicate freely and authentically while playing video games in the classroom and they themselves report positive attitudes both towards the use of video games in education and their learning potential. More research is required, but these results are nonetheless cause for optimism.

5.4 FUTURE RESEARCH

The research for and the completion of this study has highlighted the need for more data on several topics related to DGBL. While all data related to DGBL would be of use, I have five specific suggestions regarding future studies which I believe could provide very interesting data that might be of great use to anyone researching DGBL in Norwegian upper secondary school.

First and foremost, it would be very interesting to study how Norwegian upper secondary school students communicate in video games if they do not have the option of switching to Norwegian. As mentioned earlier, during the experiment for this study participants would at times switch to oral Norwegian rather than written English communication, especially during time sensitive situations. Always having this option, even though they were discouraged to use it, might negatively impact the learning potential of the lesson. The respondents of the survey reported that the all-English environment within the game “tricked” them into speaking and thinking in English. Sometimes, when students struggle to make themselves understood in English, a breakdown in communication might occur. If they can switch to Norwegian, they might do so. But, if they attempt to repair said breakdown using English, they might learn a lot. It might therefore be interesting to create a classroom experiment with an all-English environment.

To do so, one could perhaps establish a cooperative study with a researcher abroad. If one class of Norwegian students and one class from another country with English as an L2 play a video game together online, how does that change the pattern of communication? It is not unlikely that this will result in more communication breakdowns, but it might still lead to a greater amount of L2 output due to the need to fix these breakdowns. It is also interesting to consider that many respondents in the present study reported that they find it easier to speak English with someone they know do not speak Norwegian. Playing online with foreigners might also provide an additional sense of anonymity, which could encourage even more discussion. It would be possible to complete such an experiment using *Among Us* much in the same way as in the present study, but there is a wealth of COTS video games which might be used as well. It could be very interesting to use a game where students must work in pairs, and couple students into pairs with differing language origins. Neither part would have the option of switching to their mother tongue, and this would provide an all-English environment. If students only communicate with their partner orally, this might also provide a sense of anonymity. Ideally, this might also encourage socializing. There are many hypothetical benefits to this kind of project, but empirical data is required.

Secondly, the present study analysed how Norwegian upper secondary school students communicate while playing video games intramurally, but there exists little similar data on how they communicate while playing extramurally. In the early stages of this study, it was intended to analyse extramural communication. Students that took part in the study were encouraged to screenshot chat logs while playing at home and send these to the researcher for analysis. To ensure privacy concerns, students would have to collect consent from all other players present when taking the screenshot. There might be several reasons why, but no screenshots were submitted for analysis, and this part of the study could therefore not be completed. However, it would be very interesting to have this kind of data, to provide some kind of comparison to the data gathered intramurally during this study. A study which records and analyses extramural communication, or one which records and compares both extramural and intramural would therefore provide important data.

A third potential area of further study is how gender influences the viability of DGBL in the classroom. In the present study gender was not accounted for, but most respondents were male, and it would be interesting to compare these results with a similar study using a sample of mostly female respondents. Data from a classroom experiment like this one could provide valuable insight into how gender might affect the culture for discussion in such a classroom situation. If the experiment was completed in a class of mostly female participants, results might be slightly different.

Further, a fourth potential object of study is the practical solutions available to teachers in Norwegian upper secondary school. In my own experience, the schools I have visited have had no framework for the use of DGBL in place, and video game licenses have been purchased by individual teachers rather than the school itself. However, this most likely varies greatly from school to school. A few Norwegian upper secondary schools have dedicated game pedagogues, and it would be very interesting to study and compare how DGBL is used at these schools compared to schools that do not have a dedicated game pedagogue. To the best of my knowledge, this position has not yet become common and only a select few schools have it. It is likely that the framework in place on various school will vary greatly depending on the interest of the staff at each school. I am under the impression that if a framework for the use of DGBL exists at school without a game pedagogue, it will be due to the initiative of individual teachers rather than the school administration. Either way, if DGBL will ever be adopted at scale into Norwegian upper secondary school, teachers need practical solutions that are ready and available to them. Therefore, data on what solutions exists, how simple and effective they are, and how common they are could be very beneficial to the process of implementing such practical solutions across Norwegian schools.

Lastly, this study was completed with a small sample of students, and more research is necessary before any safe generalisations might be made regarding the Norwegian population of upper secondary schools at large. A similar study at a larger scale could be very beneficial. Like in this study, Sub RQ 1 and 2 may be researched using a questionnaire, and it might therefore be possible to collect data from a large sample size without too much difficulty. The challenge is getting enough voluntary participants, but if the questionnaire is simple enough that it might be completed rather quickly, it should be achievable. However, gathering data from a classroom experiment is more challenging to do at a larger scale, for several reasons. It is more time consuming, and it therefore means more work for the researcher, and it might also be harder to find voluntary participants. However, it might be possible to slightly simplify the classroom experiment used in this study. In the present study the researcher was physically present for the classroom experiment, but it should be possible to complete the experiment remotely. The researcher can create and run the game sessions and record written communication remotely. The issue with doing the experiment remotely, however, is that the researcher is then unable to assist students which need help with the game, and the researcher is unable to control whether the participants switch to oral communication. This might be mitigated if teachers also volunteer to help, so that they might control the situation in the classroom while the researcher focuses on the experiment itself. Whichever way the experiments is completed, more data of this kind would be very positive, and ideally from a larger sample size.

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APPENDIX A

NSD CONFIRMATION

Below is a copy of the confirmation from NSD stating that they have approved the collection of sensitive information for this study.



[Meldeskjema](#) / [Considering Communicative Competence in Video Games](#) / Vurdering

Vurdering av behandling av personopplysninger

Referansenummer 449287	Vurderingstype Standard	Dato 10.01.2023
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Prosjekttittel
Considering Communicative Competence in Video Games

Behandlingsansvarlig institusjon
Universitetet i Bergen / Det humanistiske fakultet / Institutt for fremmedspråk

Prosjektansvarlig
Sigrid Johanna Håheim Ørevik

Student
Øyvind Hatleset

Prosjektperiode
13.12.2021 - 28.02.2023

Kategorier personopplysninger
Alminnelige

Lovlig grunnlag
Samtykke (Personvernforordningen art. 6 nr. 1 bokstav a)

Behandlingen av personopplysningene er lovlig så fremt den gjennomføres som oppgitt i meldeskjemaet. Det lovlige grunnlaget gjelder til 28.02.2023.

[Meldeskjema](#)

Kommentar
Personverntjenester har vurdert endringen i prosjektslutt dato.

Vi har nå registrert 28.02.2023 som ny slutt dato for behandling av personopplysninger.

Vi vil følge opp ved ny planlagt avslutning for å avklare om behandlingen av personopplysningene er avsluttet.

Lykke til videre med prosjektet!

APPENDIX B

NSD LETTER OF CONSENT

Below is the letter of consent that was read and signed by every participant in the study.

Vil du delta i forskningsprosjektet

Considering Communicative Competence in Video Games

Dette er et spørsmål til deg om å delta i et forskningsprosjekt hvor formålet er å undersøke kommunikasjon i videospill. I dette skrivet gir vi deg informasjon om målene for prosjektet og hva deltakelse vil innebære for deg.

Formål

Formålet med denne studien er å undersøke hvorvidt videospill er egnet til å utvikle evnen til kommunikasjon hos elever i videregående skole. Blant andre metoder, undersøker studien dette ved å gi elever muligheten til å rapportere deres egne meninger i en spørreundersøkelse og ved å analysere kommunikasjon i samtalelogger.

Denne studien er en del av en engelsk masteroppgave ved universitetet i Bergen, og for øyeblikket lyder problemstillingen til oppgaven slik: I følge data innhentet fra deltakende elever, ser vi tegn til at videospill kan bidra til økt kommunikativ kompetanse?

Jeg ønsker også å benytte resultatene av denne studien til å tilpasse min egen tilnærming til engelskundervisning på videregående.

Hvem er ansvarlig for forskningsprosjektet?

Universitetet i Bergen er ansvarlig for prosjektet.

Hvorfor får du spørsmål om å delta?

Du får spørsmål om å delta fordi du er elev ved videregående i Norge, og dermed en del av målgruppen som studien ønsker å undersøke. Din lærer/videregående har gitt meg muligheten til å tilby din klasse å delta i studien.

Hva innebærer det for deg å delta?

Hvis du velger å delta i studien, består studien av tre deler. Du kan velge å ta delta i en eller flere deler etter eget ønske.

Del 1 av studien ønsker å samle inn skjermbilder av samtalelogger i videospill på nett. I del 1 vil alle elevene i klassen som ønsker ta del i en omgang av spillet "Among Us", et spill hvor kommunikasjon er viktig. Skjermbilder vil bli tatt underveis i spillet slik at de skriftlige samtalene innad i spillet senere kan analyseres. Alt av brukernavn og all annen

info som kan brukes til å gjenkjenne enkeltpersoner vil bli erstattet med pseudonymer.

Del 2 innebærer at du fyller ut et spørreskjema. Det tar ca. 15 minutter å gjennomføre. Spørreskjemaet inneholder ulike spørsmål om hvordan elever i videregående har lært å snakke engelsk. Dine svar blir registrert elektronisk og anonymisert fortløpende.

Del 3 av studien innebærer at du, når du selv ønsker, har muligheten til å sende inn skjermbilder av samtalelogger som du selv har tatt på fritiden. Før du tar et skjermbilde av en samtale må du informere om dette til eventuelle medspillere og inkludere dette i selve skjermbildet. En samtalelogg innad i et videospill er privat kommunikasjon, og det er derfor nødvendig å informere om det før du tar et skjermbilde. Kun skjermbilder med samtykke inkludert i bildet vil bli inkludert i den ferdige studien.

Det vil si at selve bildet vil være synlig i oppgaven, men at alt av brukernavn og all annen info som kan brukes til å gjenkjenne enkeltpersoner vil bli erstattet med pseudonymer, som for eksempel

«Bruker 3». I skjermbilder hvor samtaleloggen utgjør kun en liten del av bildet vil bildet bli beskåret slik at kun selve loggen er synlig. Krav for skjermbilder er dermed et synlig samtykke og at samtalene som er avbildet foregår på engelsk. Skjermbildene kan sendes på epost til en adresse som vil bli delt med alle som ønsker å delta i del 3. Om du velger å delta er det fortsatt helt frivillig å faktisk sende inn skjermbilder.

Det er frivillig å delta

Det er frivillig å delta i prosjektet. Hvis du velger å delta, kan du når som helst trekke samtykket tilbake uten å oppgi noen grunn. Alle dine personopplysninger vil da bli slettet. Det vil ikke ha noen negative konsekvenser for deg hvis du ikke vil delta eller senere velger å trekke deg.

De som velger å ikke delta i undersøkelsen vil få et alternativt opplegg denne timen. Alle dine svar er helt anonyme og vil ikke bli delt med din skole/lærer.

Ditt personvern – hvordan vi oppbevarer og bruker dine opplysninger

Vi vil bare bruke opplysningene om deg til formålene vi har fortalt om i dette skrevet. Vi behandler opplysningene konfidensielt og i samsvar med personvernregelverket.

- Kun masterstudenten og veileder for masterstudien ved universitetet vil ha tilgang til innsamlet informasjon. Informasjonen blir ivarettatt av masterstudenten.
- Navnet på skolen og detaljer om klassen behandles også som konfidensielt. Dine svar i spørreundersøkelsen vil bli anonymisert ved å tilknyttes en tilfeldig kode, og vil refereres til i den ferdige studien som svarene til «en elev ved en videregående skole i Vestland».
- Skjermbilder av samtalelogger vil bli redigert slik at kun kommunikasjon er synlig. Alt som kan brukes til å gjenkjenne personer vil bli endret og anonymisert. Brukernavn som er synlig i skjermbildene vil erstattes med for eksempel «Anonym bruker 1» og så videre.

Hva skjer med opplysningene dine når vi avslutter forskningsprosjektet?

Opplysningene anonymiseres fortløpende inntil prosjektet avsluttes/oppgaven er godkjent, noe som etter planen er våren 2022. Etter dette vil innsamlet informasjon kun finnes i

anonymisert tilstand, og alt annet vil bli slettet.

Hva gir oss rett til å behandle personopplysninger om deg?

Vi behandler opplysninger om deg basert på ditt samtykke.

På oppdrag fra Universitetet i Bergen har NSD – Norsk senter for forskningsdata AS vurdert at behandlingen av personopplysninger i dette prosjektet er i samsvar med personvernregelverket.

Dine rettigheter

Så lenge du kan identifiseres i datamaterialet, har du rett til:

- innsyn i hvilke opplysninger vi behandler om deg, og å få utlevert en kopi av opplysningene
- å få rettet opplysninger om deg som er feil eller misvisende
- å få slettet personopplysninger om deg
- å sende klage til Datatilsynet om behandlingen av dine personopplysninger

Hvis du har spørsmål til studien, eller ønsker å vite mer om eller benytte deg av dine rettigheter, ta kontakt med:

- Ansvarlig student Øyvind Hatleset på epost (fud008@uib.no) eller på telefon: +47 46 94 40 11
- Universitetet i Bergen ved prosjektansvarlig Sigrud Ørevik på epost (sigrud.orevik@uib.no) eller på telefon: +47 92 21 69 34
- Vårt personvernombud: Janecke Helene Veim på epost (Janecke.Veim@uib.no) eller på telefon: 55 58 20 29

Hvis du har spørsmål knyttet til NSD sin vurdering av prosjektet, kan du ta kontakt med:

- NSD – Norsk senter for forskningsdata AS på epost (personverntjenester@nsd.no) eller på telefon: 53 21 15 00.

Med vennlig hilsen

Sigrud Ørevik
(Forsker/veileder)

Øyvind Hatleset
(Masterstudent)

Samtykkeerklæring

Jeg har mottatt og forstått informasjon om prosjektet *Considering Communicative Competence in Video Games*, og har fått anledning til å stille spørsmål. Jeg samtykker til:

- å delta i del 1: spilløkt med skjermbilde innsamling
- å delta i del 2: spørreskjema

å delta i del 3: frivillig innsending av skjermbilder

Jeg samtykker til at mine opplysninger behandles frem til prosjektet er avsluttet

(Signert av prosjektdeltaker, dato)

APPENDIX C

SCREENSHOT ANALYSIS DOCUMENT

This document contains every screenshot used in this study, along with a short description of the screenshot and an overview of which categories occur in the screenshot.

Screenshot #1, session 1		Image description	Categories in image	Sum
	<p>In the image, we see four different players interacting. Coral exclaims, most likely in response to something that has been said previously. Unrelated to that, Pink then accuses Green of being the impostor, without providing argumentation. Green responds not by defending himself, but by arguing the innocence of another player: Brown. Brown writes self report, which suggests that Brown believes the player that reported the dead body is the killer. The player that reported the body is Grey, which means Brown is shifting the blame away from Green. This may or may not be in response to Green just having defended Brown.</p>	Argumentation	1	
		Accusation	3	
		Response	2	
		Initiation	1	
		Expletives	1	
Screenshot #2, session 1		Image description	Categories in image	Sum
	<p>In this image, four different players are interacting. Green accuses Grey of being the impostor, to which two other players agree in response. Brown, who Green defended in the previous image, has here chosen to side with Green. Ash asks for clarification, most likely because Green used an alternative spelling of Grey's username, which may have confused Ash.</p>	Accusation	3	
		Response	3	
		Initiation	1	
		Clarification Request	1	
		Reformulation	1	

APPENDIX D

ORIGINAL NORWEGIAN QUESTIONNAIRE

Below is the complete questionnaire as it was presented to respondents in the present study. An English translation is provided afterwards as appendix E.

Ved å trykke **NESTE** bekrefter du at du har fått utlevert et samtykkeskriv og at du har lest og forstått samtykkeskrivet, samt at du har signert samtykkeskrivet. Om du ikke har fått utlevert et samtykkeskriv, vennligst ta kontakt med masterstudenten.

Din deltakelse i denne spørreundersøkelsen er helt frivillig, og dine svar er konfidensielle.

Velkommen, og takk for at du har valgt å delta!

Denne korte spørreundersøkelsen tar rundt 15 minutter å gjennomføre, og du vil få ulike typer spørsmål. Fritt svar betyr at spørsmålet skal besvares ved at du skriver et svar med egne setninger. Flervalg betyr at du får svaralternativer du kan velge mellom. Påstand betyr at du skal indikere hvor enig du er i selve påstanden.

Denne spørreundersøkelsen ønsker å undersøke hvordan elever i videregående skole utvikler **kommunikativ kompetanse** i engelskfaget.

Før spørsmålene er det hensiktsmessig å kort forklare hva kommunikativ kompetanse er.

Kommunikativ kompetanse er evnen til å kommunisere. Det vil si å skape mening med språk i ulike situasjoner, slik at en både forstår andre og selv blir forstått. Kommunikativ kompetanse blir kalt Communicative Competence på engelsk, og er en viktig del av engelskfaget. Evnen til å kommunisere er en stor del av læreplanen, og hvorvidt en elev kan kommunisere godt på engelsk er derfor noe lærere ser etter når de skal sette karakter i engelskfaget.

Første spørsmål er en påstand. Lykke til!

Påstand: Jeg har forstått hva kommunikativ kompetanse er.

- (1) Veldig uenig (Jeg har ikke forstått kommunikativ kompetanse)
- (2) Litt uenig
- (3) Usikker
- (4) Litt enig
- (5) Veldig enig (Jeg er sikker på at jeg har forstått kommunikativ kompetanse)

Du svarte at du ikke har forstått kommunikativ kompetanse, og her er derfor noen eksempler som kanskje kan hjelpe deg.

Her er en kort repetisjon fra introduksjonen.

Kommunikativ kompetanse er evnen til å kommunisere. Det vil si å skape mening med språk i ulike situasjoner, slik at en både forstår andre og selv blir forstått. Kommunikativ kompetanse blir kalt Communicative Competence på engelsk, og er en viktig del av engelskfaget. Evnen til å kommunisere er en stor del av læreplanen, og hvorvidt en elev kan kommunisere godt på engelsk er derfor noe lærere ser etter når de skal sette karakter i engelskfaget.

Kommunikativ kompetanse er en kombinasjon av flere forskjellige evner som hjelper oss å kommunisere. For eksempel så hjelper et stort vokabular oss å kommunisere ved å gi oss ordene vi trenger for å uttrykke oss. Om du vil si at du er sulten på engelsk, så er det enklest om du kan ordet "hungry". Grammatikk hjelper oss også å kommunisere, ettersom riktig grammatikk er viktig for at vi skal bli forstått.

Et annet eksempel er hvordan sosiale kunnskaper hjelper oss å kommunisere. Vi vet når vi burde si takk, og når vi burde beklage oss. Når vi skal spør om noe, så vet vi at om vi sier "please" og spør på en vennlig måte, så er sjansen større for å få et positivt svar. Alt dette er eksempler på sosiale kunnskaper.

Et siste eksempel er hvordan kunnskap om kulturer kan være viktige for kommunikasjon. Ting kan bli forstått på ulike måter i ulike kulturer. Et enkelt eksempel er hvordan vi snakker om tid. I Norge er halv åtte klokken 19:30, men i Irland og deler av England så vil "half eight" bli forstått som klokken 20:30, ettersom de tenker at "half eight" betyr "half past eight". En slik enkel forskjell kan fort føre til store misforståelser.

Forhåpentligvis har dette hjulpet deg å forstå kommunikativ kompetanse. Du kan nå gå videre.

Påstand: Jeg er flink til å kommunisere på engelsk.

- (1) Veldig uenig
- (2) Litt uenig
- (3) Verken uenig eller enig
- (4) Litt enig
- (5) Veldig enig

Påstand: Jeg så ikke på engelsk film og TV i oppveksten.

- (1) Veldig uenig
- (2) Litt uenig
- (3) Verken uenig eller enig
- (4) Litt enig
- (5) Veldig enig

Påstand: Jeg spilte mye videospill på engelsk i oppveksten.

- (1) Veldig uenig
- (2) Litt uenig
- (3) Verken uenig eller enig
- (4) Litt enig
- (5) Veldig enig

Påstand: Jeg leste mye engelsk i oppveksten. (For eksempel i bøker eller på internett)

- (1) Veldig uenig
- (2) Litt uenig
- (3) Verken uenig eller enig
- (4) Litt enig
- (5) Veldig enig

Flervalg: Av valgene under, hvor føler du at du har lært mest engelsk? (Du kan velge flere alternativer)

- (1) Engelskundervisning på skolen
- (4) Foreldrene mine
- (2) Vennene mine (Ikke via internettet)
- (3) Film, TV og serier
- (7) Bøker og lesing
- (5) Videospill (Både offline og online)
- (6) Internettet (For eksempel nettsider og chattetjenester. Ikke film, serier og spill)
- (8) Vet ikke

Flervalg: Av valgene under, hvor føler du at du har lært minst engelsk? (Du kan velge flere alternativer)

- (1) Engelskundervisning på skolen
- (2) Foreldrene mine
- (3) Vennene mine (Ikke via internettet)
- (4) Film, TV og serier
- (5) Bøker og lesing
- (6) Videospill (Både offline og online)
- (7) Internettet (For eksempel nettsider og chattetjenester. Ikke film, serier og spill)
- (8) Vet ikke

Flervalg: I gjennomsnitt hvor mye bruker du engelsk på fritiden?

- (1) Mindre enn 1 time i uken
- (2) Mellom 1 og 3 timer i uken
- (4) Mellom 3 og 6 timer i uken
- (3) Mer enn 6 timer i uken
- (5) Vet ikke

Fritt svar: I hvilken sammenheng bruker du engelsk mest på fritiden, og hvor mye?

De følgende spørsmålene gjelder bruken av videospill og film og TV i undervisning. Med "engelskundervisningen din" menes all engelskundervisningen du har hatt både på videregående og på ungdomsskolen.

Flervalg: Hvor ofte har film og TV blitt brukt i engelskundervisningen din?

- (1) Aldri (Jeg har ikke opplevd at det brukes i undervisningen)
- (2) Sjelden (En gang i året eller mindre)
- (3) Av og til (Mellom en gang i året og en gang i halvåret)
- (4) Regelmessig (Mellom en gang i halvåret og en gang i måneden)
- (5) Ofte (En til flere ganger i måneden)

Flervalg: Hvor ofte har videospill blitt brukt i engelskundervisningen din?

- (1) Aldri (Jeg har ikke opplevd at det brukes i undervisningen)
- (2) Sjelden (En gang i året eller mindre)

- (3) Av og til (Mellom en gang i året og en gang i halvåret)
- (4) Regelmessig (Mellom en gang i halvåret og en gang i måneden)
- (5) Ofte (En til flere ganger i måneden)

Påstand: Jeg synes engelsk film og TV burde brukes i engelskundervisningen.

- (1) Veldig uenig
- (2) Litt uenig
- (3) Verken uenig eller enig
- (4) Litt enig
- (5) Veldig enig

Påstand: Jeg synes videospill på engelsk burde brukes i engelskundervisningen.

- (1) Veldig uenig
- (2) Litt uenig
- (3) Verken uenig eller enig
- (4) Litt enig
- (5) Veldig enig

Fritt svar: Grunngi svarene dine på påstandene ovenfor.

Påstand: Jeg synes det er enkelt å snakke engelsk med noen jeg vet kan norsk.

- (1) Veldig uenig
- (2) Litt uenig
- (3) Verken uenig eller enig
- (4) Litt enig
- (5) Veldig enig

Påstand: Jeg synes det er vanskelig å snakke engelsk høyt i klassen.

- (1) Veldig uenig
- (2) Litt uenig
- (3) Verken uenig eller enig
- (4) Litt enig
- (5) Veldig enig

Påstand: Jeg synes det er enklere å snakke engelsk med noen som ikke kan snakke norsk.

- (1) Veldig uenig
- (2) Litt uenig
- (3) Verken uenig eller enig
- (4) Litt enig
- (5) Veldig enig

Fritt svar: Du svarte at du synes det er enklere å prate engelsk med noen som ikke kan norsk. Du er ikke alene om å føle dette. Hvorfor tror du det er slik?

Flervalg: Spiller du videospill på fritiden?

- (1) Aldri
- (2) Av og til
- (3) Ofte

Fritt svar: Hvilken type videospill spiller du mest?

Flervalg: I gjennomsnitt hvor ofte spiller du videospill sammen med andre spillere? (Både offline og online)

- (1) Aldri
- (2) Sjeldnere enn 1 gang i måneden
- (3) Mellom 1 gang i måneden og 1 gang i uken
- (4) Mellom 1 og 3 ganger i uken
- (5) Oftere enn 3 ganger i uken

Flervalg: Tror du selv at videospill har gjort deg flinkere til å kommunisere på engelsk?

- (1) Nei
- (2) Litt
- (3) Ja

**Fritt svar: Tror du videospill kan brukes til å lære å kommunisere på engelsk?
Hvorfor/hvorfor ikke?**

Du har nå kommet til siste spørsmål i undersøkelsen. Selv om spørsmålet kan være ganske vanskelig, så trenger du bare skrive det første du tenker. Alle dine tanker om dette temaet er av interesse. Her finnes det ingen feil svar, og du må gjerne komme med nye ideer og/eller kritikk av eksisterende metoder.

Fritt svar: Kommunikativ kompetanse er en viktig del av engelskundervisningen. Hva tror du er den beste måten for en elev å lærer seg å kommunisere på engelsk?

Du har nå fullført undersøkelsen. Du må trykke avslutt for å levere din besvarelse, og du kan lukke nettsiden når du har kommet til universitetet sine nettsider. Tusen takk for din deltakelse!

Om du vil si noe om undersøkelsen kan du gjøre dette nedenfor, men dette er helt frivillig.

Tilbakemelding til spørreundersøkelsen. Jeg setter pris på både kritikk og ros.

APPENDIX E

TRANSLATED ENGLISH QUESTIONNAIRE

Below is a complete translated version of the questionnaire used in the present study. The original Norwegian version is available as appendix 1.

By clicking **NEXT** you confirm that you have received a letter of consent and that you have read and understood the letter of consent, as well as having signed the letter of consent. If you have not received a letter of consent, please contact the master student.

Your participation in this questionnaire is completely voluntary, and your answers are confidential.

Welcome, and thank you for choosing to participate!

This short questionnaire takes approximately 15 minutes to complete, and you will be asked different types of questions. Free text means the question must be answered by writing an answer in your own words. Multiple choice means you will receive alternatives. Statement means you must indicate to which degree you agree with the statement.

This questionnaire aims to study how students in upper secondary school develop **communicative competence** in the English subject.

Before the questions it is beneficial to provide a short explanation of what communicative competence is.

Communicative competence is the ability to communicate. That means using language to create meaning in various situations, so that one might both understand others and make oneself understood. Communicative competence is called Communicative Competence in English and is an important part of the English subject. The ability to communicate is an important part of the curriculum, and whether a student can communicate well in English is therefore something that teachers look for when grading students in the subject.

The first question is a statement. Good luck!

Statement: I have understood what communicative competence is.

- (1) Disagree strongly (I have not understood communicative competence)
- (2) Disagree a little
- (3) Neither agree nor disagree
- (4) Agree a little
- (5) Agree strongly (I have understood communicative competence)

You replied that you have not understood communicative competence, and here are some examples that may be able to help you.

Here's a brief refresher from the introduction.

Communicative competence is the ability to communicate. That means using language to create meaning in various situations, so that one might both understand others and make oneself understood. Communicative competence is called Communicative Competence in English and is an important part of the English subject. The ability to communicate is an important part of the curriculum, and whether a student can communicate well in English is therefore something that teachers look for when grading students in the subject.

Communicative competence is a combination of several different abilities that help us communicate. For example, a large vocabulary helps us communicate by giving us the words we need to express ourselves. If you want to say that you're hungry in English, the easiest way is to know the word "hungry". Grammar also helps us communicate, as correct grammar is essential for us to be understood.

Another example is how social skills help us communicate. We know when to say thank you and when to apologize. When we ask something, we know that if we say "please" and ask in a friendly way, we are more likely to get a positive answer. These are all examples of social skills.

A final example is how knowledge of cultures can be important for communication. Things can be understood in different ways in different cultures. A simple example is how we talk about time. In Norway half-past eight is at 7:30 p.m., but in Ireland and parts of England "half eight" would be understood as 8:30 p.m., as they consider "half eight" to mean "half past eight". Such a simple difference can quickly lead to major misunderstandings.

Hopefully, this has helped you understand communicative competence. You can now move on.

Statement: I am good at communicating in English.

- (1) Disagree strongly
- (2) Disagree a little
- (3) Neither agree nor disagree
- (4) Agree a little
- (5) Agree strongly

Statement: I did not watch English movies and TV while growing up.

- (1) Disagree strongly
- (2) Disagree a little
- (3) Neither agree nor disagree
- (4) Agree a little
- (5) Agree strongly

Statement: I played a lot of video games in English while growing up.

- (1) Disagree strongly
- (2) Disagree a little
- (3) Neither agree nor disagree
- (4) Agree a little
- (5) Agree strongly

Statement: I read a lot of English while growing up. (For example, in books or online)

- (1) Disagree strongly
- (2) Disagree a little
- (3) Neither agree nor disagree
- (4) Agree a little
- (5) Agree strongly

Multiple choice: From the options below, where do you feel you learned the most English? (You may choose multiple alternatives)

- (1) English education in school
- (2) My parents
- (3) My friends (Not via the internet)
- (4) Movies, TV, and shows
- (5) Books and reading
- (6) Video games (Both offline and online)
- (7) The internet (For example, web sites and chatting services)
- (8) I do not know

Multiple choice: From the options below, where do you feel you learned the least English? (You may choose multiple alternatives)

- (1) English education in school
- (2) My parents
- (3) My friends (Not via the internet)
- (4) Movies, TV, and shows
- (5) Books and reading
- (6) Video games (Both offline and online)
- (7) The internet (For example, web sites and chatting services)
- (8) I do not know

Multiple choice: On average, how much do you use English in your spare time?

- (1) Less than 1 hour a week
- (2) Between 1 and 3 hours a week
- (4) Between 3 and 6 hours a week
- (3) More than 6 hours a week
- (5) I do not know

Free text: In what context do you use English the most in your spare time, and how much?

The following questions regard the use of video games and movies and TV in education. «Your English education» refers to all your English education, both in upper and lower secondary school.

Multiple choice: How often have movies and TV been used in your English education?

- (1) Never (It has never been used in my education)
- (2) Seldom (Once a year or less)
- (3) Occasionally (Between once a year and once every six months)
- (4) Regularly (Between once every six months and once a month)
- (5) Often (Once a month or more)

Multiple choice: How often have video games been used in your English education?

- (1) Never (It has never been used in my education)

- (2) Seldom (Once a year or less)
- (3) Occasionally (Between once a year and once every six months)
- (4) Regularly (Between once every six months and once a month)
- (5) Often (Once a month or more)

Statement: I think English movies and TV should be used in English education.

- (1) Disagree strongly
- (2) Disagree a little
- (3) Neither agree nor disagree
- (4) Agree a little
- (5) Agree strongly

Statement: I think English video games should be used in English education.

- (1) Disagree strongly
- (2) Disagree a little
- (3) Neither agree nor disagree
- (4) Agree a little
- (5) Agree strongly

Free text: Expand upon your answers to the statements above.

Statement: I think it is easy to speak English with someone I know speaks Norwegian.

- (1) Disagree strongly
- (2) Disagree a little
- (3) Neither agree nor disagree
- (4) Agree a little
- (5) Agree strongly

Statement: I think it is difficult to speak English aloud in class.

- (1) Disagree strongly
- (2) Disagree a little
- (3) Neither agree nor disagree
- (4) Agree a little
- (5) Agree strongly

Statement: I think it is easier to speak English with someone who can't speak Norwegian.

- (1) Disagree strongly
- (2) Disagree a little
- (3) Neither agree nor disagree
- (4) Agree a little
- (5) Agree strongly

Free text: You answered that you think it is easier to speak English with someone who can't speak Norwegian. You are not alone in feeling this way. Why do you think this is the case?

Multiple choice: Do you play video games in your spare time?

- (1) Never
- (2) Sometimes
- (3) Often

Free text: What type of video games do you play the most?

Multiple choice: On average, how often do you play video games together with other players? (Both offline and online)

- (1) Never
- (2) Less than once a month
- (3) Between once a month and once a week
- (4) Between once and thrice a week
- (5) More than thrice a week

Multiple choice: Do you believe video games have made you better at communicating in English?

- (1) No
- (2) Some
- (3) Yes

Free text: Do you believe video games may be used to learn how to communicate in English? Why/why not?

You have now reached the final question in the questionnaire. Even though this question is somewhat difficult, you just need to write the first thing that comes to mind. All your thoughts about the topic are of interest. There are no wrong answers, and you are welcome to contribute with new ideas or critique of existing methods.

Free text: Communicative competence is an important part of English education. What do you believe is the best way for a student to learn how to communicate in English?

You have now completed the survey. You must press FINISH to deliver your answers, and you may close the website when you reach the university's page. Thank you very much for your participation!

If you have anything you wish to say about the questionnaire you may do so below, but this is completely voluntary.

Feedback on the questionnaire. I appreciate both criticism and praise.
