Master's thesis

NTNU
Norwegian University of Science and Technology
Faculty of Humanities
Department of Language and Literature

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Code-Switching, Gaming and Gender: Exploring The Use of a Cooperative Entertainment Game in Two Norwegian Upper Secondary English Classrooms

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Supervisor: Annjo Klungervik Greenall
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Abstract

This thesis examines gender-based differences in code-switching patterns of young Norwegian teenagers playing the game 'Pico Park' in an English language-learning context at an upper secondary school in Steinkjer, Norway. The aims of the study were to examine to what extent the participants used English or Norwegian when playing a game in an English language-learning context, to examine the function and type of code-switching that occurred in this context, to examine whether any gender-based differences could be identified in the choice of matrix language and code-switching patterns, and to examine how speakers in this context perceive their own language use and the usefulness of switching between languages in the language-learning classroom. Three methods were deployed in an attempt to answer these questions: a questionnaire, a gaming task, and an interview. In total, 16 girls and 11 boys in their first year of upper secondary participated. To allow for gender-based comparison of the tasks, participants were split into all-female and all-male groups. Five female groups and three male groups were therefore created. Analysis of the findings showed that the main difference between the male and female groups was the frequency of the code-switching that occurred. The male groups were found to switch considerably more than the female groups, with the most common function being to organize action among the participants within the game. Discussion of the findings suggests that the participants' self-reported gaming habits and English proficiency as well as the linguistic space that gaming culture implies might have contributed to the choice of matrix language for some of the groups in the gaming task. Although most of the participants who were interviewed considered switching between languages as something positive in the classroom context, few could explain why and in what ways they themselves had switched between languages while playing. Findings from the study suggest a need for further studies on gender-based differences in the context of language learning and gaming, especially in Norway.

Sammendrag

Denne masteroppgaven tar for seg kjønnsforskjeller i kodevekslingen hos norske elever når de spiller dataspillet «Pico Park» i forbindelse med engelskundervisning ved Steinkjer videregående skole. Målene med studien var å undersøke i hvilken grad deltakerne brukte engelsk og norsk da de fikk spille et spill, i tillegg til å undersøke hva slags type kodeveksling som oppsto og funksjonen til denne. Oppgaven hadde også til hensikt å undersøke om man kunne identifisere kjønnsforskjeller i valg av matrisespråk og kodevekslingsmønster, samt å undersøke hvordan språkutøverne i denne sammenhengen vurderte sitt eget språk. Det var også et mål å kartlegge hvorvidt deltakerne opplevde at denne kodevekslingen hadde en nytteverdi for deres engelskundervisning. Tre metoder ble brukt for å forsøke å besvare disse problemstillingene: et spørreskjema, en dataspilloppgave og et intervju. Totalt deltok 16 jenter og 11 gutter fra førsteklasse på videregående. For å kunne gjøre sammenligninger mellom kjønnene, ble elevene delt opp i jente- og guttegrupper. Fem jentegrupper og tre guttegrupper ble dannet. Analysen av resultatene viste at de største forskjellene mellom guttene og jentene var hvor ofte kodeveksling ble observert. Gruppene som besto av gutter vekslet mellom språkene sine mye oftere enn jentegruppene, og den mest vanlige funksjonen til kodevekslingen var å organisere videre aktivitet blant gruppemedlemmene i spillet. Diskusjonen av resultatene foreslår at deltakernes egenrapporterte spillevaner og engelske språkferdigheter, i tillegg til spill-kulturen og bruken av spill som medium, kan ha bidratt til valg av matrisespråk for noen av gruppene. Selv om mesteparten av deltakerne som ble intervjuet så på det å skifte mellom språk i undervisningssammenheng som noe positivt, var det få som kunne forklare hvorfor og på hvilken måte de hadde vekslet mellom språk mens de spilte. Funnene fra denne oppgaven antyder et behov for videre forskning på kjønnsbaserte forskjeller i forbindelse med språkundervisning og bruk av dataspill i klasserommet, særlig i den norske skolen.

Acknowledgments

This thesis marks the end of five long years of studying, and also a bittersweet goodbye with Trondheim. These past few years have been challenging and frustrating, but also incredibly rewarding and valuable to me. Writing this thesis has not been easy, and it has challenged me in ways I did not expect. There is nevertheless no doubt in my mind that it has all been worth it. I could not have done it without the help of my incredible supervisor, Annjo. Thank you for your endless amount of trust and patience, and for believing in me when I didn't. Thank you to my family and friends for pushing me to do this for myself, and for cheering me on throughout the process. I am eternally grateful for all your love and support.

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Hedda Sofie Lauve Hansen

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Table of contents

List of Figures

List of Tables

Abbreviations

DGBL	Digital game-based learning
DGBLL	Digital game-based language learning
CALL	Computer-aided language learning
CS	Code-switching
COTS	Commercial off-the-shelf (games)
L1	First language, i.e., native language
L2	Second language
SLA	Second language acquisition
MMORPG	Massively multiplayer online role-playing game

1 Introduction

Online gaming can be considered a virtual playground where players can engage with each other in a fun and exciting space, where conversations between players often happen in real-time and the opportunities to make friends are plenty. More importantly, the online gaming space can provide players with authentic communication contexts that may offer practice in many different languages, in turn providing players with valuable arenas for second language acquisition (SLA) (Peterson, 2010a). It is therefore unsurprising that research on the environment of online gaming has suggested strong benefits to carrying this space over into the language-learning classroom. This integration can involve immersion into the game in which the language of the game becomes the target language of instruction. Games without significant written or spoken language can also be an opportunity to practice language, either by discussing events in the game or by communicating while playing together to cooperate in overcoming the challenges that the game provides. Games can in these ways become a pathway between the players' native language and their second language, in turn creating a space where the players can switch between languages to construct meaning and communicate without the affective barrier otherwise found in formal language instruction.

Traditionally, second language learning was considered to be best facilitated within conditions where the target foreign language was the only language spoken or interacted with within the classroom (Cummins, 2007). Language learning has since been brought into the light of social and cultural considerations appropriate to our current time and age, in which the sociopolitical context of immersion schooling is among the factors arguing against this type of language instruction (Walker & Tedick, 2000). Instead, insights into multilingualism suggest that allowing students to utilize all their linguistic resources in the classroom can be highly beneficial for language learning (Flognfeldt, et.al, 2020). Related to this is the multilingual phenomenon known as 'code-switching', in which a speaker may switch between their native language (L1) and second language (L2) for different communicative functions (Park, 2013). Related to this is the concept of 'translanguaging', a term that refers to both the pedagogical practice of utilizing more than one language in language instruction as well as the bilingual practice of using one's linguistic resources to make meaning and communicate (Vogel & García, 2017). Both of these concepts capture aspects of the 'multilingual turn' that challenge the bias toward monolingual research and teaching (Alstad & Tkachenko, 2018).

The growing influence of technology in the educational setting is another way in which established ideas about learning and teaching language have been challenged. Digital game-based learning (DGBL) has been recognized as a promising tool for

language learning, as learning games can in many cases provide immersive exposure to the language learning environment, simultaneously lower barriers tied to language production, and increase the use of the target language for interaction while gaming (Hung et.al., 2018; Reinders & Wattana, 2015). Games can also be considered highly motivating, and a way to encourage L2 interaction both in and outside of the classroom (2015). DGBL can involve the use of games developed for educational use ("serious" games) as well as games developed mainly for entertainment, each with their own benefits to learning; the understanding is nevertheless that "games embody well-established principles and models of learning" and that "learning that occurs in meaningful and relevant contexts is more effective than learning that occurs outside of those contexts, as is the case with most formal instruction" (Van Eck, 2006, p. 18).

At the same time, gaming as a hobby and activity can be understood as a highly gendered activity in which the male gender is dominant (Bryce & Rutter, 2003). Because of this, literature concerning gaming among the female gender has been largely neglected (Leonhardt & Overå, 2021). This presents a potential problem for the use of DGBL, as it could bring some of the gender issues of the gaming community into the classroom. Furthermore, it could also provide an unfair advantage to male students if they are generally more proficient in this medium. It is therefore desirable to also look into the difference between how the genders behave and perform when DGBL is employed.

In Norway, the English language is prominent on television, social media, in advertisements, in the workplace, and sometimes in conversations between Norwegians as well (Alstad & Tkachenko, 2018). Norwegian schools, as with many European schools in general, often begin English language teaching (ELT) at preschool age (2018). Most Norwegians will therefore encounter English both in and out of school through various means to the extent that the majority of the population can be considered very proficient in English (2018). However, as Brevik and Rindal (2020) write: "Despite the prominent status of English in Norway, the Norwegian school system only implicitly encourages multilingualism in the context of English teaching and the national English curriculum minimally addresses the use of students' L1s" (2020, p. 930). Research on the use of multilingual phenomena in English language-learning classrooms in Norway is scarce, suggesting a need for more research on how and why teachers should find ways to include Norwegian and other potential native languages in the instruction of English. This discussion relates itself to concepts of code-switching and translanguaging in multilingual classrooms, a field that has been researched much more extensively in American classrooms.

Studies have suggested that gender-based differences can be found in terms of code-switching (Fuller, 2010; Arora, 2019; Bassam, 2018), and some have also

considered the occurrence of code-switching in a gaming context (Piirianen-Marsh, 2010; Leppänen, 2007). However, little research has been done on the ways in which language, gaming, and gender may affect one another in terms of language choice and code-switching. Moreover, little research has been done on these aspects in the English language learning classroom specifically, especially in Scandinavian countries. From this, the basis for the current thesis project emerged.

The aim was to investigate the language produced by young Norwegian upper secondary students when playing a game in an English language-learning context, with emphasis on what language they chose as their dominant language in interaction, the characterization of code-switching that could occur in this context in terms of type and function, and if any gender-based differences could be traced to these aspects.

Based on these aims, four research questions were created:

1. To what extent do Norwegian upper secondary students use English vs. Norwegian when verbally interacting in a game?
2. What characterizes the code-switching that occurs in terms of type and function?
3. Is there a difference between males and females when it comes to 1 and 2?
4. How do they perceive their own language use when gaming and the usefulness of switching between languages in the language learning classroom?

The project was conducted in collaboration with an upper secondary school in Steinkjer in Trøndelag, Norway. A mixed-methods approach including a questionnaire, a gaming task, and group interviews was adopted to address the research aims. The aim of the questionnaire was to capture general biodata related to gender and age, while also mapping the participants' self-reported proficiency in English and their weekly gaming habits. The gaming task was designed to provide data on the conversations that could occur while playing an entertainment game. This was collected through audio recordings of the gaming task. The interview task was designed to examine the participants' beliefs and behavior towards using games for learning in general and to address the concept of switching between languages in the English language learning classroom specifically.

2 Literature Review

This chapter examines previous work on the use of digital games for learning, and in what ways the development and play of digital games have been considered a largely male-dominated field of interest. An overview of research on the relationship between gaming and gender is presented in order to understand how differences in preferences and behavior between men and women may influence their motivation to play games, and consequently interact with other players in a gaming space. Previous studies on digital game-based learning are discussed, with emphasis on the use of games in education generally and in language learning specifically. The lack of gender perspective in this context is highlighted. Lastly, the chapter provides an overview of the literature on code-switching (henceforth CS), with emphasis on theoretical framework, important work that has been done in the field of CS, and gender differences in CS.

2.2 Gaming Research

The popularization of utilizing and researching digital learning games stems from a change in learners (Acquah & Katz, 2020). As Prensky (2001) emphasized in the early ages of digital culture: "today's students think and process information fundamentally differently from their predecessors" (p. 1, 2001). Related to this assumption are the much-debated concepts of 'digital natives' and 'digital immigrants' (Evans & Robertson, 2020). According to Prensky, those who have grown up with technology are 'native speakers' of the digital language of computers, video games, and the Internet, while those who have not are immigrants in the technological world. Consequently, a so-called 'digital divide' between the natives and the immigrants was established. To help close this gap, Prensky wanted to adapt the educational system to meet the needs of students by implementing computers and digital game-based learning into the classroom (Coffey, 2009). Although Prensky's assumptions had little basis in empirical data at the time (Evans & Robertson, 2020), his works still marked the beginning of an extensive debate surrounding why and how technology could be implemented in the classroom. Moreover, the introduction of the idea of using games for learning led to numerous contributions to the field since the year 2000. Academic research on video games has also largely shifted from discussing whether games could induce violent behavior to discussing how and in what ways different games can be useful for learning (Hui-Chun, 2007). This has resulted in a more positive outlook on gaming as an activity and hobby, which has arguably resulted in a more productive academic discourse surrounding gaming.

In recent years, researchers on computer-assisted language learning (CALL) have highlighted the affordances of digital games for second language acquisition (SLA) in particular (Peterson, 2023). With this in mind, the following section will first provide an

overview of research that has been done on digital game-based learning (DGBL) in general, with a focus on how gamification, serious games, and commercial games have been used for learning. The examination will then move toward digital game-based language learning (DGBLL), and address what types of games have been found to be particularly useful for language learning. Factors to integrating games into the language-learning classroom are examined, with emphasis on how aspects surrounding gender may impact this integration.

2.2.1 Digital Game-Based Learning

Digital game-based learning (DGBL) can be understood as the application of digital games in a learning context (Hung et.al, 2018). In principle, the benefit of DGBL is that it connects educational content with video games and is a way of learning that has been considered useful in almost all subjects in the classroom setting (Coffey, 2009).

2.2.2 Serious Games, Gamification, and The Use Of Commercial Games In Education

The theoretical framework and models in DGBL are linked to approaches used to incorporate games into the classroom. In general, educators have adopted three approaches for integrating games into the learning process: 1) have students build games themselves; 2) have educators or game developers design games specifically to be utilized in educational contexts, and 3) integrate commercial off-the-shelf (henceforth COTS) entertainment games into the classroom (Van Eck, 2009). Of these, games developed for educational contexts and commercial games have been considered the most promising.

A learning game can be defined as "a playful activity that is structured by rules for the pursuit of quantifiable outcomes (e.g., win states and points) and incorporates educational objectives (e.g., knowledge acquisition) as its own end" (Hung et.al, 2018, p. 89-90). Games developed for educational use, i.e., "serious games" (SG) are games "not designed mainly for entertainment purposes […], but [games designed] to exploit game appeal and consequent player motivation to support development of knowledge and skills" (Arnab et.al., p. 2, 2014). SGs are therefore separated from games developed for entertainment based on their pedagogical perspective. The use of SGs has been researched extensively by many (Ritterfeld et.al, 2009; Susi et.al, 2007; Stapleton, 2004), with the consensus being that there are numerous advantages to using serious games in education. SGs have been utilized in a broad range of subject areas, such as science (Tsai, 2020), mathematics (Barbieri & Capone, 2021), engineering (Rajan et.al, 2013), and English (Yanes & Bououd, 2019) among many others.

Closely related to the concept of SGs is the notion of gamification, which is another field within game-based learning that has been studied considerably over the

past few years (Bozkurt & Durak, 2018). Both concepts have been identified as useful ways to integrate games or game mechanics into the classroom (Landers et.al, 2017; Yanes & Bououd, 2019). The concepts can be separated from each other in that SGs are full-fledged games designed for non-entertainment purposes, whereas gamification involves incorporating *elements* found in games into the learning process (Deterding et.al, 2011). Hence, gamification can be understood as a teaching approach that involves using game design elements in non-game contexts to "increase users' motivation to provide more effective, efficient, engaging, enduring and entertaining experiences" (Bozkurt & Durak, 2018, p. 15).

Although research on using games for learning has mainly focused on the use of pedagogically developed video games, studies suggest that entertainment games in and of themselves could be just as suitable for facilitating learning (Martinez et.al, 2022). Studies have shown that a game-based learning strategy using commercial entertainment games was effective in promoting students' problem-solving skills and beneficial to learning motivation. These findings suggest that it should be possible to utilize entertainment games in the classroom without them being detrimental to academic achievement (Backlund & Hendrix, 2013, p. 7). Entertainment games can also be a way to ease students into other work, or a way of encouraging students to finish their work in time, etc. The usefulness of entertainment games should in other words not be ignored compared to SGs, as there are considerable advantages to using entertainment games to learn a variety of subjects.

Integrating games into educational contexts is not without challenges, however. Challenges surrounding the use of SGs can be related to the required skill set for educators and learners to be able to engage with a game or the development of efficient SGs that can withstand the test of time and be applicable across various disciplines (Baalsrud Hauge et.al, 2022). It is also challenging to know and ensure that the learning games and the learning objectives align with each other, and to assess the actual learning effects of DGBL in different contexts (2022). Other concerns are whether SGs are too dissimilar from games developed for entertainment to be appealing and engaging (Dele-Ajayi, 2016). As with SGs, using entertainment games for learning requires knowledge and skill in order for the educator to be able to i.e., aid the students while they play, fix technical issues that may occur, know how to explain the game mechanics to their students, and so on. If the teacher does not possess this knowledge or have the skills to understand the game themselves, it is likely that the entertainment game will mainly be entertainment.

2.2 Gaming and Language Learning

The affordances of using digital games for learning have been found to be very promising in the field of language research (Hung et.al, 2018; Peterson, 2010a, Kongmee et. al, 2011). Studies on using games for language learning indicate that both SGs and entertainment games can be very well-suited to use in the language-learning classroom. A lot of studies have been done on the use of massively multiplayer online role-playing games (MMORPGs) in particular, with the results indicating that these types of games are especially well-suited to get students talking to one another. With this in mind, the following section focuses more specifically on the use of entertainment games for language learning.

2.2.1 Digital Game-Based Language Learning

Hung et.al (2018) provide an extensive literature review of research on digital game-based language learning (DGBLL). In this review, it was found that digital games "were most frequently implemented to foster the language learning of L2 learners with mixed proficiency levels, as many of the selected studies investigated the use of COTS games in naturalistic settings where gamers across language proficiency levels interacted and played to play and learn together" (p. 98, 2018). The review found that many of the studies that have been done on DGBLL have used games that were custom-built for specific studies in order to align the goals of the game and the learning objectives more easily. In cases where researchers chose to use a COTS game, immersive games such as the MMORPG *World of Warcraft* were found to be the most commonly used genre of games in DGBLL research. The review highlights the empirically documented affordances of ready-made COTS games in language learning contexts, emphasizing the need for more studies that choose to make use of games that are more readily available to teachers.

Studies such as Peterson (2010a), (2010b), and Kongmee et.al (2011) highlight the social spaces that appear in MMORPGs as highly beneficial to language learning. Peterson (2010a) outlined key design features and hypothesized advantages to the use of MMORPGs in the classroom in which "real-time fantasy gaming context", "presence of agents and personalized avatars" and "availability of network-based text chat" were identified as some appealing design features unique to MMORPGs (2010a, p. 14). The hypothesized advantages to these features were considered to be "immersion in a TL [target language] environment facilitates purposeful TL use and learning by doing", "anonymity may reduce affective barriers" and "opportunities for interaction with native speaker interlocutors and the development of collaborative interpersonal relationships" (2010a, p. 14). Kongmee et.al (2011) also highlights the safe environment for socialization in MMORPGs and the opportunity to assume a different identity as ways in

which players can practice and learn language through games (2011, p. 14-15). Furthermore, Kongmee et.al (2011) identifies specific activities found in traditional MMORPGs that can be great spaces for language learning, such as questing, raiding, trading, and player versus player (PvP) in which two players battle each other to test their abilities and skills. The findings in both Peterson (2010a) and Kongmee (2011) suggest that MMORPGs can be a useful tool for supporting language learning, due to the informal and safe community-based learning environment they can provide.

Using MMORPGs in the language learning classroom can be difficult, however, considering the time it takes to get ready to play with respect to the time limitations inherent in a classroom context (Susaeta et.al, 2010). As suggested above, the attractiveness of MMORPGs is in large part connected to the immersion it provides through character customization. This process can be considered labor-intensive and difficult to regulate if such a game is to be used in a larger classroom setting. It can also be argued that the use of MMORPGs in the classroom would require the teacher in these classes to possess broad technological competence to be able to aid students while playing. A study by Munkvold and Sigurdardottir (2018) on Norwegian game-based learning practices showed that although the attitudes towards DGBL among the Norwegian respondents were positive, technological and time/management obstacles were identified as the most common hindrances to why the participating teachers in this study chose not to use games for learning (2018, p. 465). Similar findings in Hébert et.al (2021) suggested that teacher reservations were one of the barriers to integrating DGBL into the classroom, in which these reservations were found to be largely due to a lack of comfort with games or a lack of understanding of the potential benefits of using games in education in general. It may therefore seem wiser to use COTS games that involve less preparation to play and technological competence on the instructor's part to ensure that potential learning outcomes of DGBLL can be facilitated.

Findings in Susaeta et.al (2010) also suggest that the amount of time that MMORPGs usually require players to spend on customization and advancement of their characters, is not necessarily something all players will enjoy. In fact, findings in this study suggested that the amount of time required for character advancement detracted from the pleasure of playing the game in itself (2010, p. 10). It is therefore not a given that MMORPGs are inherently better suited to learning in general, or language learning specifically.

Interestingly, Van Eck (2009) argues that the content of a game is secondary to the critical reasoning, problem-solving, and negotiation that many COTS games can offer learners: "[…] it is not just the content that makes GBL [game-based learning] a good idea in classrooms; it is what the learners are *doing* with that content as they interact with the rest of the game" (2009, p. 2). Successful integration of COTS games into a

classroom is in this sense understood to be connected to several premises in which the technological competence of both the instructor and the learners are highlighted, as well as the premise of the instructor or teacher assuming the role of manager, designer, and facilitator of the activity (2009, p. 6). A key factor for the integration of both serious games and COTS games into the language classroom can in this sense be understood to be technological competence, and that all parties possess a certain level of technological competence to be able to play digital games. Another factor is connected to clarifying the intended learning outcome of the task. The intention of the activity should therefore be communicated in a manner that highlights the teacher as the mediator of the activity, and subsequently the person responsible for facilitating learning. With this in mind, successful integration of a game into the classroom need not necessarily rely on the content of the game specifically, but rather on how the activity is structured and communicated by the teacher, their ability to aid the students in the activity, and the ability on the students' part to process and interact with the game they are presented with. Following this assumption, any game could in principle be suitable for learning. The current context of using games for language learning, however, requires further examination of what research has found about potential factors specific to the bilingual classroom.

2.2.2 Factors in Integrating Games Into the Classroom Generally and The Language-Learning Classroom Specifically

Beyond technological competence and the communicated purpose of the task, other factors may also affect the integration of games into the classroom. Coffey (2009) suggests that age, characteristics, gender, competitiveness, and previous gaming experience of the learners are also factors important to DGBL that should be considered when selecting a game to play in the classroom (2009, p. 1). Other factors may be the target age level of a game, the potential special needs of the learners, the gender and ethnical diversity of the group, and the number of players that can play at the same time (2009, p. 1).

In the context of language learning and the bilingual classroom specifically, Chapelle (2009) outlines a framework for factors to consider in using a game for second language learning, i.e., SLA: 1) language learning potential; 2) meaning focus; 3) learner fit; 4) authenticity; 5) positive impact; and 6) practicality (2009, p. 748-749). The first of these characteristics, i.e., language learning potential, concerns itself with the opportunities players of a game are presented with in terms of interacting with the target language, and the quality of this engagement (2009, p. 748). The second and third aspects, meaning focus and learner fit, concern "the extent to which learners have rich, interesting input and/or produce meaning" and "the level of the language" (2009, p.

748). In terms of authenticity, Chapelle (2009) argues that there should be a linguistic match between the language that learners produce in the gaming context with the language they produce beyond the classroom. The activity should in this sense provide learners with authentic input that mimics what they might observe or use themselves outside of the classroom. Positive impact refers to the more general benefits of using a game for learning, beyond linguistic benefits. Benefits described in Hung et.al (2014), Van Eck (2009), Peterson (2010a), and Kongmee et.al (2011) above exemplify these advantages in general and specific terms. Lastly, the characteristic of practicality as it is understood in Chapelle (2009) concerns itself with "the degree to which learners have access to and skills needed for work on the tasks" (2009, p. 748). This characteristic can also be considered similar to the aspect of technological competence that has been addressed above. There are, in other words, some similarities between using games for learning generally and for language learning more specifically, and the main differences between these are, unsurprisingly, connected to aspects that concern the production of language.

Another factor that is important to consider in the integration of games into the classroom is the aspect of gender, both in terms of games being understood as an inherently male-dominated activity (Bryce & Rutter, 2003), and how gender as well as motivation can predict genre preferences in games (Van Looy, 2011). It is therefore necessary to consider whether differences between the preferences and behavior of men and women in the gaming context might affect the integration of games into the language-learning classroom as well.

2.3 Gaming and Gender

To understand how aspects of gender might complicate the integration of games into the language-learning classroom, an overview of gaming and gender research is presented first. The following section examines gender representation and stereotypes in video games based on a number of studies that discuss this (Jenson and de Castell, 2010; Rogstad, 2022; Eklund, 2011; Kuss et.al, 2022; Millers & Summers, 2007; Behm-Morawitz & Mastro, 2009). Gender differences in gaming preferences and behavior (Veltri et.al, 2014; Vella et.al, 2020; Khan, 2017) is then addressed with respect to this examination. These aspects are detailed in order to understand how the gendered culture surrounding gaming could in itself contribute to gender-based differences in preferences and behavior while playing, and how these factors may further implicitly or explicitly affect how men and women choose to interact and play games in the context of a language-learning classroom. Incorporating gaming into a classroom, therefore, requires consideration of the gendering of game content and spaces, as well as consideration of gender differences and similarities in gaming in terms of adoption, motivation, social

interaction, self-presentation, skills, performance, and how men and women generally play (Veltri et.al., 2014).

2.3.1 Gender Representation And Stereotypes In Video Games

Gender has become a more frequent topic of conversation in gaming research over the past few years. The conversation on gaming and gender can be said to be part of a larger cultural discussion about gender, gameplay, and technology, in which technology as a broad concept in itself is considered highly gendered (Rogstad, 2022). However, this does not automatically mean that women are simply less technologically competent than men. Jenson and de Castell (2010) write:

> Technological competence, so seen, has less to do with actual skills and more to do with construction of a gendered identity—that is, women lack technological competence to the extent that they seek to appropriately perform femininity; correlatively, men are technologically competent by virtue of their performance of masculinity […] Technology cannot, therefore, be assumed to be a value-neutral tool that women and men use indiscriminately or free from social constructions of identity that continually (re)position them through markers like gender, race, nationality, or class (Jenson & de Castell, p. 54, 2010)

In this sense, women must renounce their feminine identity to be considered technologically competent, while men are seen as technologically competent as a virtue of their masculine identity. Engaging with technology such as video games is therefore not a value-neutral activity that women can freely take part in, because the culture in which games exist is in itself "persistently male dominated, hostile to women and others, and deeply misogynistic" (Jenson & de Castell, 2018, p. 729). Thus, the increased number of female gamers does not automatically mean that gaming culture has become more inclusive (Jenson & de Castell, 2018), but perhaps women to a larger extent choose to play games despite the attitudes that exist within this culture. In the context of MMORPGs, for example, Eklund writes that "[w]omen can still be considered the odd one out" (Eklund, 2011, p. 324). The gendered nature of gaming as a hobby and activity and the way that it has been studied throughout the years predisposes that women are inherently less capable of playing games than men, which in turn facilitates a culture that alienates and outcasts women from the gaming space to the extent that they may refrain from engaging with certain games altogether. Jenson and Castell (2010) write: "The powerful association of masculine subjects as gamers and game designers, as well as the presumption […] of […] (male) competence and ability, has positioned women and girls unerringly as "less able," "less competent", and as "casual" gameplayers" (2010, p. 54).

Evidence of this type of culture can be found both in the games themselves and the culture surrounding them, in terms of how and to what extent women are represented in games, and how women are oftentimes treated by other players.

In many video games, female game characters are often represented in a hypersexual way with exaggerated curvy bodies with tiny waists, and character movements that are deeply sexualized (Kuss et.al, 2022). The gender of the game characters that players can choose to play as is more often than not predominantly male (Romrell, 2014; Jenson & de Castell, 2010). Furthermore, research has found that male characters are not only more likely to be heroes and main characters, but also more likely to use weapons, be muscular and powerful, and generally possess more abilities than female characters (Miller & Summers, 2007). Female characters, on the other hand, are more likely to be portrayed as supplemental characters to the male hero, accompanied by a visual appearance that underlines female characters as sexy and attractive, yet also innocent and helpless (Miller & Summers, 2007; Jenson & de Castell, 2010). Although male characters may also be represented in a sexualized way, the effect of this sexualization beyond the game can be said to be more far-reaching with women than it is with men. Unsurprisingly, these sexualized representations of female characters, either as supplementary characters or heroines, have been found to negatively affect female self-efficacy (Behm-Morawitz & Mastro, 2009). What is worrying about this is that these hypersexualized female game characters have been found to influence people's beliefs about women in the real world as well (Behm-Morawitz & Mastro, 2009). These inherently misogynistic tendencies surrounding gaming culture may raise questions as to why women would choose to play games at all, and, moreover, in what ways games could possibly be considered beneficial for learning given the apparent implications that can seemingly be associated with gaming.

Portrayals of sexualized women as less than or supplementary to men in video games are part of larger and more complex issues of sexism and misogyny in the real world. These issues merit a larger discussion than this thesis will be able to provide. It is still useful to consider whether these sexist attitudes in gaming culture can be of hindrance to the integration of games into the classroom, in terms of what these types of values and attitudes may do to those who play games. Studies have suggested that players' internalized values and attitudes towards games may contribute to whether a game can be considered useful in the classroom, suggesting that these values can control the extent to which players allow themselves to interact with a game. Findings in Van Looy et.al. (2011), for example, suggest that female gamers face a higher threshold to engage in video gaming compared to male gamers, because "their motivation for playing digital games needs to be stronger than their belief that gaming is for men" (2011, p. 2). It is here that sexist and misogynistic attitudes in gaming culture may be of hindrance to

game-based learning because the culture surrounding gaming makes it fundamentally more complex for women to take part in gaming, because the activity in itself is not value-neutral, as suggested earlier in this chapter (Jenson & Castell, 2010).

The focus in most studies on game-based learning and gender has not been to settle whether these attitudes are directly detrimental to the teaching and learning experience, but rather on how they might impact players' motivation to engage with a game. More specifically, some studies have indicated that differences in preferences and behavior in female versus male players when gaming is what may influence the experience of using a game for learning (Kuss et.al, 2022), especially in terms of how motivating a game is to each of the genders. This is a position that this thesis will also assume because it allows for a more fruitful examination and discussion of the project at hand.

Thus, an examination of gaming preferences and behaviors found in men and women is needed. The following section examines research on gaming preferences and behaviors found in men and women, with an emphasis on what motivates men and women to play games and how these aspects can be utilized in the integration of games into the language-learning classroom.

2.3.2 Gender Differences In Gaming Preferences And Behaviors

In their literature review, Veltri et.al (2014) identify six categories of differences that can be found in the way men and women play games: 1) adoption; 2) motivation; 3) social interaction; 4) self-presentation; 5) skills and performance; and 6) play. In terms of adoption, the literature that was reviewed found that men generally play more online games than women, that they develop an interest in games earlier in their lives compared to women, and that the average female player is older than the average male player (2014, p. 3). Motivation for gaming was split into six motives: competition, arousal, fantasy, diversion, and social interaction (2014, p. 4). Of these, the aspects of competition, challenge, and fantasy were found to be more motivating to men than women, whereas aspects of diversion, specifically escapism, were more motivating to women than men (2014, p. 4-5).

For social interaction, women were found to be more social and eager to participate in group activities and discussions than men (Veltri et.al, 2014, p. 6). Furthermore, women were found to be more cooperative and more likely to use supportive language to encourage their counterparts while playing (2014, p. 6). This finding is especially interesting in terms of using games for language learning, because it may indicate a potential difference in the types of conversations that may occur between female and male groups when playing games and their potential motivations for verbally interacting with others in a gaming space. However, although men and women have

been found to enjoy socializing while playing online games (2014), studies suggest that not all players experience these opportunities for socialization equally (Vella et.al, 2020). The onset opportunities for socializing in online gaming spaces seemingly favor male players as opposed to female players, perhaps as a virtue of the gaming space generally being male-dominated. Findings in Veltri et.al (2014) suggest that female players may be more interested in seeking friendships while male players may be more interested in seeking different kinds of relationships, i.e., romantic or sexual relationships (2014, p. 6). A difference between male and female players can in this sense be identified in terms of why they engage with other players online.

Research also suggests that gender differences do not influence interest in gaming, but rather lines of play or game preferences (Gros, 2007). Male gamers have been found to prefer action-oriented games, while female gamers prefer to play virtual or simulation games, and puzzle games (Khan, 2017; Veltri et.al, 2014). In other genres of games such as role-playing games and adventure games, this gender gap is less prominent (Khan, 2017). Preferences for activities in-game varied in that women enjoy socializing and exploring and improving their character more than men, while men enjoy building, among other things (2014). Sundqvist and Sylvén (2014) found that there were significant differences in the time spent on digital games in English, and what types of games they preferred to play. Although the participants in this study were quite young, this was not reflected in the games the boys preferred to play compared to those girls preferred to play. The boys in this study reported enjoying games such as *Call of Duty, Counter-Strike, and League of Legends*, all of which have an age restriction that was above the participants' age. The girls, on the other hand, reported to enjoy games that were more age-appropriate, such as *The Sims* (2014, p. 11).

In terms of self-representation, findings in Veltri et.al (2014) suggested that male players were more likely to assume an avatar of the opposite sex than women (2014, p. 7). In more recent research (Kuss et.al 2022), female gamers reported intentionally assuming male avatars and avoiding using female pseudonyms to avoid gender-based confrontation and general unwanted attention from other players. In other words, men and women may have different reasons to choose to present themselves as the opposite gender when gaming, where one may be based on a want for more attention from other players, while the other is an attempt to avoid unwanted, gender-based confrontation. The section above highlights several differences between men and women in a gaming context that can be helpful in understanding what types of games can be useful for learning.

2.4 Code-Switching

2.4.1 What is Code-Switching?

CS can be understood as a linguistic phenomenon that can be found in bilingual and multilingual discourse. It can be understood as a product of contact between languages and may present itself through both spoken and written conversations (Bullock & Toribio, 2009). In terms of linguistic manifestation, CS may occur as the insertion of single words or as the alternation of entire sentences in the middle of a conversation (2009, p. 2). In other words, CS may present itself as a switch from one language to another in the middle of a sentence or between sentences, i.e., intra-sentential or inter-sentential, respectively (Appel & Muysken, 2005, p. 118). Bilinguals with differing degrees of proficiency may alternate between languages in a variety of linguistic contexts (Bullock & Toribio, 2009, p. 2). CS can be found in conversations in fully bilingual societies where everyone uses the same languages to communicate, and in cases where individuals with no common language have to find a way to communicate with each other (Gardner-Chloros, 1995, p. 68).

As these points illustrate, defining exactly what CS is and how it presents itself is no easy feat, because its use may vary from one speaker to another and the motivations behind CS are complex. Furthermore, because CS has been researched from a variety of disciplinary perspectives, the consequence has become a lack of uniform definition and explanation for what exactly CS is and how it should be understood (Bullock & Toribio, 2009, p. 2). This does not make it impossible to examine CS, but it does make it a contested field to research given the sheer amount of perspectives there are on this phenomenon. Considering these implications, the following section provides a summary of some of the most important contributions within different disciplines to the definition and understanding of CS. Important contributions to the field are discussed, with emphasis on the work that has been done on motivations for CS. From this, an understanding is formed as the basis of how CS is understood and examined in this project.

2.4.2 Definitions and Contributions to the Study of Code-Switching

Several definitions have been proposed to describe the concept of code-switching. Bullock and Toribio (2009) broadly define CS as "the ability on the part of bilinguals to alternate effortlessly between their two languages" (2009, p. 1), and Gardner-Chloros (2009) defines it as "the use of several languages or dialects in the same conversation or sentence by bilingual people" (2009, p. 4). Both of these definitions underline the role of the bilingual speaker in CS. They also highlight CS as an 'ability' of the bilingual speaker, and something that they might 'use' when they speak. CS can in this sense be

understood as something that can be used both strategically and consciously, but also coincidentally and seemingly without any particular reason.

Studies on CS can be said to have branched out into two different but related directions: a structural and a sociolinguistic branch (Boztepe, 2003, p. 3). Within the structural approach to CS, grammatical aspects of its production are considered the most important. Within the sociolinguistic approach, the focus lies on "how social meaning is created in CS and what specific discourse function it serves" (2003, p. 3). Boztepe notes, "[…]these approaches are not in contradiction, but complementary to each other" (2003, p. 3).

Early research on the structural dimensions of CS was concerned with settling the debate of whether CS could be considered rule-governed or if it was random linguistic behavior (Boztepe, 2003, p. 5). In order to find an answer to this question, some boundaries had to be put in place so that it would be possible to distinguish what sort of utterances were to be considered CS, and what was to be considered lexical borrowing. The issue with outlining this boundary is that it involves defining at what point in time a word has transitioned from being a lexical borrowing to becoming an accepted loanword in the target language (Boztepe, 2003, p. 5). In an attempt to distinguish these terms, two approaches were presented. The first approach defined by Poplack (1985) distinguishes CS and lexical borrowings from one another based on the level of integration into the base language. The assumption was that loanwords could be distinguished from lexical borrowings in that "borrowed words which are frequently used are made to conform with recipient language linguistic patterns" (1985, p. 56). Structurally, words were therefore considered loanwords if they had been phonologically, morphologically, and syntactically integrated into the patterns found in the base language, whereas words that had not been adapted to the base language in all of these ways were instances of CS (1985, p. 56). The underlying assumption in this approach is that assimilation was the defining criterion that could distinguish borrowing from CS. Myers-Scotton rejected this assumption of morphosyntactic integration as the basis for this distinction, arguing instead that borrowing and CS should be considered as universally related processes (Boztepe, 2003, p. 7).

Related to this assumption is Myers-Scotton's Matrix Language Framework, which proposed a uniform structure to explain what does and does not appear in CS (Myers-Scotton & Jake, 2009, p. 336). What's interesting in this model is the emphasis on asymmetry in the production of bilingual discourse in which one language is deemed the dominant language, i.e., the matrix language, while the other, non-dominant language, is seen as the subordinate or embedded language (2009, p. 339). The important premise of this approach to CS is that it assumes that the dominant language forms the morpho-syntactic basis for the embedded language and that the dominant language can be visible

even in the non-dominant language. The MLF does not specify that the embedded language must always contain inflections from the matrix language, but that the embedded language will often include the matrix language in some way (Myers-Scotton, 2005, p. 17).

Although studies on the structural and cognitive dimensions of CS have contributed in many different ways to the field of CS, it is widely recognized that these dimensions are inadequate in accounting for patterns of CS behavior, specifically the social motivations and contexts for CS (Bullock & Toribio, 2009, 16). Thus, we turn towards a sociolinguistic understanding of CS. According to Gardner-Chloros (2009), studying CS from a sociolinguistic perspective entails understanding how "language behavior and use are related to speakers' (social) identity and characteristics, or to aspects of their social life in the broad sense" (2009, p. 97). From a sociolinguistic point of view, Gardner-Chloros (2009) defined three factors that may affect the motivation for CS: external factors, speaker-related factors, and conversation-related factors. External factors are understood as factors that are independent of particular speakers and particular circumstances but still affect speakers of a relevant language in a specific community in some way (2009, p. 98). Speaker-related factors are factors that relate to speakers' competence, social networks, relationships, attitudes, ideologies, and self-perception, as well as their perception of others (2009, p. 99). The last factor, which is the conversation-related factor, concerns itself with the very conversations where CS takes place, and how CS is used as a conversational resource by speakers to structure their discourse (2009, p. 9). This is in other words related to how CS presents itself in conversation, which the next section will provide some examples of.

2.4.3 Code-Switching Types and Functions

Several suggestions have been put forward in order to understand how and why CS presents itself in conversation. CS can be divided into categories for types and functions. A 'type' of CS refers to how it appears structurally when it is produced. Appel and Muysken (2005) distinguish between three types of switches in terms of where they occur textually: 1) *tag-switches*, which involve an exclamation or tag in another language than the rest of the sentence; 2) *intra-sentential switches*, which occur in the middle of the sentence; and 3) *inter-sentential switches*, which occur between sentences (2005, p. 118).

Functional categories of CS refer to the intent and purpose of CS as it is observed. Appel and Muysken have also contributed with functional categories, which have been considered highly influential in the field of CS. These categories include 1) a referential function; 2) a directive function; 3) an expressive function; 4) a phatic function; 5) a metalinguistics function, and 6) a poetic function of CS (2005, p. 119-120). Other

examples of functional categories of CS are filling linguistic gaps in conversations and wishing to express one's ethnic identity (Bullock & Toribio, 2009, p. 2), as well as meaning clarification and emotional expression (Kemaloglu-er & Özata, 2020, p. 1447). What is important to note about functional categories for CS, is that they are highly sensitive to a variety of sociolinguistic aspects and that one functional category identified in one study is not necessarily applicable to another study.

2.4.4 Code-Switching and Gender

Research on CS and gender, although scarce, has suggested that there may be some gender-based differences to be found in the language choices men and women make in certain situations. In a study examining gender differences in SMS CS by Lebanese undergraduates, Bassam (2017) suggested that CS was a way for participants to reflect their identities characterized by their gender, among other aspects. The main findings in this study suggest that CS differs between men and women in terms of the frequency of switches that occur and that women were found to code-switch more than men when texting. A qualitative study on CS with reference to gender and pragmatic functions among Indian students (Arora, 2019) found that male participants code-switched more than female ones in the general context of Indian informal conversation, however. Here, too, differences between men and women are largely connected to the frequency in which CS occurs, and not necessarily to specific functional categories of CS.

An interesting finding in Fuller (2010) suggested a gendered interpretation of the language choices that were made between young girls and boys in a Spanish-English classroom. In this study, the use of English among young girls was found to be a means for them to construct a 'best friend' status with other girls in their class. The findings found that identity as a girl was constructed through the use of English, especially in conversation with classmates with support from one's friends (Fuller, 2010, p. 204). Although this finding is quite specific to this study, it offers an interesting insight into how language choice and collaboration with others can contribute to the construction of gender identity in conversation.

The findings in the studies presented above may suggest that attempts to assume that there are gender-based differences in the function of the CS men and women use is something that is not necessarily productive to the conversation on CS and gender, or that it is at the very least not something that can be defined definitively. However, Gardner-Chloros (2009) argues that although CS cannot be correlated in any direct way with gender, "[CS] intersects with a large number of intervening variables which are themselves connected with gender issues" (Gardner-Chloros, 2009, p. 107). Gardner-Chloros (2009) suggests one example from a Greek Cypriot community to illustrate how CS can be found to be woven in with female discourse strategies and discourse needs

through the notion of politeness (2009, p. 107). In this example, three functional categories were identified: humor, bonding, and dampening directness (2009, p. 110). What is important to note about these categories, as with functional categories defined in most studies on CS, is that they are considered especially representative of the CS that occurred in this particular study. The overall understanding that Gardner-Chloros communicates with this example is still that the use of CS intersects with gender issues in different ways and that it may present itself in many different forms.

Considering the research outlined above, language choice and CS can be understood as ways in which speakers may construct their identity as men and women, and the production of CS can intersect with gender issues in many different ways.

2.4.4 Code-switching in the Language-Learning Classroom

Studies on the use of CS in the language-learning classroom can be divided into three main views. In the first perspective, the belief is that the use of CS and L1 should be avoided and that the L2 is the only language that should be used in the classroom (Kemaloglu-er & Özata, 2020, p. 1444). The concern in this approach is that the use of the L1 may cause confusion as to which language is to be used in the classroom and that this might subsequently affect the quality and quantity of the L2 input (2020, p. 1444). The second view on this discussion is the grammar-translation approach where translation from the L1 into L2 can facilitate language learning. The belief in this approach in terms of CS, however, is that the L1 should primarily be used "to teach the equivalences of lexical items and grammar structures on a translation basis" (2020, p. 1444). In other words, this approach lands somewhere in between those who resist the use of CS and the L1 completely and those who embrace it. In the third and last general view of CS in the classroom, the moderate use of CS in L2 classrooms is highlighted as helpful in several ways, especially in terms of minimizing confusion among learners and reducing their stress levels, which in turn encourages language learning, among other things (2020, p. 1444). The underlying indication in traditional bilingual approaches to the use of other languages in the instruction of an L2, however, is still that languages should be kept separate, which "reinforces a standard language ideology […] [in this] teachers feel compelled to attempt to "correct" features of the students' bilingual/non-standard vernacular, such as code-switching (Henderson & Sayer, 2020, p. 207). Thus, research on the concept of translanguaging suggests an alternative way of conceptualizing the bilingual language practices of bilingual and multilingual speakers (2020, p. 207).

Translanguaging can be understood as the act of "using one language to reinforce the other in order to increase understanding and augment the pupil's activity in both languages" (García & Lin, 2017, p. 119). The critique of CS in translanguaging studies is

mainly that CS is a pragmatic practice that has been understood to focus more on simply teaching another language rather than sustaining bilingualism (García & Lin, 2017, p. 119). To what extent this is always the case when CS is used in a language-learning context is difficult to determine, but the critique can still be considered relevant, especially in the context of multilingual classrooms.

However, despite critiques of CS as a teaching practice, bilinguals do still code-switch for a number of social and discursive factors (Bullock & Toribio, 2009, p. 10), some of which were detailed in the previous section. The following section examines the aspects of gaming and gender as potential factors to CS.

2.4.5 Code-switching, Gaming, and Gender

The default language of interaction in communication in a lot of game spaces is English (Sylvén & Sundqvist, 2012, p. 303). In order to understand the linguistic L2 input found in these games, it is a given that a player must acquire a certain level of proficiency in English to be able to play. It is therefore likely that "successful and frequent players of such games who do not have English as their mother tongue acquire some of their L2 proficiency in the activity of gaming" (2012, p. 303-304).

Few studies have been done on the potential relationship between gender, CS, and gaming. Likewise, few studies on CS and gender in the context of Norwegian L2 English speakers have been conducted. Some important contributions have been made in terms of research on gaming and CS among Scandinavian L2 English learners, however. A study by Piirainen-Marsh (2010) examined the social organization of video gaming activities between young boys while playing a fighting game. Findings in this study found that CS was a key resource for organizing the players' participation in the game, managing transitions from one type of activity to another, displaying heightened involvement in certain events and scenes, and as a way for players to co-construct affect while evaluating and enjoying the game (2010, p. 3012). Leppänen (2007) is another example of a Finnish study on CS in media contexts. Although the main focus of this study is just gaming, one example of CS in a gaming context is outlined. The findings in this example suggest that CS is used as a tool for negotiating actions and activities related to the players as they play a game (2007, p. 157). What is interesting about this example is that it suggests an understanding of using CS and the use of English expressions, in this case, to be "important not only in terms of succeeding in the game activities, but also in terms of establishing and negotiating the identity of an expert player" (2007, p. 157). In this sense, the same way language choice and CS can be used to construct a gender identity, language choice and CS in the context of gaming can be utilized to construct a sort of 'gamer' identity.

3 Methodology

The project was conducted in collaboration with a high school in the municipality of Steinkjer in Trøndelag, Norway. This school was part of a project in which schools all over Trøndelag sent in proposals for potential research projects in various subject fields that could be conducted at their schools. These requests were listed through an ad on NTNU Bridge (2023), which is a career portal developed by NTNU. The high school had sent in a request for research on the use of gaming in English teaching at their school—a request which was fairly broad and left much up to interpretation in terms of what a project at this school would involve. There was consequently considerable leeway in terms of defining a research question(s) to answer this request. The school's main wish was to be provided with an activity that was applicable across different subjects that they could replicate once the project had ended.

Based on conversations with the teachers at the school and an initial review of literature on gaming research, a focus on gender-based differences in gaming and language choice in the language-learning classroom was considered to be a fruitful basis for the project. The aims of the project were in this sense outlined based on the lack of research in Norway on CS and gaming in language-learning classrooms, specifically with a perspective on gender and language choice, and on the school's communicated wish for research on gaming in the English classroom.

Answers to the research questions were sought through a mixed methods approach, which included both quantitative and qualitative approaches. Data for the study were collected through a questionnaire and a gaming task completed by both female-only and male-only groups, as well as interview data collected from some of these groups. The questionnaire was designed to gather information about each participant's gaming habits and self-reported proficiency, and thus provide the researcher with grounds to evaluate the relationship between these factors and the findings in the gaming task. The gaming task was designed to provide data that would help answer the first three research aims of this project, which concern themselves with 1) language choice, 2) types and functions of CS in the data material, and 3) differences between male and female participants in terms of research questions 1 and 2. The interview questions were designed to answer the fourth and last research question, and thus provide insight into how the participants perceived their own language use when gaming and the usefulness of switching between languages while gaming. The overall sample consisted of five female groups and three male groups, each containing a minimum of two and a maximum of four participants. In total, 16 girls and 11 boys participated.
The following section has been divided into four parts: 1) preparatory work; 2) data collection procedure; 3) data processing procedure; and 4) data analysis procedure. The

section on preparatory work describes the preparations and planning that took place before the data collection. The section on the data collection procedure outlines the actual data collection, and how this occurred. The section on data processing details how the data was organized and selected for further analysis. Lastly, the section titled 'data analysis procedure' provides an account of how the data will be analyzed.

3.1 Participant Criteria and Campling

The school was given the task of finding participants for the project according to the participant criteria set by the researcher. Four central criteria were established: 1) participants had to be between the ages of 15 and 20; 2) participants had to be enrolled in their first year of upper secondary grade; 3) participants had to be proficient in both written and spoken Norwegian; and 4) participating classes should preferably have an even distribution of gender. The factor of age in language learning relates itself to the critical period hypothesis (CPH), in which there is believed to be "an ideal window in which optimal L2 acquisition occurs: the younger the better" (Acquah & Katz, 2020, p. 2). In the context of DGBLL, younger students might therefore be more receptive to game-based language learning input. With this in mind, both age and grade were listed as criteria to avoid large gaps in age among the participants and consequently potential age-based differences.

Language was listed as a criterion to ensure that the participants were proficient enough in both written and spoken Norwegian to be able to understand what partaking in the project would entail. Participants also needed to be able to answer the questionnaire questions and the interview questions, both of which were given in Norwegian. The decision to provide these tasks in Norwegian and not in English was based on information provided by the school concerning the general level of proficiency in Norwegian among students at the school. The majority of students who attended the school were found to be proficient enough in Norwegian to be able to understand it both in writing and orally. The choice to do these tasks in Norwegian was based on this information and the necessity for efficiency in the data collection procedure. By providing these tasks in a language that the majority were found to master, the aim was to make the process of communicating and understanding the goal of each task easier for both the researcher and the participants. However, there were no specific requirements in terms of native language. This decision was based on two factors: 1) if only participants with Norwegian as their L1 participated, potentially beneficial perspectives from students with other L1s would be ignored, and 2) including students with other L1s than Norwegian provided the opportunity to witness CS to other languages than Norwegian. Hence, no requirements were put in place for what languages the participants had to be native in.

No specific requirements were set for the program of study, but the initial intention was to select general studies classes because they typically have a more balanced gender distribution compared to vocational studies classes which often lean towards predominantly female or male. However, the classes that were chosen to participate were classes with a very uneven distribution of gender. As a result of this, the data collection was split into two sessions: one session containing a female-dominated class and the other session containing a male-dominated class. Splitting the data collection allowed for a more balanced representation of gender in the datasets, thus providing the data necessary to be able to conduct a gender-based comparison of the findings.

The overall sample for the project consisted of data collected from two data collection sessions involving eight groups. Five of the groups belonged to one class and the remaining three belonged to another class. The first data collection session took place in November of 2022, in which a general studies class specializing in art studies participated in the project. This class had a total of 21 students with an uneven gender distribution of four boys to seventeen girls. However, on the specific data collection date for this class, only three boys and sixteen girls were present. The class was divided into five groups: three female groups with four participants in each, a male group with three participants, and a smaller female group with three participants. The second data collection session took place in January of 2023 and involved a vocational studies class specializing in technical and industrial production. This class had a total of 13 students with a gender distribution of four girls and nine boys. On the data collection date for this class, only two girls and eight boys were present at the date of data collection. The boys were divided into two groups with four participants in each, while the two girls were put together in a separate group.

It would have been possible to examine gender-based differences in terms of language choice and CS in mixed groups as well. However, splitting the participants into groups based on gender was a way to limit the scope of the current thesis, and, consequently, the number of variables to analyze and discuss. By sorting the participants into female-only and male-only groups, findings in a group could be connected to its gender, rather than findings within each group to specific individuals. The study object for this project would therefore be a group rather than just individuals, allowing for more data for each study object. Given the short duration of the sessions, it is likely that there would only be a few minutes of speech for each individual participant. This would make it more demanding to discuss and analyze the material, as there would be little data available on many different participants. The decision to divide the participants into groups based on their gender was therefore considered the most fruitful way to examine the study aims of this project.

3.1.1 Ethical Considerations and "Sikt"

The project was reported to and approved by Sikt (Norwegian Agency for Shared Services in Education and Research) before the data collection began. Sikt is a public administrative body under the Ministry of Education and Research in Norway that provides risk assessments for different types of projects in terms of ethics and data protection regulations (Sikt, 2022). The application process involved sending Sikt documentation of research questions, the overall aims of the study, plans for data processing for the project as well as a draft information letter and consent form to be given to the participants. Less than a month after the application was sent, the project was approved, and data collection began. The data collection and processing procedures described in the following sections are therefore considered ethically sound and in line with data protection regulation laws in Norway.

3.1.2 Information Slip and Consent Form

The outline for the information slip was based on a template developed by Sikt. The information slip contained a detailed description of what participating would mean for the participants, as well as how the data collected for this project would be handled during and after the project had been completed. The overall aims of the project were mentioned, but the actual research questions that the data would contribute to answering were purposely left out.

The consent form emphasized that by consenting to participate in the project, the participants consented to partake in all three parts of the project: the questionnaire, the gaming task, and the post-gaming interview. These three parts were initially split into three separate options in the consent form, as to allow the participants to only consent to participate in certain parts of the project. However, this option was discarded after careful consideration of the potential difficulties this could have created. It is likely that some of the students would not have consented to certain parts of the project if given the option to opt for something, specifically the parts of the project that involved things other than gaming tasks. Lack of consent to certain parts of the data collection process would therefore mean that the groups had to be organized according to what parts of the project the participants consented to as well as their gender, a process which would raise serious concerns in terms of being able to compare results across the different groups. The decision to have the consent form include only one option to partake in all or none of the parts of the project was therefore not only based on the issue of logistics but also the issue of comparability of the results later on.

3.2 Data Collection Procedure

As mentioned in 3.1., the data was collected on two separate dates. The first collection occurred in November of 2022, and the second in January of 2023. Each data collection day followed the same structure. First, the students were given details about the project in their classrooms and asked to sign the consent form if they wished to participate. All the information provided in the slip was read out loud by the researcher, and the participants were given the opportunity to ask questions if they had any. Once the information slip had been discussed, the consent form was handed out. All pupils in both classes agreed to participate in the project, thus, groups could be put together without having to consider the aspect of potentially non-consenting participants. Both classes were divided into predetermined groups established by the teacher according to the researcher's criteria.

Once all information had been discussed and groups were established, the participants were led to the gaming room where they were seated in groups. All tasks were completed inside of this room, including the interviews after the gaming task. Inside this room, groups were seated in a predetermined ascending pattern in which the first group was seated closest to the door, the second group next to this group, the third group next to this group again, and so on. Seats were assigned beforehand in order to match the answers in the questionnaire sheet with the audio recordings. Only three groups could be in the room at a time, thus, groups not playing the game remained in their classroom to work with tasks provided by their teacher. Figure 1 illustrates how the gaming room was set up.

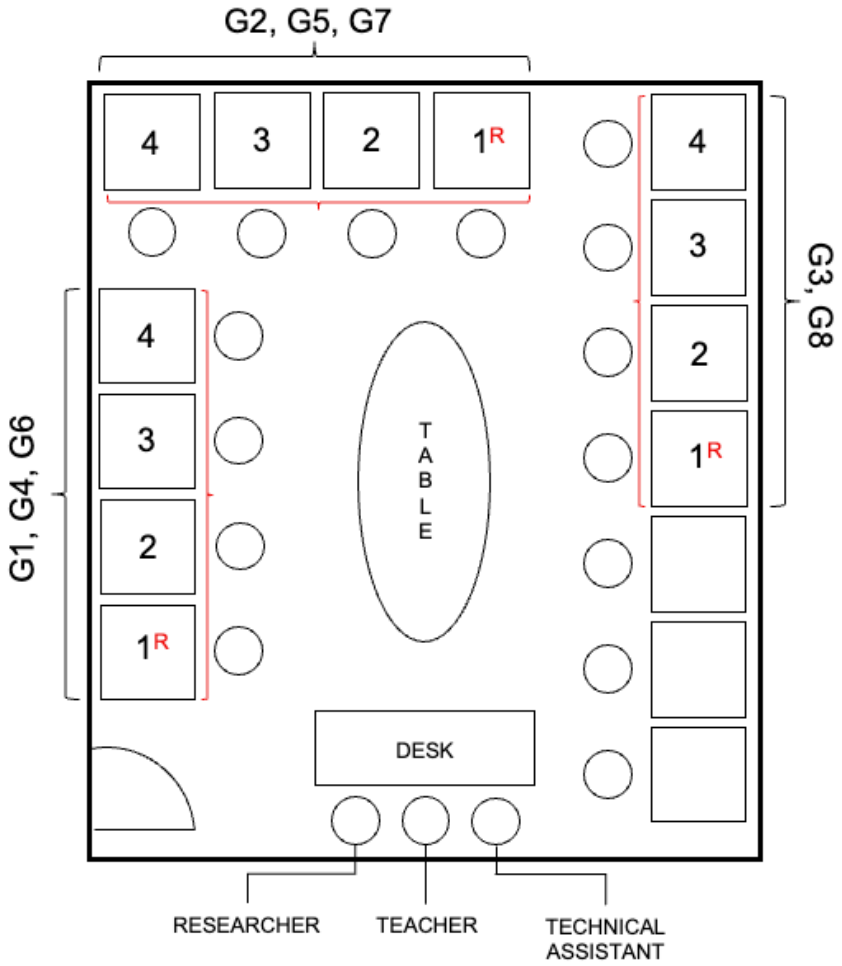

Figure 1: Gaming room overview

Desks were organized into groups beforehand with numbers between 1 and 4, as seen in Figure 1. These numbers would serve as a way of identifying each participant in the analysis of the questionnaire answers and the gaming task, while still keeping the participants anonymous. The computers marked with the number 1 recorded the sound and the screen for each group. The uppercase red R highlights what computers were responsible for recording audio, with the red brackets signifying the range of each recording, i.e., which computers were recorded in each group. The brackets on the outside of the figure show where the groups were seated. Group names have been abbreviated to G1, G2, etc.

All desks lined against the walls had computers on them, but only 12 out of 15 total desks were used. The circles illustrate how the chairs were placed in the room. The table in the middle of the room had several chairs around it as well, but these have been omitted from the illustration for simplicity. During the gaming sessions, the researcher, subject teachers, and the research assistant sat behind the desk in the lower part of the illustration. All three remained seated there during the gaming sessions.

In the first data collection in November, the questionnaire data and gaming data had to be collected in two bulks as there was only space for three groups at a time in the gaming room. The questionnaire and gaming data were therefore collected from groups G1 through G3 first, and then G4 and G5 in the second bulk. For the second session in January, there were only three groups in total, thus, questionnaire data and gaming data for groups G6 through G8 could be collected at the same time.

3.2.1 Recording Equipment

The presence of a recording device can in some cases make language users feel self-conscious, which in turn might influence their linguistic behavior (Hill, 2013, p. 110). For this project, this concern affected the choice of recording equipment for the gaming session and the interviews. Two types of recording equipment were used, one for the gaming task and one for the interviews. In the gaming task, on-screen activity and audio were recorded using the program OBS Studio (Open Broadcasting Software Studio). OBS Studio was chosen for this task based on two things: firstly, the program was free to download and easy to install. Efficiency was of utmost importance when collecting data since there was only a set amount of time at our disposal in which the participants could partake in the project. It was therefore important to use a recording program that was easy to understand and quick to set up, which OBS proved to be. Secondly, the audio settings in the program allowed for high-quality audio recordings of activity in the web browser and in the room itself, while simultaneously recording the screen. In other words, the entire session could be captured in a single file rather than through separate files for audio and on-screen activity. This allowed the researcher to examine their actions in the game and the accompanying conversations as one cohesive activity through one file, rather than two separate activities through two separate files.

The second recording equipment that was used to record the interviews was a dictaphone borrowed from NTNU's Institute for Language and Literature. The decision to use a dictaphone was based on the quality of the audio it could provide and the aspect of confidential file handling. Using a device such as a smartphone to record was not an option, because this would not allow for the appropriate confidential handling of the recorded file. A dictaphone was therefore used to record the interviews.

3.2.2 Questionnaire

The main purpose of the questionnaire was to collect general data about the participants that would serve as background to the analysis and discussion of the gaming task, and in the interviews as well. The questionnaire had to be filled out by hand and contained questions mapping each participant's gender identity, age, perceived level of proficiency in English, as well as the estimated amount of time they spend gaming each week.

Participants were also asked to list their first language(s), i.e., their L1(s). All questions were in Norwegian to avoid potential confusion concerning the meaning of each question. The questionnaire was designed to be as short and concise as possible due to time limitations. Both data collection days occurred on days where the usual English lesson lasted for around three hours, including a 30-minute lunch break halfway through. The total amount of time available to collect data was therefore around 2.5 hours per data collection day. Thus, the questionnaire was kept short to take up as little time as possible while still collecting necessary data.

The questions regarding English proficiency and gaming amount had to be answered according to a rating scale, in which the participants were asked to pick the option that fits them as best as possible. Possible responses ranged from "very low degree of proficiency" to "very high degree of proficiency". There were several intermediate options between these two options, as well as an either/or option. The participants could also choose the option to answer "I don't know" if they wanted to do so. The question regarding gaming habits contained intervals relating to the approximate amount of hours per week spent playing, with options ranging from the lowest alternative of "I don't play games" to the highest alternative of "12 hours or more". The participants also had the option to not disclose any amount of time spent playing. The only other question on the questionnaire that contained options for the participants to choose from was the question regarding gender identity. Four options were provided in this section, namely male, female, and non-binary, as well as an option to not disclose this information. The remaining questions regarding age and native language(s) had a blank section below them where the participants could fill in their answers.

The questionnaire was distributed and carried out before the gaming task. The participants were instructed where to sit inside the gaming room and placed according to the groups they had been divided into before leaving their classroom. All the questionnaires had been marked with a number between 1 and 4 in the left-hand corner to signify the participant number, as well as a number between 1 and 8 in the right-hand corner to signify each group number. All the computers that were going to be used had also been marked with a number between 1 and 4 beforehand. Once the participants had been seated, the questionnaires were distributed in a manner where the participant number matched the number that the computers were marked with, and the group number matched where each of the groups had been placed together. This would allow for comparison between individual as well as group performance in the recordings with the answers provided in the questionnaire.

3.2.3 Gaming Task and "Pico Park"

The purpose of the gaming task was to construct an environment for communication that was free from expectations and academic pressure in which the participants could play a game together and communicate freely. The data collected in the gaming task accounted for most of the data analyzed.

All the written and spoken information up until this point had been conveyed to the participants in Norwegian. Details on the questionnaire had also been given in Norwegian to avoid any confusion regarding what the participants had to do before they could begin the gaming task. Once the questionnaire had been answered and collected, the researcher switched to English. Instructions regarding how to play the game and how long they would be playing were given in English to mark a shift between the preliminary work of answering the questionnaire, logging into Canvas, testing the audio, etc., and the actual gaming session. The participants were told to 'treat this as an English lesson'. In regular English lessons in Norway, students are usually expected to speak English when interacting with each other or their teacher. The goal of instructing participants to think of the activity as part of a regular English lesson was therefore to see how the participants would respond to this implicit expectation in terms of language choice and CS. The participants were given a short introduction to the game they would be playing by the researcher and reminded that their session would be screen-recorded and audio-recorded. The gaming task lasted for approximately 20 minutes.

The researcher stayed in the room to observe the participants as they interacted with the game. The researcher interacted as little as possible with the participants while they were doing their task, instead observing from a distance as they played. If the participants encountered any type of problem with the game during the session, the researcher tried not to intervene; it was encouraged instead that the participants should try to solve potential problems on their own. The participants were made aware of this as well before the task began.

The game chosen for the participants to play was the cooperation game *Pico Park*, which is a game involving working together with your friends to solve puzzles. The game was considered suitable for the project on the basis of its simplicity and the aspect of players needing to communicate and collaborate in order to advance in the game. It was believed that the simplicity of the game in terms of visual design and gameplay goals would make the participants more interested in solving the puzzles together.
Another aspect of the game that made it suitable for the project was the design of the characters in the game, specifically in terms of gender neutrality. The design of the characters is somewhat similar to a cat in that they have what can resemble animal ears on the top of their head. The ratio between the head and body of the characters gives them a cartoonish appearance, which is further highlighted by their large eyes and tiny

hands and feet. Figure 2 below depicts the design of the characters and an example of what a level in the game could look like (Steam, 2021).

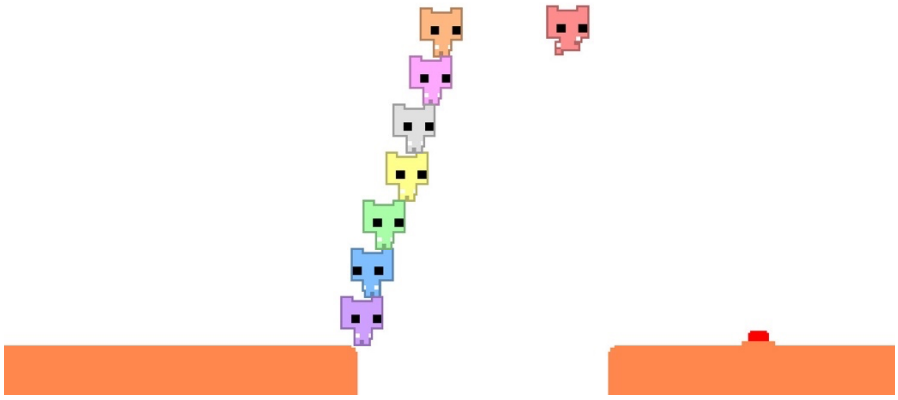

Figure 2: Example illustrating character and level design in the game 'Pico Park'

The image shows eight characters with different colors working together to get one player across to another platform. The picture illustrates the simplicity of both the character and level design in the game, which were part of the reasons why this game was chosen for the project.

The game is divided into different levels that get more complicated as the player continues to play their way through the game. The first 5-8 minutes of the game consist of four short and fairly easy tutorial levels. Once this part is over, the player can begin playing different levels, each with an approximate length of 2-4 minutes depending on level difficulty. During the 20 minutes the participants had to play with this game, it was expected that they would at least complete the tutorial portion of the game as well as 2-3 levels. It was expected that the number of levels completed would vary between the groups, which is why the participants were not explicitly told how many levels they needed to complete. Rather, the participants were encouraged to complete as many levels as they wanted to within the timeframe they were given.

3.2.4 Interviews

Interviews are a type of interaction between participating members that requires will and interest from both sides to reach their potential (Prior, 2018). Conducting interviews group-wise can be a way to get insight into shared beliefs and understandings of a topic while still allowing for individual differences to be voiced: "They [group interviews] enable participants to hear the views and experiences of their peers, and cause them to

reflect back on their own experiences and thoughts" (Al Ghazali, 2014 p. 7). The purpose of the interviews was to gain insight into how the participants perceived the game that had been played, if and how they had used games in other subjects, their individual gaming habits outside of school, and have them consider whether there could be any connection between choices of language and gender in this specific context and gaming in general as well. They were also asked to consider whether they had spoken to each other in more than one language and to reflect on their own language use while gaming.

All three of the male groups, i.e., G1, G7, and G8, were interviewed, but due to time constraints, only three of the five female groups were interviewed, i.e., G2, G5, and G6. The participants were interviewed together in groups to make them feel more at ease with the situation, and to encourage them to speak more freely about their thoughts and experiences surrounding the task and the overall topic of gaming. The interview was conducted in Norwegian between the researcher and one of the groups at a time. The interviews were conducted in Norwegian to make it easier for the participants to express their thoughts as efficiently as possible. The setting of an interview can be daunting to some, which is why the participants were not asked to speak English during this task. The researcher informed the participants when the audio recorder was turned on and when it was turned off. They were given the opportunity to ask the researcher questions once all the interview questions had been asked.

The setup of the interviews allowed the interviewer to ask follow-up questions where it felt needed, e.g., most participants were asked to deliberate on why they might believe that there are any differences between how males and females play games. In cases where the participants provided very short answers to the questions, follow-up questions were asked to encourage them to reconsider the question and perhaps provide more context to their answers. This also meant that not all of the interviews were conducted the same way. Not all of the participants needed the same types of follow-up questions, but many needed to be prodded quite a bit before being able to provide answers that were longer than a few words. A sense of shyness among several of the participants made it difficult to make them elaborate on their thoughts and beliefs in the interviews, which meant that each interview had to be tailored to some extent to fit the specific group being interviewed to encourage as many participants as possible to express their thoughts on the questions that were asked. This meant that some questions asked in some of the interviews might not have been mentioned at all in other interviews. This raises concerns about the comparability of the answers provided during the interviews; this will be addressed further in the analysis of the interview data.

3.3 Data Processing

The following section details the data processing procedure of the current project. The majority of the data collected were audio recordings from the gaming sessions and the group interviews. Recordings from the gaming task constituted approximately 6 hours of data with each recording being around 45 minutes long. For each of these 45 minutes, the first 15 minutes contained audio of the participants entering the room, audio of the participants being handed the questionnaire, completing it, and turning it back in, and the researcher giving instructions on how to play the game. The gaming task lasted for 20-25 minutes, and the remaining 5-10 minutes of each of these recordings contained audio of the participants preparing to leave the gaming room and the conversations that occurred between them as they left the room. The interviews consisted of around 25 minutes of data in total, with each of the five interviews lasting around 5-10 minutes. All recordings were transferred to an encrypted USB flash drive where they remained stored until the end of the project. All recordings were deleted once the project was finalized.

3.3.1 Questionnaire Data

Answers to the questionnaire task were organized and put into tables in Microsoft Excel. The findings were organized according to group numbers and participant numbers written on each of the questionnaire sheets. All answers were then converted into numbers in order to calculate the mean values for questions 1 and 2 in the questionnaire.

3.3.2 Transcription of The Gaming Task and The Interviews

Since the recordings were started ahead of the participants entering the room, there were around 10 minutes of silence at the beginning of each recording that had to be discarded. Thus, of the 6 hours of data available, 2.6 hours were transcribed from the gaming session. All conversations recorded before the gaming task were not transcribed but were not overlooked either as potentially relevant to the project.

As Bucholtz writes: "Embedded in the details of transcription are indications of purpose, audience, and the position of the transcriber toward the text. Transcriptions thus testify to the circumstances of their creation and intended use" (2000, p. 1440). The issue of bias is inevitable: "There is in fact no transcription notation system capable of providing to the researcher a completely accurate and comprehensive narrative of the original performance: all transcription is in principle *selective* and entails the inevitable risk of systematic *bias* of one kind or another" (Kowal & O'Connell, 2014, p. 65-66). Transcription devoid of a writer's subjectivity is in that sense impossible, but a truly objective transcription is not necessarily the goal either. Being aware of the complexities of the transcription process is therefore considerably more useful than trying to achieve

the unachievable in this case. With this in mind, all audio recorded during the gaming session and the interviews were transcribed manually by the researcher, i.e., no transcription program was used to automatically transcribe the audio files. Although utilizing an audio-transcription program would have been a considerably less time-consuming way to process data, few programs have an adequate understanding of Norwegian dialects to be able to transcribe it accurately. Thus, to capture words and phrases specific to the Norwegian dialect found in Steinkjer, all audio files were transcribed manually in Word.

Two types of transcription standards were used. For the gaming task, transcriptions followed a semi-phonetic transcription standard, which is a standard that conserves dialect differences in transcription (Øvrelid et.al, 2018). A sentence such as "I don't know", i.e., "Jeg vet ikke" was therefore transcribed according to the dialect pronunciation found in Steinkjer, i.e., "Æ veit itj". The interviews were transcribed in standardized Norwegian, i.e., 'bokmål'. The decision to do this was based on the fact that the interview data was not data that was going to be analyzed in terms of language choice or CS, but in terms of the beliefs and behaviors the participants expressed. Thus, the interviews did not need to be transcribed according to the participants' dialect. It was therefore easier for the researcher to transcribe the data in bokmål.

The en-dash symbol (–) was used to indicate instances where speech was cut off by stuttering or overlapping speech, etc. Unintelligible speech, overlapping, and sounds such as laughing and coughing were marked by being enclosed in square brackets, e.g., "[unintelligible]", and "[overlapping sounds]". In the instances where the participants referred to each other by their names, the names were not transcribed directly, but replaced instead with "[name]". Differences in pronunciation were noted simultaneously in regular brackets to indicate instances where certain words that could either be Norwegian or English were spoken with a specific accent, e.g., "hallo (Norwegian pronunciation)". Phonetic variations such as dragged-out vowels were not provided through phonetic transcription but indicated by visually making the words longer, e.g., "nooo", "woooow", etc.

3.4 Data Analysis Procedure

The following section explains the analytical framework for the upcoming analysis. The analysis has been split into two sections, in which the first section details findings from the questionnaire and gaming task quantitatively. The second section qualitatively analyzes the transcripts from the gaming task from one female group and one male group to consider whether any gender-based differences in the motivation and function of CS can be identified. Lastly, interview data is analyzed thematically to examine the

participants' attitudes toward the overarching theme of gaming, language learning, and gender.

3.4.1 Questionnaire Findings

Findings from the questionnaire are presented in tables and serve as reference points for analysis of the gaming task. Findings from the questionnaire are not treated as statistically significant or generalizable and applicable on a large scale, as the project is in itself too small to be considered statistically significant. Findings from the questionnaire are therefore to be understood as part of the general mapping of the sample, not necessarily as decisive factors in explaining how and why the participants have or have not switched between languages, etc.

3.4.2 Gaming Task Findings

Findings from the gaming task are examined in two separate sections: in the first section, the matrix language, i.e., the dominating language in all of the groups is identified with respect to Myers Scotton's (2009) Matrix Language Framework (MLF). Dominance is calculated according to which language accounts for more than 50% of the word uttered. All words in each of the groups were therefore counted manually first. Word totals were put into tables to illustrate how many words each of the groups produced in English or Norwegian. The second section of the gaming task analysis is the CS analysis, which the next section details.

3.4.3 Code-Switching Analysis

The CS analysis examines the transcripts from the gaming task of one of the female groups, G2, and one of the male groups, G7. Only one group from each gender was chosen for analysis. The decision to only examine two groups was made based on the vast amount of data available because an analysis of more than one group for each gender would have merited a much larger analysis than this thesis would have space to provide. Another reason why only two groups were chosen is that the findings in these groups aligned very closely with what was found in the other groups. These groups were therefore considered to be representative of general findings in terms of language choice and CS in most of the groups. Lastly, a key reason why these two groups were the only ones chosen for analysis, was based on the amount of CS that occurred within these groups compared to the others. As the ensuing analysis and discussion will address, most groups, almost regardless of gender, code-switched very little. Thus, an analysis of CS would need to examine groups where examples of CS were more apparent. With this in mind, the female group, G2, and the male group, G7, were picked for analysis.

Appel and Muysken's (2005) concepts of inter-sentential and intra-sentential switching were utilized to account for the different types of CS identified in the data material. Types of CS were therefore identified on where in the sentences the switching occurred. Functional categories for CS were derived from two studies, Piirainen-Marsh (2010) and Kemaloglu-er and Özata (2020), respectively. Piirainen-Marsh (2010) examined the use of code-switching as a tool to organize the action and positioning of participants in games. According to Piirainen-Marsh, CS within the gaming context can be considered "a multifunctional resource through which players recontextualise the sense of ongoing action and reposition themselves with respect to it" (2010, p. 3021). In this sense, code-switches "serve specific local functions in organizing the players' participation and achieving particular alignments with one type of activity to another" (2010, p. 3027). Kemaloglu-er and Özata (2020) explored how EFL students who share the same native language CS in group work, in which CS was found to form "a positive atmosphere in the groups with the potential to increase motivation and reduce stress" (2020, p. 1452). Additionally, this study found CS to be "a builder of solidarity among the learners since it was employed to make humour and address the partners in the shared culture and thus support the 'we' code in the very nature of EFL classrooms where often students with the same native language study" (2020, p. 1452).

After examining the data, three categories of function were found to be relevant for the analysis of the data in the present study. The first two categories, *organizing action and position of participants* and *displaying heightened involvement* are derived from Piirainen-Marsh (2010). The third category, *emotional expression*, is derived from Kemaloglu-er and Özata (2020). These categories can be defined in the following way:

a) *Organizing action and positioning of participants*, in which "code-switching serves to recontextualise the sense of what is going on and signal transitions for instance at the level of topic, activity type, participants roles or mode of talk" (2010, p. 3019). CS with this function can also be applied to activities occurring outside of the game while playing, in which CS can be used to "signal momentary disengagement from the fictive word and to accomplish actions that organise activities in the material setting" (2010, p. 3021).
b) *Displaying heightened involvement,* in which CS is used to express involvement in action on the screen, either in terms of agreement or disagreement with the unfolding action. Heightened involvement as it is analyzed in the current project is considered to be displayed through interjections, exclamations, profanity, etc.
c) *Emotional expression*, in which CS appears as a way to "express […] emotions while giving sudden emotional reactions or to make humour" (Kemaloglu-er & Özata, 2020, p. 1450).

What is important to note about these categories, especially those borrowed from Piirainen-Marsh, is that they have been developed to be especially relevant to the studies in which they appear. In other words, these categories are not necessarily directly applicable to the project at hand. The ideas presented in these studies surrounding these categories can still be considered relevant to the project, which is why the definitions of some of these categories have undergone some adjustments to be more applicable to the data discussed in this paper. Thus, these categories have been used to identify cases where CS occurs as a resource for making sense of what is going on on-screen, a way to display involvement in action occurring in the game, and as a way for players to express feelings and opinions towards in-game action and the game overall. Analysis of the gaming task will exemplify instances of these functions as they occur in G2 and G7 through excerpts from the gaming task transcripts of these groups.

3.4.4 Interview Analysis

Findings from the interviews are analyzed through a thematic analysis (Braun & Clarke, 2022) in which common themes in the participants' attitudes towards their own language use in the gaming task, their attitudes towards switching between languages in a language-learning context, and their thoughts on potential gender-based differences in language and gaming were identified. As with the questionnaire data, the findings in the interviews are loosely considered as potential motivations for CS during the gaming task. The participants' attitudes towards the current project are therefore not treated as objective explanations for CS, but as potential factors that might have influenced the participants' choice to code-switch or not to code-switch.

The interview excerpts analyzed in the analysis were translated from Norwegian to English for the purpose of communicating the findings in a way that would allow the reader to understand the meaning as it was expressed in the source language. However, translation between languages in a context such as this involves interpretation of the message communicated in the source language, in which the translator—or the researcher, in this case—has to interpret the message that has been communicated and transfer it into the target language in a way that preserves the intended meaning of the original message (van Ness et.al, 2010). This process is not unproblematic, considering that subjectivity can affect the translation process to the extent that the intended meaning in the source language can be altered to favor an interpretation that serves certain research aims. Keeping this in mind, the translation process from Norwegian to English was rigorous in terms of keeping the meaning as close to the source language as possible. The translated interview excerpts discussed in the analysis are therefore considered sufficient considering the aims addressed above.

4 Analysis

4.1 Questionnaire Findings

The most central questions in the questionnaire were questions 1 and 2, i.e., Q1 and Q2, because these questions provide an estimated degree of proficiency for all participants as well as a rough estimate for hours spent gaming per week. The findings from these questions were considered central because they could help indicate a possible correlation between gaming habits and proficiency in terms of language choice in the gaming context.

By representing the findings numerically, it is possible to effectively examine the relationship between proficiency and gaming habits. A possible relationship between these and the choice of matrix language will be addressed later in the discussion. The answer options were converted into numbers to allow for the calculation of the mean value of the options the participants chose. Findings from Q1 and Q2, in the questionnaire were provided in tables where all the answer options were represented as numbers ranging from 1 to 5. Each number corresponds to one answer option, e.g., answer option 1 for the question regarding proficiency corresponds to the first answer option in the questionnaire: "very low degree of proficiency". Thus, option number 2 corresponds to the next answer option: "low degree of proficiency". Since mean values are affected by extreme values, the answer options "I don't know" and "I do not want to disclose" are listed as non-applicable, i.e., N/A and not a numeral, because these options cannot be placed on the same scale as the other answer options in Q1 and Q2. Table 1 shows what number corresponds to which answer option in the questionnaire for Q1. All answer options except "I do not want to disclose" in Q2 were also reduced to numbers, see Table 2.

Table 1: Degree of proficiency

Options (in numbers)	Degree of proficiency
1	Very low degree of proficiency
2	Low degree of proficiency
3	Neither very high nor very low degree of proficiency
4	High degree of proficiency
5	Very high degree of proficiency
N/A	I don't know

Table 2: Hours spent gaming per week

Options (in numbers)	Hours spent gaming per week
1	I don't play games
2	Less than 1 hour
3	1-4 hours
4	4-8 hours
5	8-12 hours
6	12 hours or more
N/A	I do not want to disclose

4.1.1 Self-Reported Language Proficiency and Gaming Habits

The findings from Q1 and Q2 can be represented as shown in Tables 3 and 4 below. The first column indicates each participant's number, and the other columns indicate what group they belong to. Group numbers have been abbreviated to G1, G2, G3, etc.

Table 3: Q1 Perceived proficiency findings

Participant number	G1	G2	G3	G4	G5	G6	G7	G8
1	5	4	5	4	5	4	3	3
2	5	4	5	4	4	3	3	3
3	3	4	2	4	5		2	3
4		5		4	2		4	3

Table 4: Q2 Gaming habits findings

Participant number	G1	G2	G3	G4	G5	G6	G7	G8
1	3	5	5	6	3,5	2	3	2
2	6	5	2	1	5,5	1,5	4	4
3	6	5	3	N/A	4		3,5	2
4		2		6	5		6	5

In instances where participants chose two answers, answers were put into the table with a decimal, e.g., participant number 1 in G5 chose two options when answering Q2 to signalize that their gaming habits fell somewhere in between options 3 and 4, i.e., between 1-4 hours and 4-8 hours of gaming per week. The halfway point between 3 and 4 is 3,5, thus, their answer was registered as 3,5 in the table for Q2.

The mean value of the participants' perceived proficiency and gaming habits were calculated by adding together all relevant numbers in the table and dividing these by the number of participants, i.e., mean values for the male groups in Q1 and Q2 are calculated by adding together all answers provided by the male participants and divided by the number of male participants, i.e., 11. Mean values for the female groups are calculated the same way, but divided by the number of female participants, i.e., 17. It is important to note that the mean value for gaming habits for the female groups is divided by 16 and not 17 because one of the female participants chose to not disclose an answer to this question, see Table 4 above. Mean values for male and female groups are provided in Table 5 below.

Table 5: The mean value for male and female groups to Q1 and Q2

Category	Male groups	Female groups
Perceived proficiency	3,08	3,78
Gaming habits	3,71	3,62

Table 5 shows that proficiency is where the male groups and the female groups deviate from each other the most, with the male groups measuring an average of 3,08 in self-

reported proficiency and the female groups averaging in at 3,78. Thus, the average male participant considered themselves to have "neither very high nor very low degree of proficiency" in English, whereas the average female participant placed themselves closer to "high degree of proficiency" than "neither very high nor very low degree of proficiency". Gaming habits were more even, with an average of 3,71 for the male groups and 3,62 among the female groups. Most male participants seem therefore to play games closer to 4-8 hours per week, while most female participants play a little bit less than this. The gaming habits of both the male and female participants were in other words surprisingly even.

The use of a mean value to explain gaming habits can be considered problematic because one of the options was a virtually unbounded upper limit. Answer option 6 in Q2 states "12 hours or more", which in theory could be anywhere between e.g., 12 and 100 hours. This is significantly more than e.g., 1-4 hours per week, which might make it difficult to say exactly how many hours some participants spend gaming per week. The purpose of Q2 is, however, not to gather an exact amount of hours that each participant spends gaming per week, but rather to indicate a rough estimate of the participants' gaming habits for the sake of comparison between the male and female groups. Having an unbounded upper limit might have presented some issues to the analysis if a significant amount of participants chose this answer option since there would be no way of knowing whether a participant played games for 12 hours per week or 100 hours per week. The ranges provided would therefore have been insufficient in capturing the gaming habits of the participants if most of the participants had chosen answer option 6 because this would mean that all options below 12 hours or more were too low. As the mean value for Q2 indicates, most participants seem to have felt represented in the ranges provided. The mean values for proficiency and gaming habits can therefore be considered adequate for the analysis at hand.

4.1.2 Age, Gender, and L1s

Three participants did not provide an age in Q3. The remainder of the 25 participants did provide an age. 20 of these were 16 years old, and three of them were 17. The remaining two were 15 and 18. The distribution of age is provided in Table 6.

Table 6: Age distribution across all groups

Participant number	G1	G2	G3	G4	G5	G6	G7	G8
1	17	16	16	16	16	16	16	16
2	N/A	16	N/A	16	16	16	16	17
3	15	16	17	16	16		16	16
4		16		N/A	18		16	16

The findings for Q4 regarding gender show that some participants had been placed in a female-only group despite not identifying as female. Some generalizations had to be put in place when sorting participants into groups based on gender, which meant that all participants who were physically female-presenting were automatically placed in a group with only female participants. Although the aspect of gender queerness could offer interesting insights into gender-based differences in language, the findings from groups with genderqueer participants were sorted into binary categories of male and female to avoid having to discard participants from the dataset. The genderqueer participants were female-presenting, which is why their answers have been registered as part of the female groups in the rest of the data. Gender distribution across all groups is provided in Table 7.

Table 7: Gender distribution across all groups

Participant number	G1	G2	G3	G4	G5	G6	G7	G8
1	Male	Female	Male	Female	Non-binary	Female	Male	Male
2	Male	Female	Female	Female	Female	Female	Male	Male
3	Male	Female	Female	Female	Female		Male	Male
4		Female		Female	Female		Male	Male

Most participants had Norwegian as their L1, with some exceptions across the female groups. None of the male groups had any other L1s than Norwegian. Language distribution is provided in Table 8. Some of the participants had more than one L1 which is why the total number of L1s is larger than the number of participants.

Table 8: Language distribution across all groups

L1	Total
Norwegian	24
Thai	2
Arabic	2
Polish	1
German	1

4.2 Gaming Session Findings

Identifying which language is more dominating in each of the groups can help us understand why some participants chose to switch between languages while others did not. Relevant to identifying language dominance is the concept of a matrix language. In Myers-Scotton's Matrix Language Framework (MLF), "codeswitching […] is characterized by a basic asymmetry between the participating languages so that only one language accounts for the uniform structure that prevails in the bilingual clause" (2005, p. 15). According to Myers-Scotton, only one language acts as the source for the critical aspects of the morpho-syntactic frame of the bilingual clause; this dominating language is in this sense understood as the matrix language, while the other language is understood as the embedded language (2005, p. 16). In this analysis, a language was considered to be the matrix language if it constituted more than 50% of the words spoken throughout the gaming session. This was done to simplify the analysis of the data where the focus is not individual clauses but larger amounts of speech. The aim was to create a numerical basis for concluding which language was the matrix language in this larger kind of context. Thus, if it was observed in the material that 50% of the words were spoken in a given language, it was also possible to observe that the dominating language was indeed the source for critical aspects of the morpho-syntactic frame in individual clauses. Matrix language was therefore decided based on word total, which was then the language that constituted the morpho-syntactic structure in each of the groups.

The total number of Norwegian and English words produced in all of the groups was calculated by adding together the number of Norwegian words and subtracting this from the total word count. The remaining words were then the number of English words produced. Some criteria were put in place to provide a word total that was as accurate as possible in terms of being able to identify words as either English or Norwegian. Firstly, filler words such as "oh", "eh", "uhm", etc., were omitted from the word count because they could not be identified as specifically English or Norwegian words in the context in which they appeared. Secondly, unintelligible utterances and laughter were also omitted from the word count. Lastly, all participant names were not counted either, based on the same reasons as with filler words; they could not be identified as specifically English or Norwegian in certain cases. It was therefore considered to be more efficient for the analysis at hand to remove all filler words and names in the word total for all groups. Table 9 illustrates the distribution of English and Norwegian words in the female groups and the male groups.

Table 9: Distribution of English and Norwegian words in female and male groups

Groups	English words		Norwegian words		Word total
Female groups	5508	*89 %*	709	*11 %*	6217
Male groups	1730	*65 %*	940	*35 %*	2670

It was expected that the word total for the female groups would be larger regardless of how much the participants spoke with one another since 5 out of 8 groups were female. It is therefore unsurprising that the female groups produced nearly three times more words than the male groups. As Table 9 shows, 89% of the words spoken across the female groups were in English, while the remaining 11% were Norwegian. Contrastively, the distribution in the male groups is more even, with English accounting for 65% of the words spoken and Norwegian accounting for the remaining 35%. Table 10 illustrates the distribution of English and Norwegian words in each of the groups.

Table 10: Distribution of English and Norwegian words across all groups

Groups	English words		Norwegian words		Word total
G1	933	*96,5 %*	34	*3,5 %*	967
G2	1140	*98,5 %*	17	*1,5 %*	1157
G3	1919	*99,7 %*	5	*0,3 %*	1924
G4	1251	*99,9 %*	1	*0,1 %*	1252
G5	1195	*99,5 %*	6	*0,5 %*	1201
G6	3	*0,4 %*	680	*99,6 %*	683
G7	646	*68,4 %*	299	*31,6 %*	945
G8	151	*19,9 %*	607	*80,1 %*	758

All groups are listed in the leftmost column in Table 10. The columns for English words and Norwegian words have been split into two, in which the left column provides the total amount of words spoken in each language while the right column states percentage-wise how much this accounts for the total amount of words spoken. According to the procedure chosen and described above for identifying the matrix language across larger stretches of text, all groups except G6, a female group, and G8, a male group, had English as their matrix language.

As Table 10 illustrates, explicit instruction to speak English did not necessarily make the participants speak English. G6 did not respond to the first instruction, nor did the group switch to English after being reminded to treat the session as an English lesson. Throughout the 20-minute gaming session, the participants in G6 spoke no more

than 3 words of English. G8 spoke to each other primarily in Norwegian as well, despite also being given both instructions to speak English. G1 and G7 on the other hand, began to speak more English once they had been reminded to do so. Therefore, explicit instruction did not necessarily affect the choice of language in all groups, but it may have swayed some participants to speak more English than they otherwise might have done if they had not received any instructions to speak English.

G2, G3, G4, and G5 were surprisingly consistent throughout the gaming session and spoke almost exclusively in English. These groups were only given one instruction to speak English but chose to speak to one another in English throughout the entire session regardless. These groups were also some of the highest-ranking groups in terms of self-reported proficiency, which could explain why the groups were seemingly willing and eager to speak in English.

4.3 Qualitative Analysis of Code-Switching During Gaming

As previously established, the following CS analysis of the transcripts from the gaming sessions focuses on one female group and one male group, i.e., G2 and G7, respectively. A summary of the questionnaire findings for self-reported proficiency in English, gaming habits, gender identity, age, and L1s in G2 and G7 is presented first. Turning toward the gaming task findings, the matrix language in each of the groups is restated as well as the percentage of words spoken in English and Norwegian in each of the groups. The categories that will be used in this analysis are: 1) organizing action and positioning of participants; 2) displaying heightened involvement, and 3) emotional expression.

4.3.1 Summary of Questionnaire and Matrix Language Findings in G2 and G7

G2 consisted of four female participants. They were one of the female groups with the highest amount of hours spent gaming per week, with three out of four participants reporting that they spent 8-12 hours per week gaming. Only one of the participants in this group spent less than an hour per week gaming. The three participants who played the most considered themselves to have a high degree of proficiency, while the participants who played very little was the only one who considered themselves to have a very high degree of proficiency in English. In total, G2 was one of the highest-scoring female groups in terms of self-reported proficiency and gaming habits, with a mean value of 4,25 for proficiency and 4 for gaming habits.

All members in G2 identified as female and were 16 years old. Two of the participants had Norwegian as their L1, one had Norwegian and German as their L1s, and one participant had Arabic as their L1. The matrix language in the group was English which amounted to 98,5% of the words spoken. The remaining 1,5% of words produced were in Norwegian, all of which were produced by the same participant, participant 4.
G7 consisted of four male participants. The number of hours spent gaming in this group varied between 1-4 hours per week and 12 hours or more per week, but the overall mean value for the group was 4,13, i.e., 4-8 hours per week. The participant who reported playing games for 12 hours or more per week was the only participant who considered themselves to have a high degree of proficiency in English. Two considered themselves to have neither very low nor very high degrees of proficiency, while one participant reported having a low degree of proficiency. Their mean value for proficiency was 3, which was close to the average for the male group total of 3,08, i.e., neither very low nor very high degree of proficiency. The mean value for their gaming habits was higher than the overall male groups' mean value of 3,75, with a total of 4,13.

All members in G7 identified as male, and all participants were 16 years old. All participants had Norwegian as their L1. Although the distribution of English and Norwegian words was relatively even in G7, English still accounted for more than 50% of

the words spoken, which is why the matrix language in this group was considered to be English. 68,4% of the words spoken by the participants were in English, while the remaining 31,6% were in Norwegian.

4.3.2 Organizing Action and Positioning Of Participants

The following examples illustrate cases where the participants use CS as a resource for making sense of what is going on in the game, organize the action that occurs and position themselves according to this, and signalize the transition from one topic or activity to another. In all of the examples, instances of CS are marked in bold. Piirainen-Marsh writes: "[c]ollaborative game-playing involves joint procedures through which players display their orientation to emerging objects on the screen, co-construct shared understanding and negotiate how to proceed" (2010, p. 3016). In Example 1 below, participants in G7 use CS to display their understanding of what is occurring in the game, to negotiate how to advance, and to voice disagreement with each other.

Example 1, G7

1 3: Push the button on one sixty
2 3: Oh, so close, so close
3 3: Ååh!
4 2: This is–
5 [silence]
6 [noises]
7 4: **Æ trur itj all må det sjø, sje øverst**
8 4: **Vi ska få null– eh?**
9 2: Or maybe it's less than one second and more than–
10 3: Yes, I think so, I think so
11 3: In total we need less than one sixty
12 4: **Nei**, we have to–
13 4: We have to get more one– **nei**
14 2: What the fuck, **nei**
15 3: We should have one and [unintelligible] in total
16 4: **Det her gir ikke mening**
17 1: [unintelligible]
18 2: In total, we need zero seconds
19 4: **Men da vente vi berre all da**?
20 2: All need to step on the button on zero, zero, point zero, zero, or something

21 4: **Okei, ska vi sjå**

In lines 12, 13, and 14, switches occur intra-sententially, whereas the CS in lines 7, 8, 16, 19, and 21 are all inter-sentential. In Example 1, participant 4 in G7 frequently switches to Norwegian to figure out how to proceed in a level that is particularly complicated. The player characters have to stand on top of buttons when the timer on the screen reaches a specific number. The players spend some time trying to figure out what number they need to aim for, in terms of when they need to step on the buttons. In line 1, participant 3 suggests a solution. The participants almost make it, as implicated by participant 3's comment in line 2. They try to do the same thing again but fail once more, to which participant 3 lets out a frustrated noise, see line 3. After several tries using the method suggested by participant 3, another solution is suggested in Norwegian by participant 4 in lines 7 and 8. This inter-sentential switching may have occurred as a way for participant 4 to publicly make sense of what is occurring on screen, and ultimately suggest a new solution since the last one did not work. The conversation continues in English between participants 2 and 3 in lines 9 and 10, in which participant 4's solution is countered with another suggestion presented by participant 2. Participant 4 voices his disagreement by switching to Norwegian intra-sententially, before continuing the rest of the sentence in English. Example 1 illustrates how one of the participants uses CS to co-construct an understanding of what the participants need to do to advance in the game.

Example 2 illustrates another instance of the same participant, i.e., participant 4 in G7 using CS to organize activities within the game:

Example 2, G7

1 3: I'm out
2 2: Eh maybe a bit– oooh
3 3: Oh sorry, sorry, I'm so sorry
4 4: Get low, **ikke fære så langt fram**

In this example, participant 3's character has died several times in a row. If one of the players dies, the group has to restart the level. The group is becoming frustrated, but the tone is still lighthearted between everyone. After dying once again, participant 3 apologizes to his group members for being the cause of frustration. Participant 4 tries to help participant 3 by telling him in English that he needs to get low, before switching to Norwegian in the next clause, i.e., inter-sentential switching, to explain that he should not let his character go too far ahead of the others. As in Example 1, CS is utilized by participant 4 as a tool for organizing activities within the game. However, as the following

example will show, increased levels of frustration within the group causes one of the participants to switch to Norwegian to organize activities outside of the game as well. As Piirainen-Marsh writes, "code-switching is not limited to actions where the players move into alignment with activities in the game world. […] switches […] can also be used to signal momentary disengagement from the fictive world and to accomplish actions that organise activities in the material setting" (2010, p. 3021). Example 3 showcases how the context described in Example 2 has escalated as the participants continue to be frustrated with the same game level, and how CS is now used to organize activities in the real world and not just in the game:

Example 3, G7

1 3: I tried my best
2 [silence]
3 3: You take the key, take the key, take the key
4 4: **E det mulig? Følg med på dæ sjøl**
5 4: **Sjå berre på din**

In line 1, participant 3 expresses to the other players that despite dying once again, he has tried his best to accomplish his task in the game. The tension between the players is highlighted by the lack of response to this utterance. Instead, the players remain silent while they attempt to complete the level once again. After a little while, participant 3 is the first one to speak when he tells another player to get the key needed to unlock the door at the end of the level. Shortly after, participant 3 dies once again in the game. This causes participant 4 to tell participant 3 to redirect his attention toward his own screen and his own character, as seen in lines 4 and 5. He conveys this information to participant 3 by switching to Norwegian inter-sententially and talking with a frustrated tone and a slightly raised voice. It is implied here that participant 3 has leaned over to look at participant 4's screen to see what he is doing, which participant 4 does not appreciate. Thus, participant 4 tells participant 3 to focus on himself and to only look at his own screen in lines 4 and 5. The switching in Example 4 can be considered an instance of using CS to organize activities in the material setting, in that the switching occurs on the basis of something happening between the participants outside of the game.

In G2, an example of using CS to mark the transition of topic can be found. Considering Piirainen-Marsh's explanation of how CS can "serve as a key resource for contextualizing transitions from one type of activity or topic to another" (2010, p. 3014), Example 4 can be considered an instance of code-switching being used to signalize a shift in conversation due to unfolding action in the game.

Example 4, G2

1 3: Have you guys like seen this game before?
2 4: I played it like on TV
3 3: Yeah, same actually
4 1: On TV?
5 4: Yeah, like with a controller
6 1: Oh yeah
7 4: **Hallo, hallo, hallo, nei, nei!**
8 4: We're enough, yellow. Yellow!

In Example 4 above, participant 3 initiates a conversation on whether any of the other players have prior knowledge of the game used in the gaming task. Participant 4 says that they have played it before on TV. Participant 3 indicates that they too have played the game before on TV. Participant 1 shows some confusion over how the game could be played on TV by repeating part of what participant 4 said. Participant 4 clarifies that they have played it on TV with a controller, to which participant 1 now expresses understanding towards. While this conversation is being held, the participants are also moving their characters around in the game trying to figure out what needs to be done next. Suddenly, participant 4 disrupts the ongoing conversation by switching intra-sententially to Norwegian to express that another participant is doing something wrong in the game. She repeats "hello" and "no" several times in Norwegian, with the tone of her voice becoming more frustrated towards the end of her utterance. After this, she immediately switches back to English and turns her frustrations towards the specific participant that triggered her reaction.

A similar example of CS being used to signalize transition can be seen in Example 5 below.

Example 5, G7

1 2: C'mon boys
2 3: Nice boys, nice

–– End of the level, the players have now returned to the screen for selecting levels. ––

3 1: **E vi på treer'n eller fire?**
4 3: **Fire**
5 4: Four

In this example, G7 has completed another level and is now moving on to the next one. In line 1, participant 2 encourages the rest of the group to keep the effort up

to complete the level. By the time participant 3 utters the line in line 2, the participants have reached the door they need to exit to finish the level. Participant 3's comment in line 2 can therefore be understood as a celebratory reaction to the players completing the level. Now that the level has been completed, the game prompts the players to choose the next level to play. The level selection screen causes a momentary break in focus on the gaming activity in itself, as participant 1 turns his comment in line 3 toward the other players to figure out what they want to do next. He implies that he cannot remember if the level they just played was level two or three by asking whether the next level they are going to play is level three or four. This switch to Norwegian can be considered an instance of using CS to signalize the transition from one activity to another, i.e., the transition from one level to another. The transition is seemingly "complete" by the time participant 4 also replies that the group is now on level 4 in line 5, as indicated by his response being in English despite participant 3's response in line 4 being in Norwegian.

4.3.3 Displaying Heightened Involvement In Particular Scenes Or Events

The following examples exemplify instances where the participants in G2 and G7 display heightened involvement in the gaming activity by switching to Norwegian.

A lot of the CS in G7 appears to occur when the participants are attempting to complete a task in the game as quickly as possible. In the example below, G7 has just started another level. All participants have to get on top of a platform functioning as an elevator that leads them forward in the game.

Example 6, G7

1	1: Okay, stand–
2	3: **Kom igjen**
3	4: Step on the red bar
4	3: Why did blue jump off!
5	3: Hurry! C'mon
6	1: **Jammen**
7	4: You have to wait now

A sense of urgency can be identified in how rapidly the conversation occurs, and how participant 3 repeatedly tells the others to get on the platform. Expressing his heightened involvement in the action occurring on-screen, participant 3 switches to Norwegian in line 2 to tell the others to "come on". This switch appears inter-sententially, as the next sentence he utters in line 4 is in English. Participant 3's involvement in the game is also expressed by his reference to another player by the color of their character

instead of the name of the participant controlling this character, as seen in line 4. Another switch occurs, this time by participant 1 in line 6. Here he switches inter-sententially to Norwegian perhaps to express some frustration toward the other players' repeated demands to hurry up. This switch can in that sense be considered a display of heightened involvement as it is influenced by the other players' insistent comments to advance as quickly as possible in the game. His frustration can also be connected to his own movements in the game, and how he might have accidentally jumped off the platform. This was not what he was supposed to do, as indicated by participant 3's comment in line 3. It is not the case that participant 1 is unaware of what he has to do, however, seeing as he is the first one to indicate to the others that they need to stand on the platform, as seen in line 1 when he says "stand". Participant 1's CS to Norwegian in line 6 can thus be considered a display of heightened involvement in the game, as with participant 3's CS in line 2.

G7's continued involvement in the game can also be seen in Example 6 below, which occurs almost directly after the context described in Example 6 above.

Example 7, G7

1	3: Red, red, c'mon
2	[overlapping speech]
3	3: Yes
4	3: Nice
5	4: Great
6	[laughing]
7	[unintelligible]
8	3: Yes, go, go, go
9	2: Make space, please
10	3: [name], **du har nøkkelen, trur æ**
11	3: Green has the key
12	4: **Nei**, yellow
13	3: Think it was green, sorry

At this point, all of the players now know that they have to get on top of an elevating platform to finish the level. Some of the players choose to jump off the platform before it has the chance to reach the door to annoy the others and prolong the process of completing the level. Participant 3 decides to urge his group members to get on top of the platform so that the group can finish the level by repeating the word "go" three times in a row. Everyone eventually decides to stop stalling and get on top of the platform so that they may reach the door. Everyone gathers in front of the door that has

to be unlocked, but no one unlocks it. Holding the key, participant 2 tells everyone to make way for him so that he can unlock the door. Simultaneously, participant 3 directs his attention toward the participant he believes has the key, i.e., whose responsibility is to unlock the door. He switches to Norwegian and refers to another participant by his name to capture his attention. Switching back to English, he repeats his assumption to the rest of the group as well. Participant 3's CS can be understood as a display of heightened involvement in the game in that he seems to unconsciously switch to Norwegian to relay his message to the other participant as urgently as possible before repeating the same message in English afterward. His immediate switch back to English may indicate that his heightened involvement in the game caused him to switch to Norwegian to urge the other player to use the key as quickly as possible so that the group could advance in the game. Participant 4 also displays his involvement in the unfolding events when he switches intra-sententially to Norwegian to correct participant 3, before switching back to English to clarify which player is actually holding the key. Example 6 showcases an instance of participants CS into Norwegian in an attempt to urge the other players into action, thus displaying their engagement in the unfolding events and their desire to progress in the game.

The reason why the participants switch to Norwegian to express urgency can be because their L1 comes to them more quickly in these cases, and they don't, cognitively, go via translation to express themselves.

4.3.4 Emotional Expression

In this section, CS is considered a way for the participants to express feelings toward the game and each other. Emotional expression is a wide category of functions that can encompass a variety of things. The following section will show how G2 and G7 switched to Norwegian to exclaim swear words to express frustration while playing and instances of the participants switching to Norwegian to tease each other or make jokes. Example 8 below showcases an instance where a participant in G7 switches to Norwegian to tease another player.

Example 8, G7

1	3: Esc
2	2: Rope
3	2: Rope, rope
4	2: Yes, rope
5	1: **For seint**

In this example, G7 has completed a level and are now picking the next one to play from the level-select screen. In line 1, participant 3 tells the person responsible for clicking on the levels to press the "Esc" button on his keyboard. He tells him to do this so that the group can choose a level from a new category within the game. Among the categories the participants can choose levels from, there is a category with a picture of the avatars tied together with a rope. Upon seeing this category, participant 2 exclaims the word "rope" several times in a row to get the person in charge to pick this category. His eagerness is indicated by how rapidly he repeats this word into the mic, as well as the excited tone in his voice. However, the person in charge of clicking on which level to play, i.e., participant 1, chooses a different category. Considering what was occurring on-screen at this moment, participant 1 seems to have consciously made the choice to ignore participant 2's request. This is highlighted by participant 1 switching to Norwegian to tease participant 2 for conveying his request too late. The tone of his voice indicates that he is teasing his group member. This switch can in this sense be understood as an example of G7 switching to Norwegian to be humorous and tease each other.
Although G2 switched very little, in the cases where they did switch to Norwegian, it was primarily to express a somewhat playful frustration toward activity in the game.

Example 9, G2

1 4: Where's the rope?
2 4: The fuck–
3 2: Wait what
4 4: We need to speed-run together, one person underneath and the rest on top
5 4: No, no, no, yellow, on top
6 3: Let's go
7 4: Jump, yellow jump
8 [overlapping yelling]
9 3: We need the key
10 4: Whoever's on top needs to grab the key
11 1: **Ja**
12 4: **Fakk**
13 4: **Fakk mor di, fakk faren din**
14 [all laughing]
15 3: Oh okay
16 4: There we go

In the example above, G2 has just completed a level where all of them were tied together with a rope, but now they are not. Participant 4 expresses some confusion over this in line 1, before focusing on what they need to do to solve this level. This level requires all of the participants to stand on top of each other and run over obstacles that disappear once they step on them. One person has to be the one running while the others stand on top of them. This is not entirely clear to the group at first, which results in all of them immediately dying by falling through the disappearing obstacles. Participant 2 expresses confusion over what just happened, as seen in line 3. Sensing what needs to be done, participant 4 tells the other players that one person has to be underneath while the rest stand on top of them in line 4. Once they have assumed their formation, the group tries to run over the obstacles again. The four players are now stacked on top of each other. Suddenly, two blocks appear which makes it impossible for all four players to remain stacked on top of each other. The player on top has to jump over the block and land on top of the group again. They need to do this maneuver twice to get past both of the blocks in their path. On top of the second block, the key is placed. Thus, to be able to unlock the door at the end of the level, the group must jump over these blocks and remain stacked on top of each other at the same time. CS occurs in lines 11, 12, and 13. In line 11, participant 1 eagerly expresses her agreement to participant 4's instructions in line 10, while rapidly moving her character around in the game to do as she has been told. Immediately after they have assumed their formation, the group falls to their death once again in the game. Participant 4 exclaims her frustration towards this by switching to Norwegian to swear with English borrowing in line 12. Assuming a more playful approach, she exaggerates her frustrations toward the game to make the other players laugh by continuing to swear in line 13. These switches appear intra-sententially, as participant 4 goes back to speaking English in line 16.

Example 7 is a particularly interesting example of CS because it also involves English borrowing of the swear word "fuck". This last example can to some extent also be considered an example of G2 displaying heightened involvement in the activity on-screen, as exemplified by the overlapping yelling in line 8. However, the exaggerated nature of participant 4's utterance in line 13 forms the basis for understanding this excerpt as an example of emotional expression through CS rather than a display of heightened involvement in the game.

4.4 Interview Findings

In the following sections, common attitudes, thoughts, and beliefs among the participants towards their own language use, language switching, and potential gender-based differences in gaming and language as they were discussed in the interviews are presented. The groups that were interviewed were the female groups G2, G5, and G6, and the male groups G1, G7, and G8.

4.4.1 Self-Reported Language Use and Opinions Toward Language Switching

Reported benefits of switching between languages in a classroom setting were in most cases connected to clarification means, i.e., switching to Norwegian to explain words or concepts to others. When asked to consider if there could be any pros and cons to switching between languages in the English classroom, the male group G1 expressed that a possible benefit to this could be meaning clarification:

Interview excerpt from G1 (Translated from Norwegian by the researcher)

1 R: Do you think there are any pros and cons eh– tied to switching languages in the English classroom, or like how you are working now?
2 3: Maybe to say something in Norwegian, like to switch to Norwegian when you play, then someone on your team can understand what you're saying in Norwegian in English, and then you can explain it in English.
3 R: Mhm. So, to use another language to explain—
4 3: Yes.
5 R: —what you're thinking and meaning, in a way? Yes?
6 [participants nod]

In the excerpt above, participants in G1 identify switching between languages as something positive, in that it can allow them to use Norwegian to make sense of words in English when playing games together. The female group, G5, believed that switching to Norwegian in the context of the English language-learning classroom would allow them to clarify what they mean if they were unable to find the right words in English.

Interview excerpt from G5

1 R: Do you think that there are some pros and cons to switching between languages in an English lesson, or when you work together like you did now?
2 [long pause to think]

3 2: I mean it's okay to switch to Norwegian if you, for example, don't know a word in English, then we can understand it.

The general attitude among the groups that were interviewed can be said to have been positive towards switching between languages to clarify meaning. Interestingly, some groups seemingly made it a goal to avoid switching to Norwegian while playing unless it was absolutely necessary. When asked to consider if they had switched to any other language than English while playing, in G1, for example, one of the participants indicated that the group had intentionally tried not to switch languages while playing:

Interview excerpt from G1

1 R: Did you switch to other languages than English when you played?
2 3: We tried not to, I don't think we did.
3 R: Intentionally tried not to switch?
4 2: Yes.

In the interview with G2, the same question was asked. A similar belief to the one expressed in G1 can be found in the interview with G2:

Interview excerpt from G2

1 R: Did you switch to any other languages than English while you played?
2 1: [immediately] No, can't remember doing that.
3 3: Don't think so.
4 4: No.
5 3: There might have been some words in Norwegian, but we managed to do most of it [the talking] in English.
6 R: Mhm?
7 4: It was more like eh— we were going to say something and then the others didn't understand, then we said it in Norwegian to make it easier. I'm a little unsure if we did that, though.
8 1: I don't think we did, we only spoke in English.
9 3: We just talked over each other a lot [laughs].
[…]
10 R: Do you think that there are some pros or cons to switching between languages in an English lesson? Or in situations when you play games like you did now?
11 4: [cough] I don't think so.
12 R: No?

13 1: At least now, if you switch languages, it's usually to Norwegian, and everyone here knows Norwegian, so…

14 4: Yeah, that's what we're used to. If we say something in English that the recipient doesn't understand, then we just say it in Norwegian.

15 R: Mhm? So that they can understand, what you're thinking?

16 1: I think everyone here actually knows English quite well.

17 3: Yes.

18 R: Why do you think that you didn't switch completely to Norwegian, then?

19 4: Because we're used to speaking English regularly.

20 1: And we didn't, like, need to switch.

In lines 1 through 9 in the excerpt above, the researcher and the participants discuss whether any switches had occurred during G2's gaming session. The participants responded that they could not remember doing so, and that they believed they had "managed" to speak in English most of the time. It could be reasonable to assume that the participants tried to avoid speaking Norwegian given that they had been given instructions to treat the gaming task as a regular English lesson, but what is interesting to see, especially in the interview with G2, is that some of the groups may have chosen to speak English not just because they had been told to do so, but also because it might have felt natural to them. As participant 4 says in line 19, G2 did not switch completely into Norwegian because they are "used to speaking English regularly".

The most frequent area for engaging with English across all interviewed groups was on the Internet, either through TikTok or YouTube, or when playing online games with friends. All of the participants who stated that they surrounded themselves with English mediums every day agreed that this exposure positively impacted their English competence in school.

4.4.2 Beliefs Surrounding Gender-Based Differences In Gaming And Language

When asked to specify a specific difference between how men and women may speak with each other in a gaming context, the most common suggestion was that men would perhaps use more profanities while speaking compared to women. The male group G1 argued that women might swear less than men when playing games, stating that so-called "guy games" (guttespill) often cause players to become angry:

Interview excerpt from G1

1 R: Do you think there are any differences between how girls and boys talk to each other in games in general outside of school?

2 2: Probably.

3 3: Mhm.
4 R: Yeah? In what way do you think?
5 2: I don't know, I think that in a lot of guy games, they get really angry.
6 R: Yeah?
7 2: Could be a little [unintelligible]
8 3: I think boys swear more.
9 2: Yeah, probably that too.
10 R: Yeah? Do you think that has something to do with gender or with the game you're playing?
11 2: Gender.
12 3: Eh, yeah, I also think it has something to do with gender. If you look at how boys talk amongst each other and how girls talk to each other generally outside of games, it's kind of different.

The male group G7 also listed profanity as a gender-based difference, but mentioned that the use of profanity might come down to someone's temperament instead, regardless of gender:

Interview excerpt from G7

1 R: Do you think there are any differences between how girls and boys talk to each other while working together on a task such as this one?
2 2: Eh, yeah, there's probably more swearing and stuff like that among boys, I think.
3 3: It can become more heated, yeah.
4 R: Yeah? Do you think girls and boys talk to each other differently when they play, like in general?
5 2: Yeah.
6 3: Perhaps the wording is a little bit different.
7 R: Mhm? In what way do you think?
8 3: I don't know, it– it may come more naturally to some– or, that goes for both boys and girls really, that some might be more cautious than others.

Transcripts from several of the female groups show that the female groups also used several swear words to express themselves while gaming, which may suggest that the belief that temperament is more important than gender in terms of swearing may have been true in this case.

G8, another male group, listed gaming experience as a gender-based difference that may impact players' ability to communicate well with others while playing. They

claimed that since most boys play games, they might be better at communicating with each other while playing:

Interview excerpt from G8

1 R: Do you think there are any differences between how girls and boys talk together and work together on a task such as this?
2 3: Yeah, I think so.
3 R: Why do you think that?
4 3: Well, eh. I would say that most boys play games already, compared to the girls.
5 R: Yes?
6 3: So they're a little better at communicating in games.
7 R: Mhm. Do you think then that girls and boys talk differently with each other as well when they play?
8 2: Yes.
9 R: Why do you think that is? That there are differences to it?
10 3: I don't know.
11 2: Less used to playing maybe.

Prior experiences with gaming were in this sense believed to be a possible difference between how girls and boys talk together while gaming. The female group G5 was the only group that did not immediately agree with the idea that there could be some gender-based differences between how boys and girls talk while playing games:

Interview excerpt from G2

1 R: Do you think that there are any differences between how eh– girls and boys, for example, speak and work together on a task such as this?
2 1: Don't think gender has that much to do with it, I think it only depends on what type of person you are.
3 R: Mhm?
4 2: Yes, I completely agree.
5 R: Do you think then that, there are any differences between how, eh, they speak together, eh, when they play games, for example? Outside of school?
6 3: (Unsure) Eh, yes.
7 R: If there are any gender-based differences to that?
8 1: As I said, it depends on the person, it's not something that's specified to gender, but you can see sometimes that there are, for example, differences

between gender, but it has more to do with what kind of person you are than your gender.

In line 6, participant 3 hesitantly agrees with the initial question that there are gender-based differences in how men and women play games outside of school. The look on the participants' faces signalized that the formulation of the question in line 5 may have been confusing. The meaning of the question was therefore repeated by the researcher in line 7, eliciting participant 1 to answer and state that potential differences are not specified to gender, but to what kind of person you are.

These findings suggest that most groups agreed that there may be differences between how men and women communicate while gaming, both in and outside of the classroom. Some suggested that gaming experience might be one reason why men and women might communicate differently while gaming, while others suggested that the use of profanities might be one of the ways in which men and women speak differently in a gaming context.

4.4.3 General Opinions On The Usefulness of 'Pico Park'

Although the aim of this project was not to consider the suitability of the game 'Pico Park' in terms of whether it is suitable to use for English learning, the participants were asked to consider this regardless. The point of asking this question was to get some insight into how the participants perceived the game in general. Some of the participants expressed disagreement with this question, while others, such as the male group G1, only said "yes" when asked if the game could be suitable for English learning. The female group G2, however, expressed that the game, 'Pico Park', might not be useful due to how simple it was and the general lack of challenges the game presented them with:

Interview excerpt from G2

1 R: But do you think, eh, that the game could be especially useful for English teaching?
2 3: Well, there's a lot of just "go up", "go on top of me", and just "go forwards", like, there's not a lot of like "do things".
3 1: We didn't need to talk a lot about what we needed to do, because it was quite obvious what you had to do [to progress].
4 R: Mhm.
5 1: So, we should maybe have had a game where you needed to talk a lot more, to actually figure out things.
6 4: Or maybe a game where you talk to them in the game.
7 3: Proximity.

8 R: Instead of the Canvas solution, you mean?

9 4: Yes.

10 R: Why do you think that?

11 4: Because the game today was just very easy.

12 3: Yeah, a little too easy. I think most of the people in this class play games, or they have at least played something before.

13 4: I think like a strategy game that [unintelligible] game or something, where you don't necessarily need to work in groups. Just to challenge your brain or something. Or something like a mind game.

14 1: Like 'Among Us' or something. That's a game where you have to talk to each other to find stuff, I think that would have been a better solution, because then you have to actively speak to find what you [unintelligible]

In this excerpt, the participants in G2 suggest that the game was not difficult enough to elicit more full-fledged conversations. Moreover, participants 1 and 4 suggest that a different type of game might have been more well-suited for the task in terms of opportunities to speak to each other. A similar kind of opinion can be found in G5:

Interview excerpt from G5

1 R: The game you played today is not necessarily the type of game you would play at school, but do you think that it could be useful to play in a lesson?

2 1: If it has something to do with the subject, then it could be useful.

3 R: Did you feel that this [game] had enough to do with English as a subject? In a way?

4 2: Yes.

In this excerpt, participant 1 in G5 suggests that 'Pico Park', or perhaps games similar to this game, could have been considered useful as long as the game itself had something to do with the subject that it was being used in. This consideration, along with the reflections above by G2, may suggest that a different kind of game might have been better suited for the task. These findings are addressed further in the ensuing discussion.

5 Discussion

The aim of this study was to find answers to the following research questions:

1. To what extent do the participants use English vs. Norwegian when verbally interacting?
2. What characterizes the code-switching that occurs in terms of type and function?
3. Is there a difference between the male and female groups when it comes to 1 and 2?
4. How do the participants perceive their own language use when gaming and the usefulness of switching between languages in the language learning classroom?

The first research question was inspected through the transcriptions of the gaming task. Through the analysis of these findings, it was found that four out of five female groups and two out of three male groups had English as their matrix language. Only one female group and one male group were considered to have Norwegian as their matrix language, based on the number of Norwegian words spoken versus English words spoken. For the second research question, CS that occurred was characterized according to three functional categories: organizing action and positioning of participants and displaying heightened involvement (Piirianen-Marsh, 2010), and emotional expression (Kemaloglu-er & Özata, 2020). The two categories used for asserting the type of CS that occurred, inter-sentential and intra-sentential CS, were derived from Appel and Muysken (2003).

Across all of the female groups, there were generally few instances of CS regardless of what the matrix language of the group was. With the male groups, instances of CS appeared more frequently, both in the groups with English as their matrix and in the group that had Norwegian as their matrix language. In the groups that were analyzed, i.e., the female group G2 and the male group G7, examples of all three functional categories could be found, as well as examples of both inter-sentential and intra-sentential switching. Findings in the analysis show that G2 spoke almost exclusively in English, and switched primarily as a way to display heightened involvement in the game or as an emotional expression. For the male group, G7, instances of CS occurred more frequently. Although G7 code-switched more in general, these instances of CS were found to function as ways to organize action and display heightened involvement more than as emotional expressions. Differences between G2 and G7 in terms of the type of function of CS can therefore largely be connected to frequency rather than whether or not it occurred in either of the groups, especially considering the fact that there were a

lot more examples to choose from in the male group for the analysis than there were for the female group.

Findings from the transcription of the interviews show that most of the groups interviewed were somewhat unwilling to discuss and reflect on their own language use and gender-based differences in the context of gaming. One person would often answer the questions on behalf of the rest of their group despite the questions being directed at all members of the group. The researcher attempted to encourage more participants to speak by directly asking other members to weigh in on the topic at hand, with varying degrees of success. In the few cases where some answers were provided, the participants generally perceived their own language use while gaming to be jokingly in character and informal. Male participants perceived their own language use when gaming to be more aggressive and littered with profanities compared to the female groups, and that this could be a gender-based difference between how men and women speak to each other while gaming. When the groups were asked to consider whether there could be any differences between how men and women talk in a gaming context, only one group expressed disapproval of the assumption, stating that differences in speech in this context did not have anything to do with gender. Some of the groups expressed an attitude towards their own language use that considered it a goal to only speak English throughout the task. In terms of switching between languages in a language learning context, most groups expressed a positive attitude towards this, emphasizing meaning clarification as a potential benefit of switching.

5.1 Comparing and Discussing the Findings

Interestingly, the groups with Norwegian as their matrix language were also groups with lower averages for gaming habits and/or proficiency in English. The female group G6 had considerably lower gaming habits than the other female groups, reporting that they played games for less than an hour a week. In comparison, the average amount of hours spent gaming in the other female groups was somewhere between 4 to 12 hours a week. All of the members in the male group G8 reported having neither very high nor very low proficiency in English. Although their average self-reported proficiency in English was the same as the one found in G7, i.e., 3 (neither very high nor very low proficiency), G8 scored the lowest of the male groups in terms of gaming habits.

It could be plausible to consider whether these two aspects might have influenced what language became the matrix languages in G6 and G8. Gaming as a cultural space is more often than not constructed in English, either by the game designers or by the players themselves. Those who enter this cultural space are therefore continuously exposed to the English language unless they actively seek out games in other languages. Individually accumulated gaming experience may therefore have affected the choice of

matrix language in some of the groups. Findings in Sylvén and Sundqvist (2010) for example, although not directly comparable to the project, suggested that frequent gamers may perform higher than less frequent gamers when communicating in their L2 English. For groups with lower averages for gaming habits, then, such as G6 and G8, it might not have felt natural to them to speak English while playing.

Leppänen writes: "[…] the use of English is often motivated by the fact that the mediated cultural practice or activity [that speakers interact with] involves English in some way" (p. 152, 2007). It may be reasonable to believe that many of the participants felt inclined to speak English when playing because conversations in a gaming space are usually constructed in English. This is also suggested in the interview with G7, in which one of the participants expresses that they did not switch to Norwegian entirely because of the context of being in an English lesson, and because it felt more natural to speak English in the context of the gaming activity. What is interesting to consider in the context of this, is that several of the female groups, G2 included, could be heard speaking to each other in English before the gaming task had begun. This observation can in some ways confirm G2's comments about their general comfort with speaking English, which they believed may be a reason why they switched very little while playing.

Another possible explanation for the matrix language in G2 could be traced to the native languages that were reported within the group. In the meeting with the subject teacher ahead of the project, the researcher was informed that the students with Arabic as their L1 had considerably lower competence in Norwegian compared to the rest of their classmates. According to the teacher, these students were capable of communicating in Norwegian if prompted but preferred to speak and be spoken to in English if given the choice between the two languages. In G2, one of the members listed Arabic as their native language. Considering the conversation detailed above, it can be plausible to assume that G2 may have chosen to speak to each other almost exclusively in English to accommodate their classmate's language preferences.

This accommodation can also be considered interesting with respect to Fuller's (2010) study, in which the use of collaboration to construct gender identity in conversation was examined. Although not directly applicable to the current study, findings in Fuller (2010) showed how young girls collaborated with each other to accommodate girls who were less proficient in Spanish by speaking to each other in English, and through this constructed a sense of unity and group membership (2010, p. 204). Whether G2's choice of matrix language was based on a wish to construct a shared, feminine identity within the group is not possible to confirm. It is nevertheless interesting to consider this type of motivation as a possible reason why the girls in G2 chose English as their matrix language, especially due to the group's choice to speak to each other in English even before the gaming task had begun.

Studies in section 2.4.4. on gender and CS suggested that the frequency of CS can be one way in which men and women differ from another. Although the studies examined in this section are not directly comparable to the context at hand, the findings in Arora (2019) suggest that men code-switch more than women in the general context of Indian informal conversation may to some extent be applicable to this project. The conversations that occurred in this gaming context were, of course, a constructed environment in which the context of a regular English lesson implicitly indicated that the participants were to speak in English. However, the casual atmosphere of the task and the type of conversations that occurred in the groups may imply that the context of gaming in an English lesson did not directly affect the authenticity of the conversations that occurred in some of the groups. In this sense, the finding in Arora (2019) suggesting that men might generally code-switch more than women in informal conversation, can to some extent be considered to be in line with the language and behavior observed in the gaming task. Thus, the general assumption that the frequency of CS is a way in which men and women differ from one another can be said to have been confirmed in this project.

As detailed in section in 2.2.2, Chapelle (2009) outlines a framework for factors to consider in using a game for second language learning, i.e., SLA: 1) language learning potential; 2) meaning focus; 3) learner fit; 4) authenticity; 5) positive impact; and 6) practicality (2009, p. 748-749). In the context of using a game for language learning that is sensitive to gender-based implications, the 'perfect' game must not only provide players with challenges and puzzles that are tailored to all genders but also present players with opportunities to communicate that facilitates language learning, values authenticity and positively impacts their general skills beyond gaming, while still being practical to use and play. The game that was used in this project, 'Pico Park', can be considered to have fulfilled some of these requirements. The game provided opportunities to communicate that allowed for authentic input in terms of what kind of conversations one might encounter while gaming, and, moreover, the game was very practical to use and play. Since the aim of this study was not to consider the specific learning outcomes the use of this game could provide nor how this game could impact their general skills, these requirements are not considered part of the evaluation. In terms of the gender aspect, findings suggest that the game was suited for both genders with respect to the gameplay that was observed and general engagement in terms of laughter and yelling.

However, findings in the interviews suggest that some of the participants thought the game was too easy to play and did not provide enough opportunities to communicate. In general, the average gaming experience in the participating classes may have been beyond what was needed to be able to play the game chosen for this

project. When asked to reflect on the usefulness of using *Pico Park* in the English language-learning classroom, the female group G2 stated that the game was too easy for them, which made it difficult to find things to talk about sometimes. This can arguably be observed in the transcription of G2's recording, in terms of what the group talked about while playing. A lot of the transcription shows that a lot of the conversations that occurred in G2 were jokes to entertain one another while they played. In fact, the examples showed in the CS analysis of G2 were some of the few instances where the conversations within the group actually concerned themselves–at least to some degree– with what was actually happening on the screen. Given that G2 was one of the female groups with the highest average gaming habits, it is reasonable to assume that 'Pico Park' did not provide the most frequent gamers in the sample with enough opportunities to communicate with each other about the task at hand.

These reflections surrounding the usefulness of 'Pico Park' was one of very few questions that elicited longer answers in some of the groups. Prior (2018) writes: "[interviewing] is a dynamic interaction requiring a responsible and active interviewer and a responsive and willing interviewee" (2018, p. 226). If the interviewees are not responsive or willing to engage themselves in the interview, it becomes even more challenging for the interviewer to engage them in the topic at hand. Miscommunication and resistance in the interview activity are "endemic", according to Prior, and may arise "due to topic, time of day, length of interview, differential expectations, personality conflict, language and cultural differences, the presence of a recording device, and other factors" (p. 234, 2018). Reasons as to why the participants did not provide more answers to the interview questions could therefore range from general interest in the specific topic of discussion to feeling uncomfortable with the presence of a recording device.

In terms of identifying *why* they might have switched between languages, however, neither G2 nor G7 listed reasons that can be directly correlated to what was found in the CS analysis. Both groups claimed that they might have switched between languages in order to explain something to the other players, i.e., CS as a means for meaning clarification. However, as the findings suggest, there weren't any situations where CS occurred where the function of CS was to explain something in Norwegian because the other players did not understand what was being said in English. There were, however, instances of participants in G7 switching to Norwegian to organize the actions of the participants within the game. This can in some sense be understood as a way of clarifying to the other players what needs to be done in order to advance in the game, but it is not based on a need to translate meaning from one language to another. This is exemplified by the other participants responding in English to what had been said in Norwegian.

The category that was used to explain the function of this particular instance of CS, i.e., organizing action and positioning of participants, can be considered somewhat shaky. In Example 1, the analysis suggested that the male group G7 organized action both in English and by switching to Norwegian. However, only one of the participants actually switched to Norwegian in this example. This could suggest that CS was not used as a primary tool for organizing action within the group and that some of the group members, specifically participant 4, might just have felt more inclined to speak Norwegian to make sense of the action that occurred on screen. This can in some way be considered contradictory to how Piirianen-Marsh defined the function of this category in their study, in that the examples in this study made a point about CS being used by the entire group as a key tool for organizing action. Example 1 exemplifies how one participant switches to organize action, but it does not exemplify the group members using CS to communicate this to each other. This does not mean that Example 1 is not an example of using CS to organize action within the group in some way, but that it might have been easier to assume that G7 used CS for this purpose in this case if there had been evidence of some of the other participants in G7 responding to participant 4 by switching themselves.

5.2 Limitations Of The Study

A considerable limitation of the study is the uneven distribution of gender that participated. Virtually all of the data on the male participants were derived from a male-dominated class, while almost all of the data on the female participants were derived from a female-dominated class. This means that some of the findings on the difference between genders could maybe be attributed to the different classes instead, or the different study programs these classes were part of. It could also be that being a student in a male or female-dominated class affected the way the participants interacted with each other in the gaming task. The male group G1, for example, code-switched a lot less than the other male groups who were part of a different study program.

Other limitations of the study can arguably be connected to the design of each of the methods used and the analysis of the findings in each of the tasks. The findings in terms of English proficiency and gaming habits were only measured according to participants' own perceptions of these aspects. Moreover, the participants' answers were provided according to predetermined categories, meaning they had to place themselves within categories that might not have been representative in all cases. This can be considered a limitation of the study, in that the answers that were provided might not be entirely authentic to what the participants actually wanted to say. However, the aim of the questionnaire was not to collect data that would prove or disprove certain aspects of the gaming task findings or the interview findings. The intention behind the task was to

gain some insight into the level of English proficiency and gaming habits in each of the groups to have a general understanding of some of the language choices made in some of the groups. These results should in no way be treated as absolutes, nor have the intention of this discussion been to do so.

6 Conclusion

The aim of this study was to examine gender-based differences in language choice and CS as it occurred in a gaming task using an entertainment game and examine the participants' perceptions of their own language use while playing and the usefulness of switching between languages when gaming. The study deployed three central methods for collecting data to examine these overall aims, namely a questionnaire, a gaming task, and group interviews after the gaming task had been completed. The findings in this study align with previous studies on the use of entertainment games in language learning classrooms, in that the participants perceived the use of games for learning as a helpful tool to facilitate various forms of learning.

As established in the CS analysis and discussion, gender-based differences between the female and male groups were largely connected to the function of the CS that occurred. The findings from the CS analysis are in line with previous studies on CS, gender, and gaming, in that the female group switched less than the male groups and that the function of the switching that occurred in the male group was in large part connected to a need for the other players to advance as quickly as possible.

The findings in this study generally suggest a need for further examination of the relationship between gender, gaming, and CS, particularly in the context of Norwegian English language learning classrooms. However, one aspect of this study that could be particularly interesting to examine further is the aspect of gender-queerness in the context of CS and gaming. This was not a perspective that this project was able to consider, but this does not mean that it is not needed. Other suggestions for further research can be to consider what differences the factor of age may have on the aspects discussed in this thesis and to compare how different ages interact in a gaming context with respect to gender and CS. Another aspect of this study that could be interesting to examine further is the aspect of translanguaging and gaming in Norwegian English language-learning classrooms. The discussion of translanguaging was examined sparingly in this study, largely because the nature of the data that was collected suggested a stronger focus on CS. There are nevertheless interesting aspects to the study of translanguaging that could be interesting to examine in the context of gaming and gender.

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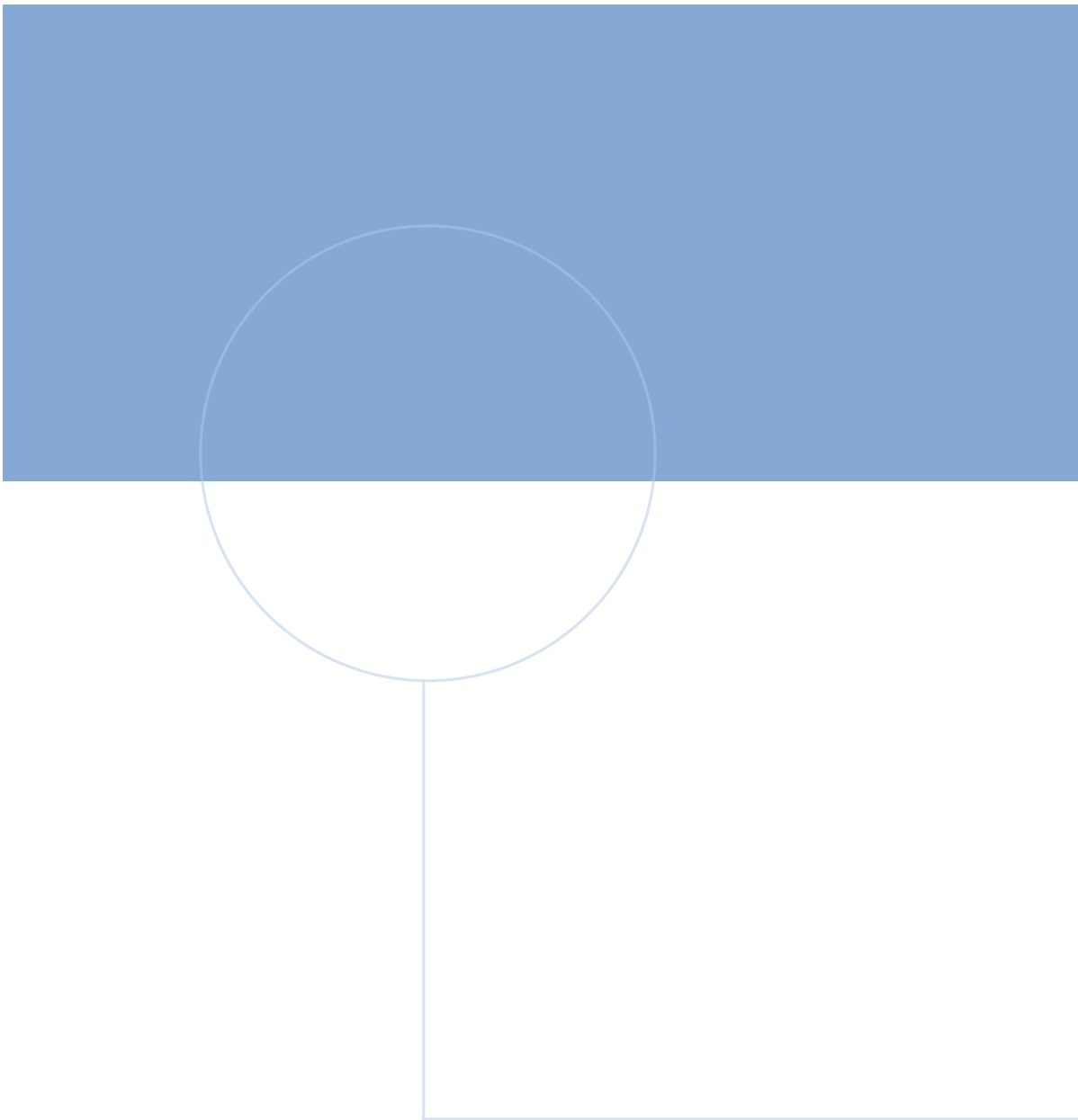

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