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# Engaging citizens through gameplay

Persuading Norwegian youths to participate more in politics through a serious game

Master's thesis in Interaction design

Supervisor: Yavuz Inal

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Faculty of Architecture and Design  
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# Abstract

As a clear lack of political participation among certain groups of citizens in recent times can be seen in Norway and other countries, new and innovative methods to raise awareness and promote participation are needed to ensure that all citizens are represented in the democratic processes. As one potential solution, the use of digital games as virtual environments to experience, learn and persuade has been gaining momentum in the last decades. In this study, an experiment was conducted to investigate whether the persuasive game *Deltakelsesspillet* could change explicit attitudes among Norwegian youths between 18 and 30 years, through a process that included game design, expert interviews, reviewing literature, an experiment and analysis. The results of the study reveal that playing the game overall statistically significantly changed explicit attitudes towards political participation among the youths, but that changes in attitudes varied both from participant to participant and between various measured attitude items. In fact, the results seem to indicate that the game content had a strong correlation with which attitudes changed through gameplay. The implications of the findings for designers, researchers, educators, and politicians are considered, and potential ways to effectively maximize the persuasive potential of games given the findings are discussed.

**Keywords:** attitude change, serious games, persuasion, political participation, persuasive games

## Sammendrag

Ettersom en tydelig mangel på politisk deltakelse blant enkelte grupper innbyggere kan ses i Norge og andre land i nyere tid, trengs det nye og innovative metoder for å øke bevissthet og deltakelse for å sikre at alle innbyggere er representert i de demokratiske prosessene. Som én mulig løsning har bruken av digitale spill som virtuelle miljøer for å oppleve, lære, og overbevise økt i popularitet de siste tiårene. I denne studien ble et eksperiment gjennomført for å undersøke om spillet *Deltakelsesspillet* har potensiale for å endre eksplisitte holdninger blant yngre norske innbyggere mellom 18 og 30 år, gjennom en prosess som inkluderte spilldesign, ekspertintervjuer, litteraturgjennomgang, et eksperiment og analyse. Resultatene av studien viste at det å spille spillet totalt sett signifikant endret holdningene til politisk deltakelse blant de yngre innbyggerene som deltok i studien, men at holdningsendringene varierte både fra deltaker til deltaker og mellom ulike type holdninger. Faktisk ser resultatene ut til å indikere at spillinnholdet ser ut til å ha en sterk sammenheng med hvilke holdninger som endres gjennom spillopplevelsen. Implikasjonene av funnene for designere, forskere, pedagoger og politikere vurderes, og potensielle måter å maksimere overtalelsespotensialet til spill diskuteres.

**Nøkkelord:** holdningsendring, seriøse spill, overtalelse, politisk deltakelse, overtalende spill

# Preface

Games as a phenomenon have always fascinated me, and it has been interesting to explore the persuasive potential of digital games throughout this thesis. First of all, I would like to thank my supervisor, Yavuz Inal, for his guidance, support, and valuable suggestions throughout the semester. Thank you to all the participants in the study that took time to participate and share their experiences. Lastly, I would like to thank my family and friends for their continuous support throughout the semester – especially a friend who helped me with formatting my thesis.

# Table of contents

<b>Abstract</b>	<b>1</b>
<b>Sammendrag</b>	<b>1</b>
<b>Preface</b>	<b>2</b>
<b>Table of contents</b>	<b>3</b>
<b>1 Introduction</b>	<b>5</b>
<b>2 Background</b>	<b>8</b>
2.1 Political participation in Norway	8
2.1.1 <i>Factors that correlate with political participation</i> .....	10
2.2 Attitudes, attitude change and persuasion	12
2.3 Persuasive games	13
2.3.1 <i>Persuasion through gameplay</i> .....	15
2.3.2 <i>Political games</i> .....	18
2.3.3 <i>Digital gameplay in Norway</i> .....	19
<b>3 Method</b>	<b>21</b>
3.1 Research goal	21
3.2 Research process	22
3.2.1 <i>Exploration</i> .....	22
3.2.2 <i>Game design</i> .....	23
3.2.3 <i>Experiment</i> .....	24
3.2.4 <i>Analysis</i> .....	26
3.3 Steps to effectively design a persuasive game	27
3.4 Participants	29
3.4.1 <i>Players</i> .....	29
3.4.2 <i>Experts</i> .....	33
<b>4 Results</b>	<b>34</b>
4.1 Expert interview findings (as a baseline of the study)	34
4.1.1 <i>Current situation</i> .....	34
4.1.2 <i>Challenges and barriers</i> .....	35
4.1.3 <i>Solution</i> .....	36
4.1.4 <i>Role of education</i> .....	37
4.1.5 <i>Role of digital media</i> .....	38
4.1.6 <i>Potential of games</i> .....	39
4.2 The Game – Deltakelsesspillet	40
4.3 Participants' political engagement before gameplay	45
4.3.1 <i>Factors that contribute to the participants' interest in political participation</i> .....	46
4.3.2 <i>Challenges that participants face regarding political participation</i> .....	47
4.3.3 <i>Political issues that interest the participants</i> .....	48

4.3.4	<i>Participants' thoughts on initiatives to make politics more appealing to them..</i>	48
4.4	Effects of gameplay on participants' attitudes	49
4.4.1	<i>Participants' attitudes towards political participation .....</i>	49
4.4.2	<i>Comparing types of attitudes: average attitudes before and after gameplay ...</i>	50
4.4.3	<i>Effects on attitudes across different statements about political participation ...</i>	51
4.4.4	<i>Demographic comparison.....</i>	54
4.5	Participants' reflections about the game and gameplay experience	55
4.5.1	<i>Participants' thoughts after gameplay.....</i>	55
4.5.2	<i>Participants' thoughts about whether the game was entertaining.....</i>	56
4.5.3	<i>Participants' thoughts about whether the game was educational.....</i>	57
4.5.4	<i>Participants' thoughts about if the game changed their views on politics .....</i>	57
4.5.5	<i>Participants' reflections on what could be different about the game.....</i>	58
4.5.6	<i>Participants overall gameplay experience.....</i>	58
<b>5</b>	<b>Discussion</b>	<b>59</b>
5.1	Interpretation of study results	59
5.1.1	<i>Effects of gameplay on Norwegian youths' political participation attitudes .....</i>	59
5.1.2	<i>The role of participants' demographics on political participation attitudes .....</i>	62
5.1.3	<i>Participants' gameplay experience .....</i>	62
5.2	Implications of findings	63
5.2.1	<i>Implications for designers.....</i>	63
5.2.2	<i>Implications for educators and politicians .....</i>	64
5.2.3	<i>Implications for game researchers.....</i>	65
5.3	Limitations	66
5.4	Further work	66
<b>6</b>	<b>Conclusion</b>	<b>67</b>
	<b>References</b>	<b>68</b>
	<b>Appendices</b>	<b>73</b>

# 1 Introduction

It is of vital importance for the legitimacy of democracies that citizens participate actively in the political processes. This is necessary to maintain a healthy functioning democracy since democracies only thrive when citizens utilize their opportunities to influence society through being active citizens who engage with political and societal issues that concern them specifically and society in general. Full political participation may entail, among other things, voting in local and national elections, participating in political discussions and debates, being a member of political parties or organizations, and being informed about ongoing issues in society. When many citizens choose not to participate in politics, their interests and needs are not being preserved, and certain groups may become underrepresented, while democratic representativity is not achieved.

Nevertheless, statistics about political participation in Norway show that voter turnout at recent elections for certain groups has become steadily lower, with increasing differences between the groups that vote and those that do not vote (Kleven and Risberg, 2023). Furthermore, a slight decline in participation can be seen in political parties and trade unions in Norway for the past 20 years (SSB, 2017). Particularly younger Norwegian citizens (especially young men), as well as immigrants, unemployed, those with lower education, and those with lower income seem to be participating less in politics in Norway on several metrics – including voting in elections, being members of political parties and organizations and participating in activism (SSB, 2013; With, 2017; Kleven and Risberg, 2023; SSB, 2024). The International Civic and Citizenship Education Study from 2022, which measured 5709 Norwegian 14-year-olds civic participation, knowledge, and awareness about democracy, shows similar results for younger citizens, where the same systematic differences can be found between Norwegian pupils of different sociodemographic characteristics – such as gender and socioeconomic background (Schulz et al., 2023).

There are several reasons why citizens may choose not to participate in politics to the same extent. First and foremost, they might simply not be politically interested and think politics does not concern them. Citizens might also lack trust towards political parties, politicians, or political institutions, or they might lack confidence or belief in that their participation matters, as they might feel powerless and that they do not achieve anything by voting (which scholars describe as a lack of political self-efficacy). Several researchers have found that experience of political self-efficacy is one of the major predictors of actual political participation and may be largely influenced by social demographics such as gender and socio-economic status (Kavanaugh et al., 2008; Eckstein, Noack and Gniewosz, 2013; Schulz et al., 2023).

In the last decades, some researchers have interpreted an overall global decline in voter turnout and participation in traditional democratic institutions such as political parties and organizations, which have been seen in many countries in the last decades, as a potential sign of democratic decline and broader disengagement from community life (Glas et al., 2019). For

instance, a study from 2012 argues that younger European generations particularly lack the civic competencies needed to become successful active citizens and that these competencies have declined over the past several decades among European youth (Hoskins, Villalba, and Saisanna, 2012). However, with the changes in internet access in most Western democracies around the turn of the century, quite a few opposite readings of the state of democracy have also emerged. Some scholars argue that rather than seeing a decline in political participation and engagement, we now instead see a fundamental change in the way citizens engage and actively participate – and some argue that young people increasingly show high levels of participation and engagement but that they now show this in different ways than before (Johnson and Kaye, 2003; Kavanaugh et al., 2008; Boulianne, 2009; Glas et al., 2019).

Since lack of political participation among some groups seems to be related to various attitudes towards political participation – such as interest, trust, and self-efficacy, promoting political participation behaviors and attitudes may no longer be an issue of only providing additional information and knowledge about politics – but rather how information is delivered, and how persuasive it is for citizens. As such, there seems to be an urgent need to change the way people think and act: in other words, change their attitudes and behavior. As one potential solution for attitude change, the use of interactive digital media as tools to educate, raise awareness, and change attitudes and behavior has been gaining momentum in the last few decades (Glas et al., 2019; de la Hera et al., 2021; Boncu, Candel and Popa, 2022; Kolek et al., 2023).

Interactive digital media, such as virtual environments and digital games, require users to engage with messages rather than passively consume them and provide opportunities for users to experience concepts in safe and simulated conditions where they can test themselves without the fear of being wrong, trying alternate solutions and learn (Janakiraman, Watson, and Watson, 2018). Especially digital games have been celebrated by many scholars for the specific properties they bring to the table, which seem to be particularly beneficial in settings where individuals wish to explore and experiment while also being able to experience the consequences of their choices (Glas et al., 2019). Digital games have been found to often provide incredibly rich cognitive experiences and include principles that psychologists, neuroscientists, and educators all emphasize to be fundamental to enhancing learning and promoting changes in the brain (Eichenbaum, Bevelier, and Green, 2014). Nevertheless, some argue that the truly unique properties of games arguably lie in their expressive power and how they visually represent how real and imagined systems work while inviting their players to interact with those systems in a playful manner (Bogost, 2007; Glas et al., 2019).

Given this knowledge about games, several researchers and game designers have begun to custom design games to influence people – the so-called ‘serious games,’ commonly defined as all games whose primary purpose goes beyond only entertainment (Michael and Chen, 2005). The idea behind developing these games is to combine the rich cognitive experiences of gameplay with mechanics known to motivate and engage from games to create engaging and cognitively rich experiences that change the player’s brain (Eichenbaum, Bevelier, and



Green, 2014). As one type of serious game, persuasive games aim to influence a player's attitudes or behaviors to facilitate change after gameplay. The political subgenre of these persuasive games specifically focuses on games that address political issues, for example, by challenging certain political stances or worldviews (Glas et al., 2019).

Although there gradually seems to be an increasing academic interest in the uses and effects of digital games in different areas of people's lives, little attention has been given to the opportunities games might offer concerning politics and citizenship (Glas et al., 2019). Some notable attempts, however, include research by Kahne, Middaugh, and Evans in 2009, which explores the civic potential of video games in general and argues that "gaming may foster civic engagement among youth" (Kahne, Middaugh, and Evans, 2009, p. 23), as well as the book *The Playful Citizen* (2019) which discuss how play and games might foster civic engagement (Glas et al., 2019). Furthermore, overall initial results from experimental studies on political games so far indicate that playing political video games can contribute to an increase in political participation and civic engagement through the indirect effects of playing: that the player's interest and political engagement with the topics in question increase and, as such, had an indirect effect on participation (Neys and Janz, 2010; Glas et al., 2019).

However, while there have been a few attempts to examine the relationship between political participation and digital gameplay so far, there are still very few conducted studies in this narrow research field, and less focus so far seems to be given to younger citizens as a specific demographic group. Furthermore, no attempts so far seem to be based on the Norwegian context of political participation or include Norwegian citizens as study participants. Therefore, this thesis's primary goal is to investigate whether a custom-designed persuasive game about political participation created for this study can be used to change explicit attitudes young Norwegian citizens between 18 and 30 years old have towards political participation. This specific target group is chosen as statistics about political participation show that these citizens are less likely to participate in politics and more likely to play digital games among citizens above voting age in Norway (Schiro, 2023; SSB, 2024).

In this introductory chapter, the motivation and purpose behind the research have been described, and an introduction to the phenomena explored in the thesis has been given. In Chapter 2, relevant literature for understanding the topics of political participation, attitudes, and persuasive games is reviewed. In Chapter 3, the research process and methods used in the study are described, and background information about the demographics of the study participants is given. Chapter 4 presents the study's results after analysis, including the final game design and the findings from a research experiment. Chapter 5 discusses the findings against the literature and research questions and suggests study limitations and further work. Finally, the conclusion in Chapter 6 will attempt to enumerate the most important findings and the main takeaways from the thesis.

## 2 Background

### 2.1 Political participation in Norway

Political participation can be described as all voluntary activities undertaken by citizens to influence politics in relation to either 1) decision-making (e.g., voting and organizational governance), 2) influencing (e.g., engaging in public debate or demonstrations), or 3) community participation (e.g., volunteering or keeping oneself informed) (Uhlener, 2015; Glas et al., 2019; Schulz et al., 2023). While political participation is similar to the more general term civic participation, political participation refers strictly to processes related to involvement in politics – and does, therefore, unlike civic participation, not include other metrics for being a good citizen – such as volunteering to help your neighbor or being a good community member in your local environment (Uhlener, 2015; Glas et al., 2019).

Statistics from *Statistics Norway* show that Norwegian voter turnout is quite stable and generally high – about 10 to 15 percentage points higher than the average for EU countries (SSB 2024; Statista, 2024). In national elections, overall voter turnout has been at a stable level between 75 to 80 percent in the past 30 years, while it has been lower but stable at between 60 and 65 percent in regional and local elections. In the last 30 years, turnout in national elections was at its lowest in 1993, when 75,8% voted, and at its highest in 1997, when 78,3% voted – and has been both higher and lower than in the most recent national election in 2021 and the most recent local election in 2023 (SSB, 2024).

However, while voter turnout generally is high in Norway, it can also be seen that participation among certain groups has become steadily lower in recent elections, with increasing differences between demographic groups in terms of voter turnout in elections (Kleven and Risberg, 2023; SSB, 2024). Furthermore, a slight decline has been observed in participation in political parties and trade unions in Norway for the past 20 years (SSB, 2017). Some groups have been shown to participate less in Norway on several metrics – especially younger Norwegian citizens (particularly male youths), immigrants, unemployed, citizens with lower education, and citizens with lower incomes. These citizens generally vote less in elections, are seldom members of organizations and political parties, and participate less in political activism (SSB, 2013; With, 2017; Kleven and Risberg, 2023; SSB, 2024). An interesting trend is that while men traditionally had higher voter turnout in national elections than women in Norway (from 1953 to 1985), this trend turned around in 1989, and since then, women in Norway have had higher voter turnout in all national elections from 1989 to 2021. Statistics also show that younger men tend to participate less than younger women in Norway, but this difference becomes smaller with increasing age until the age of about 75 and above, where men participate more than women (Kleven, 2021; SSB, 2024). See *Appendix A* for further details.

For instance, statistics show that among younger Norwegian citizens between 20 and 24 years old, only 65% voted in the national election in 2021, while about 82% of citizens between

45 and 66 years old voted, and about 85% of citizens between 67 and 79 years voted. Similarly, in the last 3 regional and local elections in 2015, 2019, and 2023, only 24% of citizens between the ages of 26 and 34 years voted in all 3 elections, compared to 40% of citizens between 35 and 49 years old, 56% between 50 and 69 years old and 64% between 70 and 89 years. Meanwhile, if we look at the last six national, regional, and local elections from 2013 to 2023, as many as 25% of the men under 50 years old with education at the primary school level did not vote in any of the six elections. Previous research has found that participation is particularly low for young Norwegian citizens in their early twenties, while 18-year-old Norwegians participate roughly in line with the rest of the population. This points in the direction of different life phases influencing participation in elections and general interest in politics. As explained by Øyvind Kleven from *Statistics Norway*, Norwegian 18- and 19-year-olds are most often still in upper secondary school, live at home with their parents, and have a stable life situation, while people in their 20s to a greater extent, usually are in a transition phase in their lives (Kleven, 2017).

On top of older citizens participating to a higher degree in several metrics, statistics also show that employed, highly educated, and those with a high income use various channels to influence society to a greater extent than others (With, 2017). For example, higher-educated citizens reported that they had written more entries in newspapers, contacted politicians or national authorities to take up issues more often, and participated in political parties and organizations more frequently than others (Dalen and Arnesen, 2020; SSB, 2024). Furthermore, if citizens are categorized in terms of gender, age, and education, men under 35 years old with only primary school education are the group that, on average, votes in the fewest of the last six elections – voting notably less than for example both women in the same demographic group and men with higher education or age (Kleven and Risberg, 2023). Furthermore, while men are more often members of political parties, this trend is the opposite in the youngest age group (16 to 24 years), where young women are more often politically active in political parties and organizations than men (SSB, 2017).

Furthermore, as can be seen in *Table 1*, statistics from *Statistics Norway* show that youths between 16 to 24 years, on top of voting less than all other age groups, also participate less in discussions on internet than age groups 25 to 44 years and 45 to 66 years, while less frequently taking up issues with politicians and national authorities than all other age groups and participating about the same in organizations and political parties as other age groups (SSB, 2024). However, it is worth noting that statistics also show that youths between 16 and 24 participate more often in demonstrations than all other age groups, and that younger people also have been shown to participate more often in demonstrations in recent years (Dalen and Arnesen, 2020; SSB, 2024).

Table 1 – Norwegian citizens’ political participation the last 12 months as measured in 2020 among four different age groups (SSB, 2024).

<i>Political participation last 12 months</i>	Voted in last national election	Wrote a post or discussed about politics on internet	Took up a social issue with politicians or national authority	Participated in a political party, organization, or group	Participated in a demonstration
<b>16-24 years</b>	58%	12%	9%	10%	17%
<b>25-44 years</b>	71%	16%	16%	8%	9%
<b>45-66 years</b>	86%	18%	20%	12%	7%
<b>67 years+</b>	91%	9%	17%	8%	4%

Similar tendencies can be seen in the *International Civic and Citizenship Education Study* from 2022, which measured 5709 14-year-old Norwegian citizens from 150 schools’ civic participation, engagement, knowledge, and awareness about democracy. The study showed that although Norwegian pupils have a high level of knowledge and a good understanding of democratic issues, there are systematic gaps in knowledge and understanding between different demographics – as males, immigrant families, and youths with parents with lower education scores lower on civic knowledge (Schulz et al., 2023). For instance, Norwegian females scored significantly higher in terms of civic knowledge than males, and this difference has increased since the same study was conducted in 2009 and 2016 (Schulz et al., 2023). The same study for previous years has also shown that Norwegian females score higher on knowledge tests about democracy and participation in democratic activities and that there are increased differences in democracy understanding and political engagement between Norwegian boys and girls compared to both 2009 and 2016 (Lihong et al., 2017).

The study also showed that, unlike most other countries in the study, civic and citizenship education was not taught as a separate subject in schools in Norway. Furthermore, the study also showed that while Norwegian youths participated as much in previous years in terms of being affiliated with youth organizations or political parties, overall, they participated less in activities to inform themselves (such as watching television and using the internet to find information) than most other countries in the study, and less compared to previous studies in 2016 and 2019. Lastly, the study showed that differences between Norwegian young females and males in terms of the participant's own expected electoral participation seem to be the largest for all participant countries (see *Appendix B* for details), as 54% of females and 51% of males expected that they will participate in elections (Schulz et al., 2023).

### **2.1.1 Factors that correlate with political participation**

In general, besides the previously mentioned demographics – such as gender, age and education, several factors seem to be highly correlated with political participation – including political interest (Johnson and Kaye, 2003; Kavanaugh et al., 2008; Kleven, 2017; Schulz et

al., 2023), trust towards national government and politicians (Johnson and Kaye 2003; Kavanaugh et al., 2008, Kleven, 2016; Schulz et al., 2023), political self-efficacy (as in belief of mastering participation) (Johnson and Kaye 2003; Kavanaugh et al., 2008; Eckstein, Noack and Gniewosz, 2013; Schulz et al., 2023) and behavioral intentions (Ajzen, 1985; Johnson and Kaye 2003; Eckstein, Noack and Gniewosz, 2013). Furthermore, multiple studies have examined the effects of internet usage, such as social media usage and reading news online, on political participation – and multiple studies suggest that increased internet usage is correlated with increased political participation (Johnson and Kaye, 2003; Kavanaugh et al., 2008; Boulianne, 2009).

A study by Eckstein, Noack, and Gniewosz (2013) examined predictors of young adults' intentions to participate in politics and their actual political activities. They found that attitudes towards political behavior and internal political self-efficacy beliefs both explained changes in the young adults' intentions to participate in politics and statistically significantly correlated with their actual behaviors – and, as such, support the theory of planned behavior as a useful framework for predicting young adults' intentions and actual participation in politics. In fact, although citizens' intentions to participate in politics were found to predict their political activities, their internal political efficacy was found to be an even stronger predictor. As political self-efficacy can be explained as the subjective belief each individual has in their ability to master participation, the decision to become involved in politics seems to be highly dependent on the perception of whether one can make meaningful contributions to politics or not (Eckstein, Noack and Gniewosz, 2013). Nevertheless, a review by Kosberg and Grevle reveals that little research has been done so far that considers political self-efficacy as the primary research focus (Kosberg and Grevle, 2022).

Several other studies have found political participation correlates with trust in the government and politicians (Kavanaugh et al., 2008; Kleven, 2016; Schulz et al., 2023). With ongoing and revealing journalism that frequently finds faults and scandals with politicians and governments, it is not surprising that some countries see an increased lack of trust in political parties, politicians, and national governments. According to Øyvind Kleven (2016), although there are exceptions, there tend to be a clear connection between participating in various forms of politics, primarily elections and having trust in various political institutions. For instance, in Poland and Kosovo, there is little trust in the national government and, at the same time, a corresponding low voter turnout, meanwhile in the Nordic countries, citizens have great trust in the national governments and a relatively high turnout (Kleven, 2016). In Norway, citizens generally have a high level of trust in political institutions, politicians, and people (With, 2017). However, when it comes to interpersonal trust, women, on average, have higher trust in other people than men and younger citizens generally have higher trust than older citizens in Norway (With, 2017; Dalen and Arnesen, 2020).

## 2.2 Attitudes, attitude change and persuasion

A commonly used definition of an attitude is “a psychological tendency expressed by evaluating a particular entity with some degree of favor or disfavor (Eagly and Chaiken, 2007, p. 598). Attitudes are an essential factor when we process complex information, and they influence our information selection and the way we interpret obtained information and carry out actions (Helgesen, 2017; Kolek et al., 2023). Furthermore, most researchers seem to agree that emotions, thoughts, and behaviors have a causal relationship with attitudes (Olsen and Zanna, 1993). An influential theoretical model that attempts to explain this correlation is the tri-component model sometimes referred to as the ABC model, which suggests that attitudes have an affective component, a cognitive component, and a behavioral component, which collectively forms an individual’s attitude toward an object, person, issue, or situation. However, as Olsen and Zanna (1993) emphasize, while this framework is a useful heuristic for thinking about the causes and consequences of attitudes, all three components will not always apply to a given attitude (Olsen and Zanna, 1993).

The formation and changing of attitudes are widely researched topics, and several factors have been shown to influence how and why attitudes form – including personal experience, observation, learning, and social factors (Pomerantz, Chaiken, and Sorella, 1995; Bohner and Dickel, 2011). Research has, for example, shown that repeated exposure to a stimulus may result in increased positive evaluations (Olsen and Zanna, 1993). The core mechanism to change an individual’s attitude is through the individual processing information related to the attitude object (Kolek et al., 2023). Usually, the individual is exposed to information not in line with their current beliefs. As individuals cannot have two ‘contradictory propositional reasonings’ about the same topics, this creates a cognitive dissonance that needs to be resolved by the individual rejecting one of the propositions or seeking additional information to resolve the cognitive dissonance created and the consistency of their beliefs (Festinger, 1958). Attitudes can furthermore be either explicit and conscious or implicit and unconscious. Traditionally, only explicit attitudes have been measured in research, using self-reporting where respondents evaluate attitude objects on scales (e.g., rating their attitude from good to bad or from 1 to 5). However, in recent years, techniques for measuring implicit attitudes through utilizing response times as an indirect way to measure implicit attitudes have also emerged (Karpinski and Steinman, 2006; Bohner and Dickel, 2011).

While research has shown that people’s attitudes do not always correlate with actual behavior, implicit and explicit attitudes have still been proven to be important predictors of behavior in research (Karpinski and Steinman, 2006; Bohner and Dickel, 2011). This relationship is often explained through the theory of planned behavior by Icek Ajzen (1985), which explains how attitude changes may lead to following behavior changes (Ajzen, 1985). According to this theory, human behavior is influenced by behavioral intentions, which are determined by three considerations: (1) attitudes toward the behavior, (2) perceived normative expectations of others, and (3) perceived behavioral control. The effects of attitudes on behavior, according to this theory, are, in that case, moderated by the individual’s perception

of how feasible a behavior is, as well as the perceived expectations of others. Generally then, the more favorable the attitude is, the more likely it is that the behavior will happen (Bosnjak, Ajzen, and Schmidt, 2020). In other words, changing attitudes may increase the likelihood of desired behaviors happening but never guarantee that a particular behavior occurs.

When authorities in a democratic society want to change the citizens' attitudes or behavior, they have limited opportunities to achieve something through direct behavioral control, and it becomes more compatible with democratic values to use voluntary persuasion (Helgesen, 2017). Persuasion, which is highly related to attitude change, can be explained as the act of attempting to create, reinforce, modify, or extinguish beliefs, attitudes, intentions, motivations, and/or behaviors within the constraints of a given communication context (Gass and Seiter, 2022). It is important to differentiate between persuasion and deception or coercion, as while persuasion involves voluntary change, deception is the act of hiding or altering the truth. In contrast, coercion involves the use of threats or force (Fogg, 2002).

Although the study of persuasive communication traditionally has mostly focused on verbal persuasion strategies, the development of film, television, and visual advertisement has favored the expansion of the term (Ruggiero, 2005; de la Hera et al., 2021). The philosopher Kenneth Burke was the first to acknowledge the persuasive potential of nonverbal domains. "Whenever there is persuasion," he wrote, "there is rhetoric. And wherever there is 'meaning,' there is 'persuasion'" (Burke, 1969, p. 172). Burke's work gave rise to the study of persuasiveness in many different domains, which also increased interest in visual rhetoric, understood as the art of using imagery and visuals persuasively (de la Hera et al., 2021). Persuasion is challenging, especially when it concerns attempting to affect emotion-based attitudes that are strongly rooted in the identity of individuals. In some cases it can be effective to play on fear, but the prerequisite is that people gain knowledge of what they concretely can do to reduce their fear. Furthermore, many individuals are convinced by factual knowledge conveyed by people they trust, while others are more easily convinced through emotional messages (Helgesen, 2017).

## **2.3 Persuasive games**

One potential solution for persuasion and attitude change – digital games, has been gaining momentum in the last few decades (Glas et al., 2019; de la Hera et al., 2021; Boncu, Candel and Popa, 2022; Kolek et al., 2023). Games have been a central part of human culture and history for several millennia and are an ancient form of expression, competition, and learning embedded within cultures worldwide for millennia. In ancient Greece, the ancient Greeks played both dice and sports games, while the Vikings played strategic board games about war, such as Hnefatfl. Around the 1960s, digital games also began to fully develop, and today, an enormous number of digital games are available to play everywhere – on everything from small phones to large TV screens. While digital games are a modern form of games facilitated by technological advances, many core concepts and benefits of traditional games are still included. Traditionally, cultures used games to understand concepts, reinforce knowledge, or learn skills,

and digital games are designed to capitalize on this behavior using modern game technology. As more and more research on games has been released, many researchers have discovered that digital games can be used for far more than just entertainment – also for more serious purposes – such as education, training, health promotion, persuasion, and even changes in cognitive functions (Glas et al., 2019; Tosca, Smith, and Nielsen, 2020).

Digital games have been celebrated by several scholars for the specific properties they bring to the table, which seem to be particularly beneficial in settings where individuals wish to explore and experiment in safe and simulated conditions where they can test themselves without the fear of being wrong, trying alternate solutions and learning, while at the same time being able to experience the consequences of their choices (Janakiraman, Watson and Watson, 2018; Glas et al., 2019). As digital games by several scholars have been found to provide incredibly rich cognitive experiences, several researchers and game designers have begun to custom design games to influence people – so-called ‘serious games’ or ‘games for change’ – commonly defined as all games whose primary purpose goes beyond only entertainment. The idea behind the creation of these games is to utilize the rich cognitive experiences of gameplay in combination with mechanics known to engage and motivate in games to create engaging and cognitively rich experiences that change the player’s brain (Michael and Chen, 2005; Eichenbaum, Bevelier, and Green, 2014). Explained through the concept of ‘neuroplasticity,’ it can be said that individuals who play digital games are exposed to a range of stimuli (for example, visual or auditory), which then activates and strengthens neural pathways in the brain and dispositions for thoughts, emotions, and actions both during and after the gameplay experience (Eichenbaum, Bevelier, and Green, 2014).

One type of serious game is persuasive games, which include advergaming, art games, and news games and can be explained as games that are designed to influence a player’s attitudes or behaviors across a range of issues, such as discouraging smoking, increasing votes and encouraging recycling (Boyle, Connolly, and Hainey, 2011; Maugard, 2019). Persuasive games can be applied to various persuasive goals aimed at multiple target groups and played in different contexts and situations. For example, persuasive games have been used to change eating habits, influence children’s attitudes toward sports, foster empathy toward refugees, and change players’ views concerning climate change (Glas et al., 2019; de la Hera et al., 2021).

Researchers have used empirical, quantitative testing of the attitudes held by players before and after gameplay, usually measured on Likert scales, to study the effects of persuasive games. This usually involves asking players to agree or disagree with written statements indicating a specific stance. The results of such experimental studies on persuasive games so far indicate that persuasive games affect how their players think, both in the short term (Peng, Lee, and Heeter, 2010; Fox et al., 2020; Janakiraman, Watson, and Watson, 2021; Wang et al., 2021) and weeks after gameplay has finished (Ruggiero 2015; DeSmet et al., 2018). As with any kind of mediated intervention, other studies reported a lack of effects or effects confined to specific game elements (Soekarjo and Oostendorp, 2015; Moore and Yang, 2020; Walters and Veríssimo; 2022). It is promising that validation researchers also have compared persuasive



games with other media – for example, persuasive texts (Peng, Lee, and Heeter, 2010; Ruggiero, 2015; Soekarjo and Oostendorp, 2015), videos (Dunn, Shah, and Verissimo, 2020; Moore and Yang, 2020), or a combination of several media (Steinemann, Mekler, & Opwis, 2015; Galeote, Legaki and Hamari, 2023). Results of such comparative studies indicate that in some cases, the persuasive potential of games is greater, while in other cases, non-interactive media perform better. Furthermore, a meta-analysis that focused on narrative video games and changes in attitudes found that digital games have significantly changed both explicit and implicit attitudes and can shape how we think about the events and topics represented in gameplay (Kolek et al., 2023). However, the analysis also found that a larger proportion of the studies in the review examined the effects of digital games on explicit attitude rather than implicit attitude change, indicating a gap in the research (Kolek et al., 2023).

### **2.3.1 Persuasion through gameplay – how games facilitate attitude change**

Traditionally, much research about attitude change through gameplay has assumed that simply providing players with knowledge about a given phenomenon will lead to changes in attitudes and behavior. However, some researchers have argued that if the game's purpose is not related to learning outcomes but to facilitate attitude and behavior change, this approach may be inappropriate (Antle et al., 2014). The question of how playing digital games can facilitate attitude change is essentially a question of how to persuade the players through their gameplay experiences. Persuasion in the context of attitude change can be defined as “the formation or change of attitudes through information processing, usually in response to a message about the attitude object” (Bohner, Erb and Siebler, 2008, p. 162). Attempts at analyzing persuasion date back to ancient Greece, when Aristotle suggested that persuasion is achieved through rhetoric, and three parts that include ethos (trustworthiness), pathos (emotional appeal) and logos (rational appeal) (Ruggiero, 2015). Aristotle’s categorization has been elaborated over time, but in his book *Persuasive Games*, Ian Bogost (2007) suggests that the theory is still useful for analysis of persuasion in games. In his book Bogost also presents the Procedural Rhetoric model as a new model for understanding how games can facilitate attitude change (Bogost, 2007).

Bogost argues that digital games are a unique communication medium for persuasion that is not comparable to traditional media, and that games provide a genuinely new way of presenting information, which he calls procedural rhetoric – meaning that they are able to contain and communicate persuasive messages through ruled-based player interaction (Bogost, 2007; Boyle, Connolly and Hainey, 2011; de la Hera et al., 2021). He argues that the procedurality of games, by which he means their ability to execute rules, makes them unique as a communication medium for persuasion. Bogost proclaims the term procedural rhetoric to distinguish interaction-based processes and arguments seen in games from less interaction-based verbal and visual rhetoric (Siriaraya et al., 2018). While conventional media such as newspapers, TV programs, and books usually communicate meaning directly and transparently through textual, visual, and auditory messages, digital games, in contrast, communicate

meaning through interaction, participation, and personal experiences. Instead of simply providing the player with the desired information explicitly – the player as an alternative is encouraged to interact, observe, and reflect on the information within a given game system (Bogost, 2007; Boyle, Connolly and Hainey, 2011). Bogost explains:

*Because games are representational, they can also depict how things should work – that is, they can make arguments about which worldly behaviors are desirable or undesirable. This approach to argument seemed different enough from other forms of rhetoric – verbal, visual, and so forth – that I suggested a new category for it: procedural rhetoric, namely rhetoric arising from processes, behavior, and models. (de la Hera et al., 2021, p. 30)*

Several other game researchers also support this idea that interactivity is decisive factor both for games as a communication medium and for the players in the game to feel engaged in the games, such as Chris Crawford in his book *The art of Computer Game Design* (1982) and Mark J. P. Wolf (2001) in his book *The Medium of the Video Game* (Tosca, Smith and Nielsen, 2020).

According to Bogost, to persuade the players through their gameplay experiences, the game designers create virtual environments with interaction rules that align with their argument for attitude change. The set of rules decided upon by the designers then functions like real-life laws of nature that define the possibilities inside the game – what a player can and cannot do and what happens when the players make certain choices. The underlying assumption is that by creating a set of rules that make it possible for players to experience events through their choices and interactions, the players will modify their attitudes and behaviors in line with the arguments being made by the game designers (Bogost, 2007). Furthermore, by demonstrating that every action in a game has consequences, which are built into the game structure by the designers, the rhetoric and ethos of these procedures not only allow the player to learn through the game, but also are a more effective and longer lasting way of assimilating information (Ruggiero, 2015).

In addition, the games often involve a possible space representing a microworld, simulation or virtual environment, built by a set of rules and procedures, in which players can explore or play in a simulated situation related to some particular social issue. For example, most persuasive games about sustainability involve gameplay within a small world in which the goal is to create a sustainable solution for that world. Bogost emphasizes that these game worlds can represent cultural values, norms, and expectations that influence the player. In an environmental game about energy usage, for instance, using a lot of energy may result in environmental degradation, high energy prices, or energy shortages – and the implicit message is often that these effects are negative (Antle et al., 2014).

Bogost theory of procedurality of games has so far proven to be one of the most influential in the field of persuasive games, but has nevertheless received some critique by some researchers, such as Miguel Sicart, who argues that building persuasion on procedural rhetoric would mean limiting players' freedom in the game and by extension their sense of agency, and de la Hera that adds additional persuasive dimensions to Bogost's procedural persuasion which

includes narrative persuasion with components such as story and characters and cinematic persuasion involving components such as framing (Siriaraya et al., 2018; de la Hera et al., 2021). In fact, several researchers in the field of persuasive games argue that while digital games seem to have a unique potential to persuade players, this potential includes – but is not limited to – procedural rhetoric (de la Hera et al., 2021).

For instance, Teresa de la Hera (2019) proposed a theoretical model beyond procedural rhetoric to explain how digital games can persuade players. With this model, de la Hera explains that it is not only the rules of the game that convey meaning but also that it is important to acknowledge that other elements in a game are also relevant to persuasion. Using this model, the author explains how other elements in a game — such as the visuals, the sound, and the story — can serve to influence how the content of the game is interpreted by players (de la Hera, 2019). The model does more than reflect how elements in the game can be used for persuasion, as it also explains strategies that can be used in a game’s design to persuade players, such as delivering pleasurable sensorial experiences (e.g., using nice vs. irritating background music), fostering social interactions, or appealing to emotions like fear or happiness. The fact that other persuasive dimensions, such as narrative, sensorial, or sonic persuasion, can be used to influence players’ attitudes through digital games helps to support the idea that persuasive games can be open to letting their players feel the sense of agency they require to be engaged in the experience and still convey a message that is aligned with the designers’ goals (de la Hera et al., 2021).

Several other persuasive game researchers have emphasized the need to examine which specific game design elements seem to be effective for persuasion, and some work has already been published that gives some indications on what elements can cause it to be effective for persuasion. For instance, researchers Fox et al. (2020) found that both enabling increased interactivity and reducing psychological distance in gameplay increased attitude changes compared to gameplay conditions with a lower degree of interactivity and a higher degree of psychological distance (Fox et al., 2020). Peng, Lee and Heeter (2010) and Steinemann, Mekler and Opwis (2015) also manipulated interactivity in their studies and found that playing the game *Darfur is Dying* – as opposed to simply watching non-interactive pre-recorded footage of the game, led to greater role-taking and to the players being more willing to help refugees and more appreciative of the game’s story. Clearly, then, the manipulation of interactivity has knock-on effects on players’ experiences (Peng, Lee, and Heeter, 2010; Steinemann, Mekler, and Opwis, 2015; Fox et al., 2020; de la Hera et al., 2021). Furthermore, when Lin and Wu (2018) compared a more cartoonish presentation style to a style that was considered more adult, no differences emerged in the knowledge gained by participants – but the more professional presentation style led to greater appreciation of the game, which in turn affected behavior (in particular, donation behavior) (Lin and Wu, 2018; de la Hera et al., 2021). Ouariachi, Gutiérrez-Pérez, and Lobo (2018) also compared Spanish and American participants’ attitudes before and after playing the game *2020 Energy* and found that cultural differences between players might also affect how they experience the games and how effective the games are for

promoting certain attitudes (Ouariachi, Gutiérrez-Pérez and Lobo, 2018). Lastly, it is also important to acknowledge that gameplay experiences can be vastly different from player to player and are often dependent on players' characteristics and may be influenced by the context of play (de la Hera et al., 2021).

Furthermore, a meta-analysis of 67 studies from 40 papers that focused on narrative video games and changes in attitudes brought additional data to the debate about which particular game elements are responsible for persuasion. The researchers found that longer intervention duration and game mechanics, such as stereotyping and meaningful feedback, resulted in larger implicit attitude change (Kolek et al., 2023). They did not identify any effect of gender on attitude change; however, their data did suggest that the potential of digital games to affect attitudes slightly decreased with age, but nevertheless emphasize that these outcomes should be approached with caution as they are of an exploratory nature. They conclude that their meta-analysis suggests that narrative video games are able to affect players' attitudes toward the topics depicted in the games and shape how the players think about the world (Kolek et al., 2023). A study by Wang and Chen (2006) suggests that working memory could have a mediating influence on the effects of age on attitude change – specifically that attitude change among older adults (with a mean age of about 75) relies more on argument quantity than argument quality compared to younger adults (with a mean age of about 20), and that this may be caused by the limits of working memory at a higher age (Wang and Chen, 2006).

Several persuasive game researchers have also emphasized the importance of designing persuasive games to realize specific goals for outcomes and aimed-for-transfer effects of gameplay (Siriaraaya et al., 2018; de la Hera et al., 2021). Persuasion in persuasive games can thus be considered the designed user motivations in an interactive game world experience that facilitates aimed-for-user changes in the real world. This goal can range from changes to a user's attitude about a specific issue (e.g., environmental care) to changes to their behavior lifestyle (e.g., encouraging a healthy lifestyle) (Siriaraaya et al., 2018). It can furthermore consist of one attitude (e.g., 'refugees deserve support'), or it can be more abstract – for example, when a multi-layered topic (such as political participation) is addressed. In almost all cases, game designers embed the goals purposively in the design of the game (de la Hera et al., 2021). As the theory of planned behavior (Ajzen, 1985) made it possible to focus on attitude change over behavioral change, which is comparatively harder to gauge, research on the outcomes of persuasive games has generally focused on a change in players' attitudes instead of behavioral outcomes – as attitudinal change precedes behavioral outcomes (Ajzen, 1985; de la Hera et al., 2021).

### **2.3.2 Political games**

It is a widely shared value in western democracies that citizens should engage with political and societal issues, and digital games are arguably an excellent platform for encouraging and developing such political engagement. Playing digital games may facilitate political engagement by allowing players to practice and experience different civic competencies in safe

environments (Glas et al., 2019). While there gradually seems to be an increasing academic interest in the uses and effects of games in different areas of people's lives, little attention has been given to the opportunities games might offer concerning politics and citizenship. A notable exception is research conducted by Kahne, Middaugh, and Evans (2009), which explores the civic potential of video games in general and argues that gaming might foster civic engagement among youths and work as an alternative to traditional classroom settings. The researchers find many parallels both in the structural form of the medium of the game (e.g., possibilities for simulations of parts of the political processes and tools to facilitate collaboration and mentoring) as well as in the content of some games (e.g., learning how certain democratic processes work, learning about events or issues, as well as how to debate and share opinions (Kahne, Middaugh and Evans, 2009). Of particular interest, however, are games that specifically are aimed to affect some sort of attitudinal or behavioral change in relation to political participation, and after about a decade of such research – the general findings of such studies are overall positive (Glas et al., 2019). There is evidence that suggests that playing political video games can contribute to an increase in political participation and engagement, as after playing political games, players in some studies indicate that they have become more engaged with the topics they discussed in the game and have obtained more knowledge about the subject (Glas et al., 2019; Neys and Janz, 2010). The results point towards the indirect effects of playing: that the player's interest in and political engagement with the topic in question may increase and, as such, indirectly affect participation. In one study, for example, about a third of the players indicated that they had become more politically interested after a three-month period (Glas et al., 2019).

### **2.3.3 Digital gameplay in Norway**

Lastly, a look at the Norwegian context regarding digital gameplay is given. Thousands of video games are released yearly (Statista, 2021), and just over one out of every three people on the planet is playing them (Newzoo, 2020). Digital games are also a widely used medium in Norway, as seen in *Figure 1*. Statistics from Norwegian Media Barometer 2022 show, among other things, that a total of 29% of the population aged 9 and older play digital games on an average day in Norway and that Norwegians spend an average of 32 minutes on digital games on an average day – which makes games a more used medium in Norway than both books and physical newspapers, but a slightly less used medium than television in Norway (Schiro, 2023).

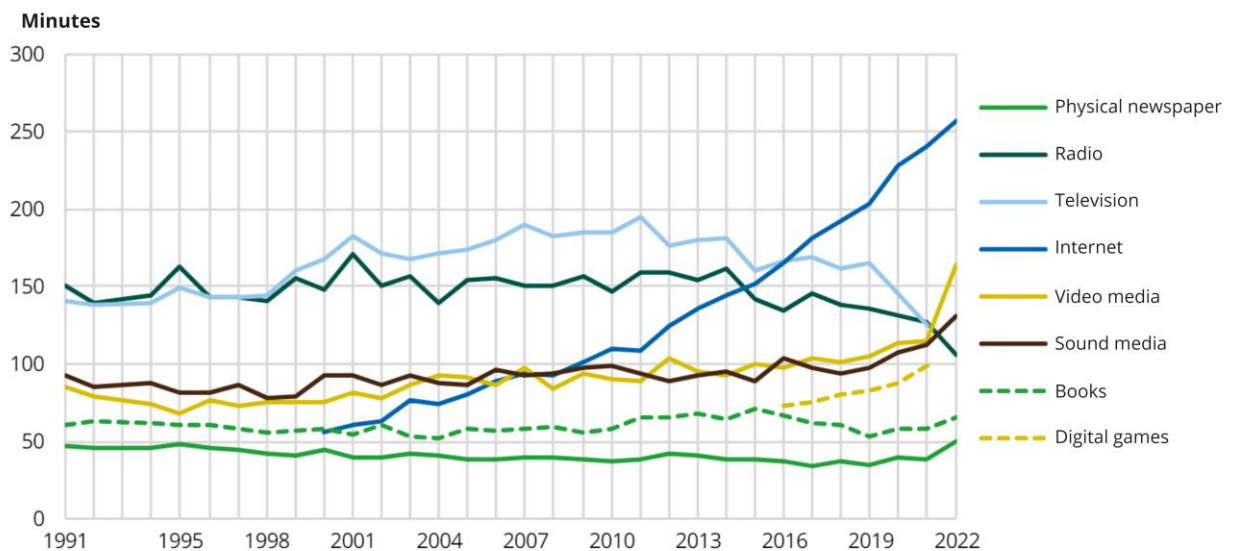


Figure 1 – Time spent on different media among the Norwegian population on an average day (Schiro, 2023).

When it comes to which parts of the population play the most digital games on an average day, as can be seen in *Figure 1*, it is slightly more common among men than among women to play digital games in Norway – where 32% of men and 26% of women play digital games on an average day. Furthermore, younger citizens between the ages of 9 and 15 play the most digital games in Norway – where 71% play on average, and Norwegians between 16 and 24 are the second largest age group, where 48% of Norwegians play on average. Among Norwegians over 25, between 10% and 29% play digital games on an average day, and generally, gameplay decreases with age. Lastly, on average, those with lower education tend to play slightly more games than those with higher education. Other figures from the Norwegian Media Barometer 2022 also show that students and pupils play slightly more digital games than all occupational groups and pensioners – where 54% of students and pupils play digital games on an average day (Schiro, 2023).

In other words, digital games are a widely used medium in Norway, where the youngest part of the population plays more digital games, and men play slightly more than females. Interestingly enough, it can also be seen that the demographics between those who play a lot of digital games in Norway (e.g., young people, men, and citizens with lower education) seem to overlap quite a lot with the groups that have lower political participation in Norway (Schiro, 2023; SSB, 2024)

## 3 Method

### 3.1 Research goal

Taking into account the existing research on serious persuasive games and their potential for persuasion, the goal of this research study is to custom-design a game for persuading Norwegian citizens to increase their explicit attitudes related to political engagement and to scientifically test and evaluate the effects of this game – as one potential solution to change political participation attitudes among Norwegian youths. The target group for the research study is primarily young Norwegian citizens between 18 to 30 years old. With these goals in mind, the following research questions were defined to investigate this.

Table 2 - List of research questions for the research study.

Research questions	Rationale
<p><b>Main research question:</b>  <i>“Can playing the serious persuasive game ‘Deltakelsesspillet’ change explicit attitudes towards political participation among young Norwegian citizens between 18 and 30 years?”</i></p>	<p>By answering this research question, insight can be gained about whether digital games created by designers can be used to influence the explicit attitudes of Norwegian citizens in a positive way (for example by encouraging more socially desirable attitudes – such as increased political engagement).</p>
<p><b>Sub-question 1:</b>  <i>“What reflections about the game and its content does the participants have after gameplay?”</i></p>	<p>Answering this question can provide insight about whether the game can be used to stimulate reflection on socially relevant issues, such as politics, as well as give more insight into how the game influenced the participants.</p>
<p><b>Sub-question 2:</b>  <i>“Which of the measured attitudes seem to be most affected after gameplay?”</i></p>	<p>Answering this question can provide insight about at what areas the game was most effective, which furthermore could give insight into how the game influenced the participants.</p>
<p><b>Sub-question 3:</b>  <i>“How effective does the designed game overall seem to be to encourage changes in attitudes?”</i></p>	<p>Answers to this question can provide insight about the potential and effectiveness of using custom-designed games to change attitudes among Norwegian citizens.</p>

## 3.2 Research process

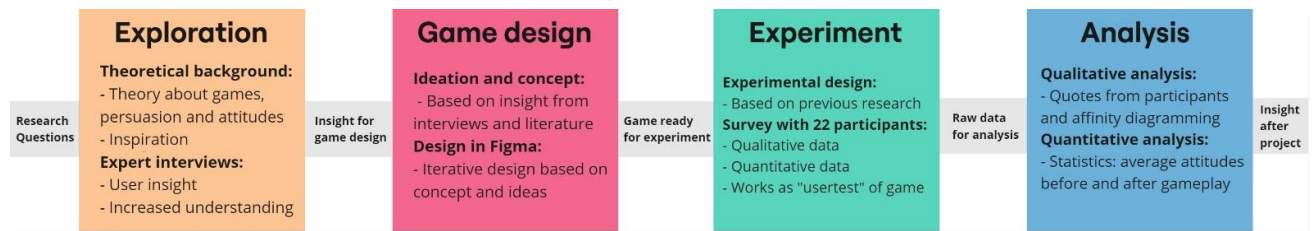


Figure 2 – Visualization showing the process in the research study.

The research process in this design research study can be summarized in *Figure 2*, which divides the study process into 4 main phases where qualitative and quantitative methods were utilized: 1) exploration, 2) game design, 3) experiment, and 4) analysis. In several cases, these phases were worked on in parallel (as, for example, the direction of the game design determined which literature was the most relevant to explore and what interview questions were most relevant to ask), but for the most part, the phases were carried out chronologically one by one.

### 3.2.1 Exploration

In the exploration phase of the study, literature was read from both experimental and theoretical research articles and books about attitudes, persuasion, and digital games, while also conducting desk research for benchmarking on existing political games and existing attempts to increase political attitudes, awareness, and participation in Norway. Furthermore, six semi-structured interviews that lasted about 30 minutes each were conducted with various anonymous ‘experts on political engagement among Norwegian youths,’ which included 3 youth politicians from the political parties *Sosialistisk Ungdom*, *Grønn Ungdom* and *Arbeidernes Ungdomsfylking*, as well as 3 researchers working with various research projects related to political participation of Norwegian youths. The experts were recruited by sending emails to potential interview candidates from various organizations and all major youth political parties, and the interviews were conducted digitally on *Microsoft Teams*. All informants were asked the same 16 questions regarding their views on the current situation of political participation among Norwegian youths, the experienced barriers and challenges, their ideas for solutions, and thoughts on the role of education, the role of digital media, and the potential of using digital games as one potential solution.

The findings from the expert interviews and examining literature, solutions, and games served as inspiration for how to successfully carry out a persuasive game study in the best possible way for the most significant and most interesting insight, in terms of both experimental design and game design. Exploring literature and theory about the phenomena that were explored in the study also worked well to gain an increased understanding and a better overview of the research field, which made it easier to carry out a relevant and interesting study that could lead to new insight, rather than only reproduction of already existing research. For instance, it was found that this study, to the best of knowledge, seems to be the first study in Norway that surveys attitude changes through gameplay.



### 3.2.2 Game design

In the game design phase of the study, a game concept and design were developed iteratively in Figma by taking into account the findings from the expert interviews, as well as the explored theory about games, attitudes, and persuasion, as well as insight about what has been successful for persuasion in previous studies that were explored. As the findings from previous research give indications that especially enabling interactivity through personal choices that have consequences and enabling personal experiences with and reflections on issues probably have the greatest impact on persuasion (Festinger, 1958; Olsen and Zanna, 1993; Bogost, 2007; Bohner and Dickel, 2020; Fox et al., 2020; Tosca, Smith and Nielsen, 2020; de la Hera et al., 2021), a game concept was developed where personal choices and reflection on issues were central to the game. At the same time, the situation and context of Norwegian young citizens regarding political participation were taken into account based on findings from interviews with experts on Norwegian youths' political participation as a baseline for the game design. As such, when experts, for example, highlighted the importance of learning about political participation channels, political discussion, and the fact that your participation matters, these aspects were highlighted in the game design.

In order to prepare a suitable game concept based on these findings and considerations, among other things, simple forms of idea generation and simple requirement specifications were written down in the design tool *Miro* based on the findings from interviews and literature reviews. The final game concept was, after a lot of iteration, a political discussion game where the player plays as a Norwegian citizen who is encouraged by a friend to participate more in politics, and therefore needs to 1) learn about different ways of participating in politics and 2) meet various characters that you discuss politics with through dialogue options while 3) learning about relevant ongoing political discussion topics among Norwegian youths in 2024 (based on findings from interviews). This particular game concept was chosen because findings from interviews emphasized that an ideal game concept for changing political participation attitudes was one where the participants could learn more about political influence channels, learn about the Norwegian political landscape, practice political discussion, and get feedback on their game choices to experience interactivity and feel contingency of actions, and this concept seemed like a good way to achieve this.

In an attempt to try to give the players more empathy and less psychological distance, the design of the game was done in Norwegian rather than English, and the game characters were ordinary citizens, while the geographical location was mainly described as 'your municipality' or 'your city' instead of a specific place – as Fox et al. (2020) found in their study about persuasive games that this can give a prediction of how much attitudes change through games. Some other important game design decisions include using AI-generated real-looking people from the website *thispersondoesnotexist.com* rather than cartoon characters, as well as trying to give characters varied but realistic personalities to make the characters seem more real and make the game seem more realistic, as realistic game design might influence persuasion effects (Lin and Wu, 2018).

Furthermore, findings and advice from interviews with experts guided content creation and design, through following some general principles of game design based on expert recommendations: such as that the game should increase players political self-efficacy, that the content should be engaging, that the content should present participation as low-threshold and easy and that the content should be politically neutral and give objective and neutral information that encourage people to participate, rather than persuade players to participate or vote in a particular way. Other important considerations that were made during game design were that the game was meant to take around 10 to 15 minutes to complete, that the game was meant to be emotionally stimulating (through appealing to, for example, feelings of collective responsibility, worry, guilt and empathy), and that the players should feel consequences of their game actions.

### **3.2.3 Experiment**

An experimental study was conducted using questionnaires measuring attitudes before and after gameplay to collect qualitative and quantitative data to answer the research questions. As it is most common in persuasive game research to measure attitudes by using questionnaires with Likert scales to measure similar or identical attitudes before and after gameplay, it was chosen to use pre-gameplay and post-gameplay questionnaires that included the exact same 20 questions measuring attitudes towards political participation before and after the gameplay experience – where the answer options were agreement on statements on Likert scales from 1 (“To an extremely small degree”) to 7 (“To an extremely large degree”). 7-point Likert scales were decided on rather than 5-point Likert scales, because these are more sensitive with more varied answer options, which might make it easier to see variance from before to after the experiment. It was decided that it was not practically feasible to ask enough participants to participate at different times in the same experiment, so it was chosen not to wait one week between the answers to the pre-gameplay and post-gameplay questionnaire. It was also chosen not to use control groups for the experiment – to gather as many participants as possible that gave information about the gameplay experience, and to compare attitudes before and after the gaming experience instead of comparing different interventions.

To prepare the questions for the questionnaire, most of the questions were based on scales and questions from previous research on political participation and engagement, such as a study by Johnson and Kaye in 2003, a study by Kavanaugh et al. from 2008, and a study by Eckstein, Noack, and Gniewosz from 2013. Furthermore, questions from the International Civic and Citizenship Education Study (ICCS) from 2022, which measures civic knowledge and engagement among 14-year-olds, also served as inspiration for several questions. The final 20 questions used to measure attitudes on 7-point Likert scales can be seen in *Table 3*, which also shows that the questions were additionally categorized into 6 sub-categories related to 1) interest towards politics, 2) perceived importance of politics, 3) perceived responsibility in regards to participating in politics, 4) political efficacy (as in considered effect of own

participation), 5) trust in the political system and politicians and 6) political behavioral intentions.

These categories are based on what previous research has found to be important aspects of attitudes toward political participation – such as political efficacy, political trust, interest in politics, and behavioral intentions (Ajzen, 1985; Johnson and Kaye, 2003; Kavanaugh et al., 2008; Eckstein and Gniewosz, 2013; Kleven, 2017; Schulz et al., 2023), combined with other metrics that were predicted to measure attitudes towards political participation in a good way (such as perceived importance of politics and perceived responsibility to participate). The rationale behind dividing questions into various categories was that it would be easier to later analyze which types of attitudes the gameplay experience was most effective for changing. Regarding attitudes towards political participation, much research so far has shown that especially ‘political efficacy’ is an extremely important – perhaps the most important, predictor of actual political behavior (Johnson and Kaye, 2003; Kavanaugh et al., 2008; Eckstein, Noack and Gniewosz, 2013; Schulz et al., 2023). Furthermore, this is also something that several expert informants highlighted as a very important predictor of Norwegian youths’ political participation. This is why more questions measure this type of attitude than questions for other categories (6 questions compared to 3 or 2).

Table 3 – The 20 items measuring attitudes towards political participation used in the study.

	<b>Category</b>	<b>Political participation statements (attitudes)</b>
1	Political interest	<i>“I am interested in political and societal issues.”</i>
2	Political interest	<i>“I find political discussions and debates interesting and relevant to my everyday life.”</i>
3	Political interest	<i>“I am interested in seeking out information about political and societal issues.”</i>
4	Percieved importance	<i>“I believe it is important to participate in politics.”</i>
5	Percieved importance	<i>“I believe it is important to vote in elections.”</i>
6	Percieved importance	<i>“I believe it is important to participate in political discussions.”</i>
7	Percieved responsibility	<i>“I believe I have a personal responsibility to participate in politics.”</i>
8	Percieved responsibility	<i>“I believe I have a personal responsibility to keep myself informed about political and societal issues.”</i>
9	Percieved responsibility	<i>“I believe I have a personal responsibility to express my opinion on political and societal issues to others.”</i>
10	Political self-efficacy	<i>“I consider myself well qualified to participate in politics.”</i>
11	Political self-efficacy	<i>“I feel confident in my ability to understand and contribute to political discussions in Norway.”</i>
12	Political self-efficacy	<i>“There are plenty of ways for me to have a say in what the national government does.”</i>
13	Political self-efficacy	<i>“I believe that my political participation can make a positive impact on political and societal issues in Norway.”</i>
14	Political self-efficacy	<i>“I believe my opinion matters in political and societal discussions.”</i>

15	Political self-efficacy	<i>"I believe I should express my opinion on political and societal issues in public, even if it differs from others."</i>
16	Political trust	<i>"In general, I have trust in the political institutions and the Norwegian democracy."</i>
17	Political trust	<i>"In general, I trust the national government in handling problems a great deal."</i>
18	Political trust	<i>"In general, I trust politicians to handle problems a great deal."</i>
19	Behavioral intentions	<i>"In am planning on participating in future political discussions whenever possible."</i>
20	Behavioral intentions	<i>"I am planning on voting in future elections whenever possible."</i>

In addition to questions about attitudes to statements about political participation before and after gameplay, the pre-gameplay questionnaire included five questions to measure demographic information (including gender, age, the highest form of education, internet usage, and social media usage), as well as six questions measuring gameplay behavior and 13 questions measuring political behavior. These questions were, to a large degree, inspired by previous studies – especially the previously mentioned studies and the ICCS survey from 2022. Furthermore, the pre-gameplay questionnaire included four open-ended questions where participants wrote text answers about their political participation and engagement in Norway – more specifically about 1) which factors contribute to their interest in political participation, 2) which challenges they face regarding political participation, 3) which political issues they care the most about and 4) which initiatives they think would be effective to make political participation more attractive and accessible for them. In the post-gameplay questionnaire, the participants were lastly asked 5 open-ended questions about their gameplay experience – more specifically, 1) their thoughts about the game, 2) if they found the game entertaining, 3) if they found the game educational, 4) if they think gameplay changed their view on political participation and 5) what they would change about the game (see *Appendix C* for further details on questionnaire questions).

After making the pre-test and post-test questionnaires in Norwegian on the website *Nettskjema.no*, 22 participants were recruited to participate in the experiment by recruiting people from a local university and some people through personal networks. The requirement for participating was to be a Norwegian citizen between 18 and 30 years old, and it was attempted to achieve some level of gender balance. All participants completed the experiment on a computer by first answering the pre-gameplay questionnaire, then playing the game for about 10 to 15 minutes (by clicking on a link to the game at the end of the pre-test questionnaire), and then filling in the post-gameplay questionnaire.

### **3.2.4 Analysis**

The last part of the study involved turning the raw data from the experiment into insight through analysis. For quantitative analysis, statistics on average numerical attitudes before and after the player experience were calculated using *Microsoft Excel* and *SPSS*, while affinity diagramming and quotes were used to structure, analyze, and present the qualitative data using *Miro*. For quantitative data analysis, all answers were exported into *Microsoft Excel*, where average

answers from 1 to 7 for each question were calculated before and after the gameplay experience for all participants and all attitude items. To calculate the statistical significance of the results, a paired sample t-test was conducted in *SPSS* on both the statistical significance of the overall average change from before to after gameplay across all participants and all attitude statements, as well as the statistical significance of average attitude change for each of the six categories of attitudes. Furthermore, participant groups with common demographics (namely gender, age, education, gameplay experience and political behavior) were compared in terms of average attitude change – to see if some demographics seemed to correlate with how much the attitudes changed after gameplay. For qualitative data analysis, all direct statements from the 22 informants on all 9 open-ended questions were structured according to general patterns through affinity mapping in the design tool *Miro*. All responses from the participants that did not contain any information, such as “*I don’t know,*” “*Unsure,*” and “*See answer above,*” as well as a few unclear responses that did not answer the questions, were excluded from the analysis. Lastly, graphs and visualizations were made to report the quantitative and qualitative findings.

### **3.3 Steps to effectively design a persuasive game**

The research design of this research study was, to a large degree, based on a method for persuasive game design by Siriaraya et al. (2018), which adopts a flexible ‘cookbook’ approach where game designers can choose from various components and tools to create a successful ‘meal’ (persuasive game) and includes a detailed list of steps and elements to consider during the persuasive game design process. The method suggests completing a persuasive game design process through four major steps: 1) defining the transfer effect of the game, 2) investigating the user’s world, 3) game design, and 4) evaluation of effects. According to the researchers, this method provides enough design freedom on the one hand and enough practical structure on the other, and they argue that this method allows designers to tailor their design approach to better suit the context, available resources, and their personal design preferences. Although it is impossible to come up with a perfect formula that always works for the design of a persuasive game, due to the wide diversity of applications and solutions, some researchers have argued that the most complete design approach for persuasive games published to date is the one proposed by Siriaraya and colleagues (2018) (Siriaraya et al., 2018; de la Hera et al., 2021).

The researchers furthermore highlight that an important aspect of their proposed approach is that to make a proper persuasive game design, not all four steps require the same amount of attention or effort. They point out that depending on, for example, the task at hand, expertise, time, and constraints, some designers may focus more of their resources within a particular step than others. However, they also point out that a persuasive game risks not being able to realize its full potential when parts of the design processes are neglected (Siriaraya et al., 2018). While all four steps were considered in this research study, most emphasis was put on steps 3 and 4 because these were seen as more relevant for the context of this study – in terms of, for example, research goals and research questions.

**Step 1: Defining the transfer effect of the game.** The first step of persuasive game design according to Siriaraya et al. is to define the transfer effect of the game – in which they mean the details on the type of desired effects or change the designer aims to deliver through the game experience. Other researchers have also emphasized the importance of designing persuasive games with the purpose of realizing specific goals for outcomes and aimed-for-transfer effects of gameplay (de la Hera et al., 2021). This transfer effect can consist of one attitude (e.g., ‘refugees deserve support’), or it can be more abstract (Siriaraya et al., 2018; de la Hera et al., 2021). To define the transfer effect in this study, 6 in-depth interviews were conducted with domain experts (both researchers and youth politicians) in the early stage of the study to understand more about what transfer effect was desired to answer the research questions. Additionally, scientific literature on relevant topics related to political engagement and games were investigated to gain more insight into what transfer effect would be most ideal for this study. The transfer effect type ultimately chosen was changing attitudes towards political engagement shortly after gameplay.

**Step 2: Investigating the user’s world.** The second step of persuasive game design is to investigate the user’s world. Siriaraya et al. argue that since persuasive games intend to have an effect outside the game world, it is important for designers to get acquainted with the real-world context in which these effects are intended to be realized. As such, they argue that designers of persuasive games might want to examine the real-world context in which the game would take place, be used, or investigate relevant real-world information for the game design. Furthermore, the designers need to fit the design to the context, preferences, needs, and capabilities of the specific users of the game. After all, as the researchers point out: “*When viewed from a design perspective, persuasive games are in essence, user experience design projects*” (Siriaraya et al., 2018, p. 45). To investigate the user’s world in this study, interviews with experts with experience talking to and working with the target user group were used to get background information about the users, while questionnaires sent out to the users themselves were used to gather additional information about their demographics, behavior, thoughts, and attitudes before and after gameplay.

**Step 3: Persuasive game design.** The third step of the persuasive game design process is the game design process, which usually tends to involve iterative design, where the game is designed and improved in iterations. According to the researchers, the conceptualization of a persuasive game generally follows two principles in succession, starting with the divergence and followed by the convergence of ideas. The objective of the divergence stage is to explore possible persuasive game ideas and concepts through methods such as brainstorming. In the convergence stage that follows, these ideas and concepts are evaluated and refined based on how well they fit with the aimed-for-transfer goal and perceived effects. The researchers suggest that the designer in the game design process can specify, for example, which game elements, mechanics, storylines, game metaphors and problem spaces the game should include. As previously mentioned, in this study, the focus in game design was on creating a narrative game with a storyline and game mechanics that enabled personal experiences with and

reflections on issues related to political participation and discussions, while also ensuring that players experienced interactivity, felt contingency of their game actions and experienced political self-efficacy. This is because previous research and theories on persuasive games and attitude change suggests that aspects such as interactivity, contingency of actions, narrative expression, personal experiences, exposure and self-efficacy may be important to effectively change attitudes towards political participation (Festinger, 1958; Ajzen, 1985; Olsen and Zanna, 1993; Bogost, 2007; Eckstein, Noack and Gniewosz, 2013; Tosca, Smith and Nielsen, 2020; Bohner and Dickel, 2020; Fox et al., 2020; de la Hera et al., 2021).

**Step 4: Evaluation of effects.** The fourth, and last, step of persuasive game design is to evaluate the effects of the persuasive game – which can usually be done through an experiment or a test. According to Siriaraya et al., in contrast to common expectations, the results of evaluative studies rarely provide a simple yes or no answer but often provide margins of the likelihood of game effects varying from very unlikely to almost certainty. They explain that there are three types of values that an evaluation of persuasive games can aim to increase: a value at a knowledge level (‘What can be learnt on how to design more effective persuasive games?’), at a user-effect level (‘Did the game succeed in achieving the transfer-effect?’), and at a commercial level (‘How does the game perform in the commercial market?’). In this study, effects at a knowledge level and user-effect level were both relevant to measure, while effects at a commercial level were less relevant. Furthermore, the researchers also suggest that the designer might be interested in examining the gameplay experience of the users – including their level of enjoyment and engagement with the game. To evaluate this study's effects, qualitative data about the user's thoughts about their player experience and political engagement and quantitative data about their political participation attitudes before and after gameplay were used to measure effects.

## 3.4 Participants

### 3.4.1 Players

In the study, 22 young Norwegians between 18 and 30 years were recruited to participate, where 11 were male and 11 were female, with a mean age of 25.2 years (SD=3.66). The participants were recruited through convenience sampling and a combination of recruiting people from a local university, personal network, and snowball-sampling. In *Table 4*, basic demographics about the participants are given – including their gender, age, education, overall political behavior, as well as their average time spent daily on digital games. As can be seen in the figure, the age varied between 18 and 30 years, with the majority of participants being between 23 and 30 years old – and generally slightly older than what would typically be considered a ‘young Norwegian’.

Table 4 – Basic demographic information about the participants.

Basic demographics of participants		Frequency (n)	Percentage (%)
<b>Gender</b>	<i>Male</i>	11	50%
	<i>Female</i>	11	50%
<b>Age</b>	<i>18-24 years</i>	11	50%
	<i>25-30 years</i>	11	50%
<b>Education</b>	<i>Master's degree</i>	10	45.5%
	<i>Bachelor's degree</i>	7	31.8%
	<i>Upper Secondary School</i>	5	22.7%
<b>Gameplay amount</b>	<i>Less than 1 hour</i>	11	50%
	<i>Between 1 to 3 hours</i>	9	40.9%
	<i>Between 4 to 6 hours</i>	2	9.1%
<b>Political behavior</b>	<i>High political participation</i>	12	54.5%
	<i>Low political participation</i>	10	45.5%

Regarding the highest form of education, 10 participants had a master's degree, seven participants had a bachelor's degree, and five participants had completed upper secondary school. In contrast, no participant had a PhD or primary school as their highest form of education. Regarding overall political behavior, it can be said that 12 participants can be considered to have high political participation, while 10 participants can be considered to have lower political participation. This was calculated based on considering all participants who had been a member of a political party or political organization, as well as all those who voted in both all national and all regional elections, as having high political participation (as these participants also generally scored high on other forms of political behavior such as reading news often, discussing politics, participating in activism). Lastly, regarding average time spent on gameplay daily, exactly half the participants spent less than one hour daily on gameplay, while nine participants spent about one to three hours daily, and only two participants spent four to six hours daily. Meanwhile, none of the participants reported spending more than six hours daily on gameplay.

As can be seen in *Table 5*, which shows additional demographic information, the participants generally, on average, spent a lot of time per day on the internet, with 14 out of 22 participants spending more than six hours each day on internet, while four participants about four to six hours internet and four participants spent about one to three hours daily on internet on average. None of the participants answered that they, on average, spend less than one hour on the internet daily, which further emphasizes that the participants overall spend a lot of time on the internet. This is not too surprising as national statistics also show that most Norwegians



spend a large amount of time on the internet (Schiro, 2023). When it comes to how often the participants play digital games, it can be seen that seven participants play digital games daily, six participants play several times a week, one participant plays once a week, and six participants play several times a month. In comparison, two participants play rarely or never. This indicates that almost all participants have some degree of familiarity with playing digital games but that some are significantly more active players than others (as can also be seen when looking at the average time spent on games among participants). Furthermore, it can be seen that participants spend a decent amount of time on social media on average, as 14 out of 22 participants spend about one to three hours daily on social media. In comparison, four participants spend about four to six hours daily, and five participants spend less than one hour daily on social media. This shows that while participants generally spend a decent amount of time on social media – generally a bit more than on digital games on average, they nevertheless spend significantly more time on the internet overall.

Table 5 – Additional demographic information about the participants.

Additional demographics of participants		Frequency (n)	Percentage (%)
Internet usage (h)	<i>Between 1 to 3 hours</i>	4	18.2%
	<i>Between 4 to 6 hours</i>	4	18.2%
	<i>More than 6 hours</i>	14	63.6%
Social media usage (h)	<i>Less than 1 hour</i>	5	22.7%
	<i>Between 1 to 3 hours</i>	13	59.1%
	<i>Between 4 to 6 hours</i>	4	18.2%
Gameplay frequency	<i>Daily</i>	7	31.8%
	<i>Several times a week</i>	7	31.8%
	<i>Several times a month</i>	6	27.3%
	<i>Rarely or never</i>	2	9.1%
Member of a game community?	Yes	3	13.6%
	No	19	86.4%
Played a political game?	Yes	4	18.2%
	No	18	81.8%

Only three out of 22 participants answered that they are members of any online game community or forum, and overall, they specify in follow-up questions that they are members of communities for the platforms *Reddit*, *Steam*, and *Discord* for the games they play. Similarly, only four out of 22 participants answer that they had played games with political

themes or elements before. When asked in a follow-up question to share their thoughts about the impact and effectiveness of games in promoting political engagement or awareness, one participant answered that they “*believe that games provide a unique opportunity for players to get into a mindset/way of being that they might otherwise not have had the chance to experience,*” and that “*this can be used to arouse empathy (political awareness) and encourage action (commitment).*” Other participants highlight that it is important that “*the game creator has done it in a natural and meaningful way, rather than just forcing it into the story of said game,*” compare games as a media to other media and says that “*just as movies and music or other forms of art, games that are mostly story-based can affect how people think and shed light over political situation*” and says that games “*can help promote a perspective on an issue and give information.*”

In terms of the political behavior of the 22 participants, measured by answering 13 questions about frequency of behaviors such as voting, discussing politics, reading news, participating in activism and being a member of a political party or organizations, this can be seen in *Table 6*. Overall, it can be said that the majority of participants voted in all national elections (86.4%) and all regional and local elections (54.5%). In comparison, significantly fewer participants were members of political parties (18.2%) or organizations (31.8%), which corresponds well with national statistics on Norwegian political participation (SSB, 2024). Furthermore, few participants overall participated in protests, demonstrations, and petitions, while political discussions were somewhat more common among participants but still a less frequent behavior than voting. Lastly, most participants read news daily (54.5%) or several times a week (27.3%), while only 1 participant read news “rarely or never” (4.5%). Social media (90.9%) and online newspapers (81.8%) are by far the most common news source among the participants, although a decent amount of participants reported using television and radio for following news (36.4%).

Table 6 – Reported political participation behavior for study participants.

Political participation behavior among participants		Frequency (n)	Percentage (%)
Voting in national elections	All elections	19	86.4%
	Some elections	3	13.6%
	Never	0	0%
Voting in regional and local elections	All elections	12	54.5%
	Some elections	9	40.9%
	Never	1	4.5%
Frequency of reading news about local, national, or global politics	Daily	12	54.5%
	Several times a week	6	27.3%
	One a week	2	9.1%
	Several times a month	1	4.5%
	Rarely or never	1	4.5%
Is or have been a member of a political party?	Yes	4	18.2%
	No	18	81.8%
Is or have been a member of an organization?	Yes	7	31.8%
	No	15	68.2%

<b>Frequency of political activism (such as protests, demonstrations, and petitions)</b>	<i>Often</i>	0	0%
	<i>Sometimes</i>	3	13.6%
	<i>Rarely</i>	11	50%
	<i>Never</i>	8	36.4%
<b>Frequency of political discussions</b>	<i>Often</i>	1	4.5%
	<i>Sometimes</i>	11	50%
	<i>Rarely</i>	9	40.9%
	<i>Never</i>	1	4.5%

Lastly, when the participants were asked how often they used digital media to either write their own posts, share content, comment or like/react to posts about political and societal issues on social media or internet, the results can be seen in *Table 7*. As can be seen in the figure, the participants very rarely ever post content about political and societal issues, while it is slightly more common to share posts or comment on online posts, and even more common to like (or react to) online posts among participants. Overall it does, however, seem to be very rare for the participants to participate at all in political or societal issues on social media and the internet, as 20 out of 22 participants rarely or never post content, 17 out of 22 rarely or never share content, 14 out of 22 rarely or never comment on posts and 12 out of 22 rarely or never like (or react to) posts about political and societal issues.

Table 7 – Reported political participation on social media among study participants.

<b>Social media political participation</b>	<b>Post content about political or societal issues</b>	<b>Share content about political or societal issues</b>	<b>Comment on online posts about political or societal issues</b>	<b>Like (react to) online posts about political or societal issues</b>
<i>Daily</i>	0	0	0	0
<i>Several times a week</i>	0	2 (9.1%)	0	2 (9.1%)
<i>Once a week</i>	1 (4.5%)	0	0	1 (4.5%)
<i>Several times a month</i>	1 (4.5%)	3 (13.6%)	8 (36.4%)	7 (31.8%)
<i>Rarely or never</i>	20 (90.9%)	17 (77.3%)	14 (63.6%)	12 (54.5%)

### 3.4.2 Experts

Six interviews lasting about 30 minutes each were conducted with 6 different informants that all can be called ‘experts on political participation among Norwegian youths’ (as in Norwegian between 13 to 30 years). Three informants were regional leaders of different youth political parties in Norway with multiple years of experience with talking to Norwegian youths and trying to engage them to participate in politics. Furthermore, one informant was a Ph.D. researcher working on a research project to increase political participation among Norwegian youths through school education. Another informant worked in *Kommunsektorens- og arbeidsgiverorganisasjon* (KS) on a project to teach Norwegian youths about local political participation and democracy. The last informant worked in *The European Wergeland Centre*

in Norway and have through this work participated in facilitating various educational activities to educate young Norwegian citizens about democracy and political participation. All six informants were asked the same 15 questions regarding their views on the current situation of political participation among Norwegian youths, the experienced barriers and challenges, their ideas for solutions, and thoughts on the role of education, the role of digital media, and the potential of using digital games as one potential solution. The experts were asked to describe the current level of political participation among Norwegian citizens, what experiences they had with increasing political engagement, how they work to increase political engagement and participation and if there seems to be any particular political issues or causes that young Norwegians seem to feel strongly about. Furthermore, they were asked what they think are important reasons why many Norwegian youths do not participate politically and what barriers and challenges they have observed in terms of youths' participation. They were also asked about what initiatives and strategies they believe are effective in reaching and engaging young people in politics and what they thought should be the role should be for schools and educational institutions. Lastly, they were asked what they thoughts about using digital media in general, as well as games in specific, to increase political participation and awareness – and what potential educational content should be given in a game to increase political participation and awareness (see *Appendix D* for further details on questions asked).

## 4 Results

### 4.1 Expert interview findings (as a baseline of the study)

#### 4.1.1 Current situation

According to the expert informants, the current situation of political participation among Norwegian youths is nuanced and not a clear picture – where certain factors point towards the direction that the political engagement is going down, while other factors point towards it being stable, and lastly some factors also point towards the engagement going up. The experts also highlight big differences between political engagement on a national level and the local level. Nevertheless, as the researcher informant points out

*The general trend, however, is that more traditional forms of political engagement and participation, which are linked to the institutional democracy – such as joining political parties and organizations, are going down, while voter turnout in general seems to be stable in Norway – unlike many other countries, and at the same time more ad-hoc engagement linked to specific issues – preferably expressed through social media, seems to be increasing among youths in Norway.*

Several informants also refer to the *International Civic and Citizenship Education Study* from 2022 ([ICCS](#)) about civic participation among youths, which shows that competence about

democracy among Norwegian youths is generally sinking compared to previous ICCS surveys in 2016 and 2009. One informant explains that the ICCS study showed that *“while Norwegian youths knew a lot about democracy on a theoretical level, it also showed that they had low competence about how to take actions and participate”*. In other words, the study shows that Norwegian youths often do not know much about how to influence or participate in politics and democracy. Informants highlight that many youths in Norway generally seem to use other arenas to engage themselves politically than what was common before – for example, many youths tend to use social media to express their opinions and commitment. Furthermore, as one informant says: *“Most youths today seem to often have ‘one cause of interest’ that is more relevant to them instead of being generally politically engaged in everything at the same time”*. The informants explain that many youths tend to choose some topics to be engaged in over a short period of time instead of always having a general high political engagement. Examples given by informants on such topics are the Israel-Palestina conflict, the Russia-Ukraine conflict, and taxes.

The researcher informant also mentioned that they conducted their own interviews with several Norwegian youths about their political engagement as part of their research project. They explain that they found that *“when youths are asked what engages them, the simple answer is that they are generally engaged in what is close to them, relevant to them and what affects them”*. They elaborate that the youths, when asked about what they want to change, mention things from their own everyday life, such as mobile usage and plastic straw usage in their school, as well as local sports activities such as football and handball, and that most of the issues mentioned by youths were closely related to the individual and their everyday lives rather than general issues such as global peace and climate emissions. The informant who conducted the research explained that other research he has read had approximately the same findings – that *“when young people are politically engaged, it is often linked to what is related to themselves and their everyday lives”*. The informant from KS also did similar insight work on the same topic and found that Norwegian youths were engaged towards topics like public transport – e.g., that buses go often enough and to the places where the youths live, as well as engagement around topics such as low-threshold recreational activities for youths. Youth politicians on the other hand said that youths they had talked with seemed to generally be interested in topics such as tax politics, student politics, drug usage among youth, debates around freedom of speech, as well as feminism among women – while political engagement around climate emissions has significantly decreased recently.

#### **4.1.2 Challenges and barriers**

According to the informants, multiple barriers and challenges prevent Norwegian youths from participating in politics and democracy. First of all, many young Norwegians do not have enough knowledge about how to participate in politics and which areas they can use to express their opinions or influence. As the researcher informant explains:

*The youths don't learn much about these traditional influence channels and how to participate in politics through school – which is one of their main sources of information about Norwegian democracy and politics [...] which is probably the most important reason as to why the youths are not that engaged regarding traditional forms of political participation.*

Secondly, many young Norwegians do not find the traditional forms of political participation relevant to them, and many think it is old-fashioned, boring, or too bureaucratic to join political parties or organizations, go to meetings, or be active in various committees. One informant explains: *“When youths are to be active in youth councils, the same methods for older politicians are used, where they must go through the same bureaucratic processes as the older politicians, which often don't work well for youths”*. The informants also point out that

*Statistics and research show that political participation is not evenly distributed in the population; where we, for example, know that girls participate more than boys in Norway and that language, education and socioeconomic background of your parents have a lot of influence on the likelihood of you participating.*

The informants point out that the fact that these factors have an impact means that if political participation is to be increased through education, some people will respond better to this type of education than others because of these various factors. Some additional challenges addressed by youth politicians are that young Norwegians seem to find *“politics too overwhelming and complex to understand – because everything in society is politics,”* and that they end up thinking that they do not know enough about politics to have opinions or participate at all – even though the youths often have a lot of opinions (which they do not voice). They also add that many young Norwegians *“don't know what the different political parties stand for and that it is hard for them to distinguish between them”* – making participation harder.

#### **4.1.3 Solution**

The informants highlight that a solution to increase political participation among youths must *“be low threshold”*, and that *“you have to meet young people where they are,” “show them how they can influence”* and *“why it is important to participate in democracy and politics”*. They also point out that role models and opinion leaders who talk about how important it is for youths to participate in politics can be effective. Furthermore, the informants point out that to reach all young people, *“the school system is the primary arena where all young people are – and therefore a quite effective arena for reaching as many youths as possible.”* According to the research informant, *“Studies of the ICCS survey from 2016, as well as other research, shows that one of the major determinators for whether young people think they will participate in political is political self-efficacy – not, for example, knowledge about democracy or democratic values or attitudes.”*

They explain that political self-efficacy is *“the belief that you can make a difference, that you can manage to master participation, and that you are worth listening to”*. According to the informant, those with high political self-efficacy tend to participate, while those with lower political self-efficacy often do not – to put it simply. They also explain that studies like ICSS give us insight into how this self-efficacy is distributed among youths in Norway, where it can be seen that *“there are large social differences: girls, for example, have higher self-efficacy than boys, and higher socio-economic status and mastery of language also give higher self-efficacy.”*

The researcher-informant examined how Norwegian youths develop this political self-efficacy in their own research project. They found that *“One way to develop this self-efficacy is through what is called ‘an open classroom climate’ – where there is room for discussion, where you are respected for your opinions, and there is a high ceiling for people to have different opinions.”*

Another factor that was found to be important was role models – people who are similar to the youths, for example, in terms of background, skin color, or language – someone the youths can identify with. Lastly, the informant found that it also was important for the development of self-efficacy that *“real and authentic questions are discussed – where you try to find a solution”*. They found that some participants in the research discussed topics that were a bit artificial in the classroom, where there was no aim to agree or reach a conclusion, but where there was just talk – and this was found to have less effect on self-efficacy for youths. They explain that *“when the students felt that real questions were discussed, discussions contributed to an increase in political self-efficacy among the youths.”*

Youth politicians also highlight similar factors to consider for solutions – such as the importance of participation being low-threshold and the importance of youths feeling that their opinions and participation matter, but they also emphasize the importance of making youths more aware of what local political arenas, political activities and ways of participation that are near them and making these local arenas more visible and accessible – for example through the school system. They also point out that *“since many youths often don’t participate in their own initiatives, you have to find out what is relevant for them and develop slightly different strategies depending on what they are concerned with and interested in.”*

#### **4.1.4 Role of education**

The informants all think education through educational institutions is very important in learning about democracy and raising political knowledge, awareness, and engagement. Informants point out that while schools have an important role in shaping the youth’s political engagement and understanding, they are also responsible for building democratic attitudes – such as tolerance, respect, and equality. They explain that the way schools are set up in Norway, youths can learn about and exercise democracy through, for example, participating in discussions, decision-making in school, and student organizations. Through this, the school can

enable youths to learn to express themselves, respect other people's opinions, and cooperate with fellow citizens.

The researcher informant, with experience working in schools, thinks the curriculum would improve if *“it said something about the importance of having open discussions of real, authentic questions in the classroom that the students themselves feel are important – rather than just talking about non-authentic topics to fill a discussion hour in the classroom”*. They explain that schools and teachers should include more socially relevant discussion topics, open discussions, and debate rather than just facts in the school curriculum. They say that

*Too many of the conversations and discussions in school classrooms today are about individual and personal opinions that are based on who you are – your identity, your experience, and your background by saying things like ‘in my opinion,’ ‘I think’ or ‘I feel.’*

According to the informant, research shows that it is better to develop self-efficacy if discussions are based on professional and rational arguments instead of feelings. They also say that: *“discussions based on taking other perspectives than your own – perhaps arguing for the opposite view of what you have or perhaps arguing for a political party’s position on an issue positively affect self-efficacy.”* The youth politicians emphasize the importance of keeping people in school and creating a varied and interesting school day for young people, so they can more easily follow the whole school course. They argue that not everyone is equally theoretically inclined and that it, therefore, could be interesting to explore alternative ways of learning – especially when it comes to democracy education and what the various parties think on different issues and have on their political agendas. The youth politicians also highlight that

*Democracy education tends to be a bit too systematic regarding, for example, how the municipality system is structured, how Stortinget and departments work, while you don’t really get to know influence channels or get training in the different perspectives in politics and why political parties think the way they do.*

They, therefore, think that education should involve explaining the different sides and beliefs in politics in a neutral and balanced way.

#### **4.1.5 Role of digital media**

The informants highlight that digital media plays a very important role today in Norwegian youths' political participation because digital media is used as one of the primary ways for youths to express their opinions, find information, and be politically engaged – especially social media. One informant says:

*We see, for example, that many youths write posts or comments on topics they are engaged with and read information about political topics and issues online. It is precisely because young people are much more used to digital ways of communicating that it is efficient to use film, video sound, images, and so on, to communicate to youths what you want to communicate.*



The informant from the European Wergeland Centre explains that they have used example quotes from Instagram chats and TikTok videos in their own democracy education and that they think that *“generally speaking, digital media is so important for youths that we cannot rule it out if we want to engage them – because Norwegian youths get most of their information and news from digital media”*. Youth politicians also think that the role of digital media is very important, and some explain that they have found it a helpful way to reach out to more youths, for example, through TikTok. They explain that *“it is boring for many youths to read through political party programs”* and that they think digital media are likely more engaging and, therefore, should be used more to engage youths politically than today.

#### **4.1.6 Potential of games**

Regarding the potential of digital games for increasing political engagement, the informants generally seem very positive about using games as a media to engage more youths because they think it could engage people who would not participate otherwise. They also have some notes on how they think games can be used for persuasion most successfully: first of all, *“it has to be engaging,”* and second of all, it should ideally be combined with some kind of debriefing (ideally in a group). As the informant from the European Wergeland Centre says:

*What I think about games is that a lot happens inside your own head, and to bring it out, it is important that you have a debriefing in a larger group after playing the game – because what happens in the game is something you take in, but it is only after discussing what you experienced in the game that you actually learn.*

In other words, *“there needs to be a connection between the digital issues and what happens in society – you need to connect the lines between reality, so that you can see the relevance of what you learned in the games in your own reality”*. The informants also emphasized the vital importance of showing through the game that *“everyone has the opportunity and capability to participate and influence the politics of Norway”* – and giving youths political self-efficacy through gameplay experiences. Furthermore, it is important that both the game and political participation are low threshold and to make political engagement easier and more relevant for youths through the game – for example by *“explaining through the game how participation is not only about voting and joining political parties – but that it can be as simple as just discussing your opinions with your parents around the dinner table, or with friends or people online.”*

Informants also highlight other important aspects of successfully using games to encourage political engagement, such as expanding the youths’ understanding of democracy and political participation, because

*Youths below voting age tend to have often a very clear tendency to think that politics are not for them – that politics is something that they work with on Stortinget and something adults work with, where children have no influence – because they cannot vote in elections.*

Their advice is therefore to show youths different ways of participating and to *“make youths think that they can influence politics in other ways than just voting”*. They suggest trying to take the focus away from politicians and Stortinget, which might be distant for youths, and more into other channels of influence that seem more relevant and closer to the youths: because young Norwegians do not tend to learn much about this at school, so that the distance to political participation becomes smaller for the youths. They exemplify that *“it could, for example, be about better public transport services, better bus departures, longer opening hours, or topics related to leisure activates and facilitates.”*

Youth politicians also highlight similar aspects to consider when using games to persuade youths to participate in politics. One youth politician would like a potential game to make learning about the differences between the political parties and their opinions easier. They also think it is important to gain a greater understanding of what not participating and engaging in politics can lead to – and explains that *“for example, if you don’t exercise your right to vote, the parties you disagree with can come to power, and the things you don’t want to happen can happen”*. Another politician informant emphasizes the importance of dealing with freedom of speech and forming a good understanding of it and what good discussions are. They think that *“teaching people to be tolerant without necessarily having to agree with each other”* in discussions is important. The youth politicians also emphasize the need not to make politics more complicated than it is and to keep it as low-threshold as possible and at a *“grassroot level”*. According to one informant, *“It is easier for people to get involved in, for example, local money prioritization for culture or local financial prioritization for the local school than to have an opinion on what kind of tax system we should have in Norway”*. In other words, they think it is important to keep political participation as simple as possible and find issues that people can relate to and experience in their daily lives. One youth politician explains that they have talked with a lot of youths who do not seem to care about many things in politics because they do not seem to think it affects them, and that *“the solution is then to either find things that they feel affect them or make them aware that things do affect them”*.

## **4.2 The Game – Deltakelsespillet**

The final game design includes 77 screens with content that will be summarized and explained in this part of the report. An important note is that participants were only asked to play the game once, which means that they likely only saw a total of 49 or 51 of the 77 screens — depending on their in-game choices. This is because large parts of the game worked like a tree branch, where certain choices locked the player into one “branch” of the game. The overall idea behind the game content is for the player to learn about and practice political participation – especially political discussions, through reading text and making in-game choices while following a game character’s story.



Figure 3 – Introduction and explanation.

In the first 2 pages of the game, which can be seen in *Figure 3*, an introduction and an explanation of the game goals and rules are shown, with a background picture of Stortinget in Norway (which can be seen as a symbol of democratic participation). In the following third page, which can be seen in *Figure 4*, the player has a fictional conversation with a character described as a friend where the friend character asks if the player wants to learn more about political participation since a local election is approaching. Depending on whether the player selects to answer that they are interested in participation, they might get an additional page that “tries to convince them” again (where the player must either reluctantly or willingly answer that they are interested or somewhat interested to continue the game).



Figure 4 – Introduction-conversation with friend character.

In the next five pages of the game, the player gets some information from the friend character about how to participate in politics through four major political participation channels that each is explained in detail through their own page: 1) sharing their opinions, 2) organizations, 3) voting/elections and 4) activism. Two of these frames are shown in *Figure 5* as an example.



Figure 5 – Explanation of political participation channels.

Following this informative conversation with the friend character, in the next 3 pages, the friend character suggest that the player talk to a few different people nearby to understand the political discussion topics in Norway better and see what people around them think about different issues. He gives the player the contact information for six people and a route on a map to follow from the city of Gjøvik to the city of Hamar. Additionally, the friend character gives some general tips for political discussions, such as that “good arguments and viewing things from other people’s perspectives are the keys to good discussions” and to try to avoid basing answers on personal viewpoints and feelings. Two of these pages are shown in *Figure 6* as an example.

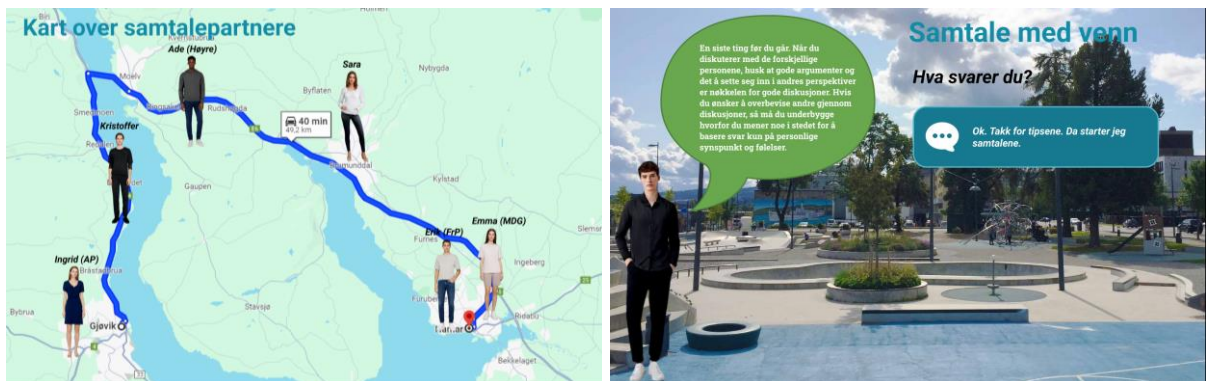


Figure 6 – Start of political discussions in game.

For the next 28 to 29 pages (depending on choices), the participants hold political conversations with six game characters with various opinions that live in different areas. These conversations work so that each of the six game characters first introduces themselves, a topic they find personally important, and then ask a question to the player that the player can answer with one of three dialogue options. The conversation with the first game character, Ingrid, is slightly different and longer than the next five as the player is asked first to pick one of three options, which they think are important to prioritize for good school policy in Norway, and then to argue why this is important. In comparison, the other game characters pick a position themselves, and then the player responds with one of three counter-positions and gets the response from the game characters. The six discussion topics are based on insight about

common discussion topics for Norwegian youths from interviews with experts on Norwegian youths' political participation. Two examples of the pages that introduce these game characters are seen in *Figure 7*.



Figure 7 – Examples of introduction to game characters.

Depending on the dialogue option chosen, the player will either get a positive, neutral, or negative response from the game character, which is based on whether the game character found the argument convincing and rational rather than whether the game character agrees or disagrees with the response. A positive response which is based on a dialogue option with good arguments gives the player 2 “participation points” (DP for Norwegian ‘DeltakelsesPoeng’), while a neutral response based on an adequate argument gives the player 1 participation point and a negative response based on a bad argument gives no participant points. Two examples of the pages that show the response of the game characters are seen in *Figure 8*.



Figure 8 – Examples of responses from game characters.

In addition to participating in political discussions with the six game characters, there are also 11 pages in the game where the player can choose to either join an organization called “Redd Barna” (*Save the Children*), to join it temporarily, or to not join it at all, and can either choose to join a demonstration by the organization “Natur og Ungdom” about the environment, to join it for a small amount of time or to not join it at all. These two minor decisions also give additional participation points, based on player decisions, and attending the demonstration will also show an additional page about the demonstration which other players won't see. Two example pages about joining the organization or demonstration can be seen in *Figure 9*.



Figure 9 – Examples of game content about joining an organization or demonstration.

After discussing politics with the six game characters, the player is met with a “sudden event” in the last eight pages of the game. On the first page, it is explained by the friend character that a local election in the municipality that a corrupt local politician called Jan Birkeland is about to win by buying votes. The player is encouraged to use their influence gathered through participation to influence the election outcome. While the player can choose either of three options without any physical constraint, it is meant that players ideally need 15+ DP (15 or more participation points) to choose the ‘best option,’ while they need 10 participation points to choose a fairly good option, and if they have less than 10 collected participation points they have to pick the worst option. On the second page, it is explained that “one year after the local election, you can see the consequences of your political participation through news reports in the local newspaper,” and you have the option to click to “see 1 year forward in time”. In Figure 10 we can see these two first pages about this sudden event.



Figure 10 – Sudden game event introduction.

After clicking to “see 1 year forward in time,” the player is met with three news reports in the local newspaper (regardless of previous decisions), as shown in Figure 11. One news report is positive (“the mayor listened to residents”), one is slightly bad (“the mayor is too passive”), and one is negative (“the mayor has committed tax fraud”).



Figure 11 – Three news reports after election in game.

When the player clicks on any of these three news reports, they see one “good ending,” one “neutral ending,” and one “bad ending” (all endings are seen regardless of previous decisions), which can be seen in *Figure 12*. In the good ending that is achieved if the player collects at least 15 participation points and chooses to write a post about the election on social media and encourage people they know to vote for other politicians, another candidate for mayor – June Aurstad wins, and has proven to be popular among local residents, recently listening to local residents that wanted better local transport with a new decision. In the neutral ending, which is achieved if the player collects at least 10 participation points and chooses to encourage everyone they know to vote for other local politicians, the new passive mayor Guri Berger has proven to do very little for the municipality, and 44 activists met for a demonstration outside the town hall. Lastly, in the bad ending achieved if the player collects less than 10 participant points and chooses not to influence the election, Jan Birkeland wins. New revelations show that the mayor has committed tax fraud and is under further investigation by the local police.



Figure 12 – Three endings after election in game.

The game and game design have been explained so that it should be enough for the reader to read the report to understand the game content. A link to the complete and playable game in Figma (how the participants viewed the game) will nevertheless be provided. The game is designed to be viewed and played on a desktop (as all participants did) but is also viewable on mobile. The game is available in Norwegian [here](#).

### 4.3 Participants’ political engagement before gameplay

The following section presents the participants’ answers to 4 open-ended questions about political engagement before gameplay – in terms of political interest, challenges, engaging political topics, and successful strategies to increase the participants’ political participation.

### 4.3.1 Factors that contribute to the participants' interest in political participation

## What factors contribute to your interest or lack of interest in political participation in Norway?

#### Issues that are engaging

**P2:** "I am concerned with there being as much equality as possible in society, both financially and otherwise. That is why I will vote for parties that are concerned with equality."

**P3:** "I read newspapers online every day. I think it is important to follow what is happening in politics, and to follow discussions that take place between people and politicians. You can get a little frustrated and discouraged by listen to all the opinions the politicians have that you don't completely agree with, but that's how it should be. You can't agree with everything. I think it's mostly exciting to follow politics and I feel that I have to vote in every parliamentary election and municipal and county elections. It's most exciting with politics around elections, but it's still nice to be a bit up-to-date otherwise too."

**P6:** "What contributes to my interest in participation is primarily that there are many political issues that are important in Norway and that I find interesting."

**P10:** "topics or politicians that I can relate to"

**P15:** "That the topics in politics are interesting and relevant to me."

**P16:** "Lack of interest."

**P17:** "Among other things, interesting political issues I relate to, reading news about things that you think should be changed and an understanding of politics contributes to my interest in political participation."

**P19:** "My interest is awakened around topics about the welfare society and how we can continue to be as good as we are in this country related to, for example, hospital costs etc."

**P20:** "cohesion/elderly care/justice/diversity/tax"

#### Lack of impact

**P1:** "I also think that I do not have much real influence on politics in Norway, as there are many people in Norway and I am only one of many. There is anyway such a good political system and democracy in Norway, that I feel it can't go very wrong anyway. The biggest parties are, for example, much better and more democratic than big parties in many other countries."

**P4:** "Feeling that it doesn't matter."

**P6:** "At the same time, I think that it doesn't have much effect whether I participate in politics or not, which makes my interest in political participation is lower."

**P13:** "Not many cases where I notice that politics affects me directly in my everyday life."

**P21:** "Thoughts about influence"

#### Lack of understanding/overview

**P1:** I lack both interest and understanding of the current political topics that are relevant in Norway, and I do not follow the news that much due to a lack of interest.

**P12:** "Difficult to get used to because there are many different political parties."

**P21:** "Overview of the topics"

#### Sense of responsibility

**P9:** "My interest is strengthened by the fact that I feel responsible for helping to influence how society will develop. In Norway, we have good opportunities to express our opinion and influence society."

**P11:** "In principle, I think it is important to get involved, to influence where you can and to ensure that the direction of the policy makes sense."

#### Thoughts about politicians

**P4:** "We have also seen that, for example, politicians end up mostly as "personalities" rather than actors for political change. For example, "We \*like\* Erna Solberg" and "We \*don't\* like Moxnes" - or, perhaps to a greater extent the parties in general; e.g. "We \*don't\* like MDG" without that much understanding of their politics."

**P9:** "My interest is weakened by the fact that the political parties are so similar that my opinions do not have much say in practice. Trust in politicians is also weakened by all the examples of politicians not being honest and fair (the Moxnes case, cheating in master's theses, favoring one's own acquaintances for political positions, etc.)"

**P14:** "1. Trust in politicians 2. Televised debates"

**P19:** "If there is only a personal focus and discussions about what the individual politician does in his private life, it interests me very little."

**P20:** "Trust" (in politicians)

#### Other

**P7:** "I've always been quite politically interested and enjoyed discussing politics with others. I grew up in quite a political family and became aware of the importance of political participation quite early, and that has been reflected in my interest and how I have chosen to participate in politics."

**P18:** "Prioritization of time. Uncertainty in exposing one's own opinions."

**P22:** "I am interested in politics because it affects me and others in many ways, and because I find it interesting to follow and try to influence what happens in society."

Figure 13 – Factors contributing to the participants' interest in political participation

Results of thematic analysis regarding the factors contributing to the participants' interest in political participation showed that five primary aspects were mentioned by several participants, namely: 1) issues that are engaging, 2) lack of impact (of own participation), 3) lack of understanding or overview of politics, 4) sense of responsibility and 5) thoughts about politicians (see *Figure 13*). The most mentioned factor was 'issues that are engaging,' which was mentioned by nine participants. For example, one participant says that they are "concerned with there being as much equality as possible," while another says that "there are many political issues that are important," and a third highlights that it is important the "the topics in politics are interest and relevant" to them. Five participants also mentioned that their thoughts about politicians impact their interest in participation both positively and negatively, for example in relation to "trust in politicians" (as mentioned by two participants explicitly), but



also in relation to opinions on the politicians and their private life, personalities, and scandals (as mentioned by three participants).

Furthermore, five participants highlighted that they feel like their participation lacks impact or effect – as one participant, for instance, think that they “*do not have much real influence on politics in Norway,*” while another said that they feel that “*it does not matter*” and a third that they “*think that it doesn’t have much effect whether I participate in politics*”. Three participants also point out that they lack an understanding or overview of politics, which makes it harder to participate, for example by saying that they “*lack both interest and understanding of the current political topics that are relevant in Norway*” or by saying that they lack “*overview of the topics*”. Two participants also pointed out that their sense of responsibility impact their participation, as one participant said their “*interest is strengthened by the fact that I feel responsible for helping to influence how society will develop,*” while another said, “*in principle; I think it is important to get involved, to influence where you can and to ensure that the direction of the politics makes sense*”. Lastly, other participants highlighted other aspects that influence their interest in politics, such as prioritization of time, uncertainty in exposing their opinions, and their family being political.

#### **4.3.2 Challenges that participants face regarding political participation**

Thematic analysis of significant challenges that participants face regarding political participation in Norway shows that primarily five challenges affected the participants, namely: 1) lack of feelings of influence or qualification, 2) time, 3) lack of interest, 4) lack of understanding or overview of politics and 5) poor discussion or not to be heard. Eight participants answer that they experience challenges related to feeling a lack of influence or qualification in terms of political participation, as explained through statements like “*I think I do not have much influence as an individual,*” “*I feel like there is very little you can do to influence society as an individual*” and “*I don’t feel sufficiently qualified to participate politically*”. In other words, these issues seem to relate to lack of political self-efficacy among several participants. The second most significant challenge seems to be a lack of understanding or overview of politics, as six participants explain through statements such as “*I also don’t have much knowledge about politics,*” “*there is an overwhelming amount of information*” and “*understanding and overview of politics is challenging*”. Four participants further pointed out that their lack of interest was a challenge, while three participants pointed out that time was a challenge. Other participants highlighted issues such as lack of trust in politicians, income, and internet trolling. Lastly, three participants highlight that poor discussions and not being heard in discussions can be a challenge, as one participant points out that they *feel that the discussion become very polarized and characterized by extreme viewpoints, poor dialogue, and a lot of noise,*” while another says “*it’s not easy to speak your mind out loud. You probably have to be a member of a party or an organization to be heard. It’s not easy to be heard*” (see Appendix E for further details and all statements).

#### **4.3.3 Political issues that interest the participants**

From thematic analysis of the political issues that participants mention interesting them, it can be seen that five main topics interest the participants and somewhat overlap, namely: 1) equality (and discrimination), 2) international conflicts or solidarity, 3) education, 4) economy and 5) environment and climate change. The most engaging political issues among the participants seem to be quality and discrimination, as ten participants point out that this issue interests them through answers such as *“I am particularly concerned about equality in society,” “My personal struggles are mostly related to human rights and equality,” “For me, it is extra important that everyone is seen/heard regardless of who they are. No one should be excluded”*. Another popular political issue among participants seems to be environment and climate change, as eight participants point out that this issue interests them through answers like *“Climate and environment,” “Environment and nature conservation,” “Green energy”* and *“Sustainable development”*. Six participants also answered that they are politically interested in economy through answers like *“Tax policy,” “Economy”* and *“Industry and business policy,”* while five participants seem to be interested in education through answers like *“student politics, as I’m a student,” “I care about the plagiarism cases right now. Since I’m a student,” “School policy”* and *“Education policy that does not create differences and exclusion”*. Furthermore, four participants seemed to care about international conflicts and showing solidarity, through answers like *“I also follow the wars going on in the world today,” “Recently it is especially the Ukraine-Russia and Israel-Palestina conflicts that have engaged me”* and *“Soldarity with the disadvantages in other countries (asylum and immigration policy”*. Other participants mentioned issues such as feminism, culture, technology, investment in public institutions and freedom for religious communities as political issues that interest them. For further details and all participant statements, see *Appendix F*.

#### **4.3.4 Participants’ thoughts on initiatives to make politics more appealing to them**

Lastly, results from thematic analysis of participant’s thoughts on initiatives to make politics more accessible and appealing to them showed that primarily five main factors was important for several participants, namely: 1) more information and overview, 2) more fun or engaging initiatives, 3) better discussions, 4) lower threshold (for participation) and 5) relating the content to them personally. Seven participants suggested to make politics more appealing through including more information and overview, through answers such as *“It should perhaps be easier to get information about the major political issues in the country,” “There should be better and more accessible information about how an individual can participate through political activities nearby”* and *“Good and easily accessible information about, for example, how to participate in politics and discussion and why you should do it”*. Five participants also mention that initiatives ideally should be more fun or engaging, saying, for example, *“Try to make participation more fun and engaging,” “Making politics more interesting,” “Workshops,” “Live debate”* and *“games (if done right)”*. Furthermore, three participants highlight that initiatives should try to make participation lower threshold, through statements such as *“It*

should perhaps be a little easier and lower threshold to enter politics,” “It must be available on the websites I go to the most” and “I think you have to make political discussions and activities more accessible and lower threshold”. Three participants also suggested that initiatives should personally relate to them by saying, for example, “Relate them to me personally,” “Make it more attractive to young people,” and “Perhaps if it appeals more to a younger target group”. Two participants also highlight that they want initiatives to create better political discussions by saying that they want “better and more attractive arenas to be able to contribute to the discussion. Avoid noise, extreme views, and personal attacks in social media” and that “it would have been more comfortable for me to participate in political discussions if there was less prejudice against people who have different opinions and more respect in discussions”. Lastly, other participants point out that good TV debates with relevant topics and a more extreme political society would likely engage them more. For further details and all participant statements, see *Appendix G*.

#### 4.4 Effects of gameplay on participants’ attitudes

This section of the thesis presents the main findings from the analysis of the quantitative experimental data collected about the effects of gameplay on participants, in terms of attitudes towards political participation.

##### 4.4.1 Participants’ attitudes toward political participation before and after gameplay

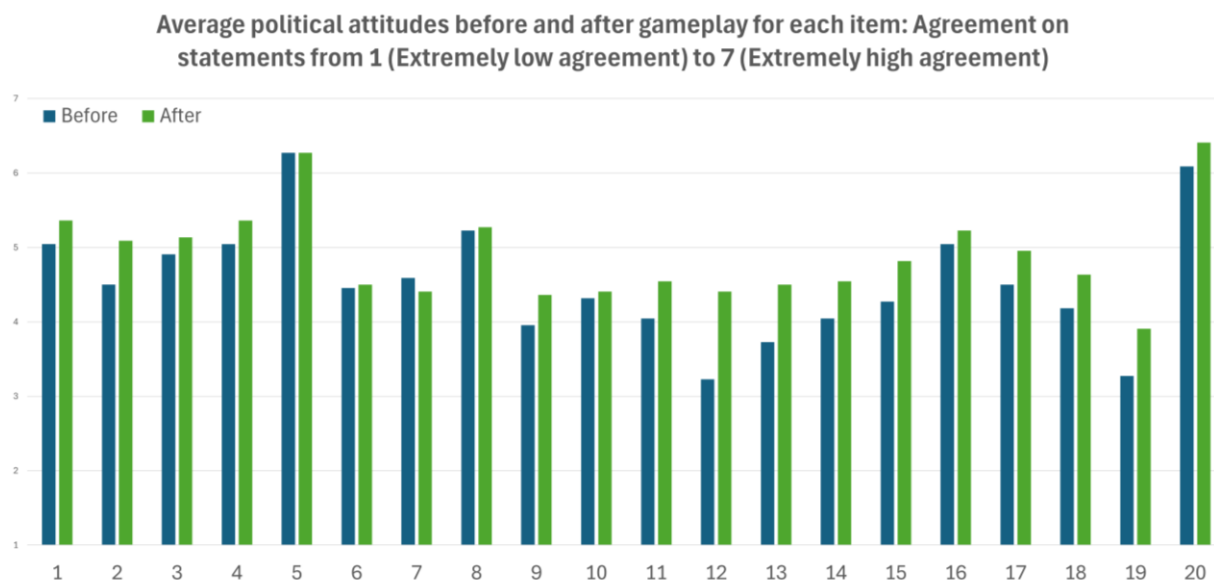


Figure 14 – Comparison between average attitudes among the participants before and after gameplay for 20 attitude items, measured on a scale from 1 to 7.

Figure 14 shows a comparison between the average agreement from 1 (“To an extremely small degree”) to 7 (“To an extremely large degree”) across all 20 statements about participants’ own political participation before and after playing the game *Deltakelsesspillet*. As all the

statements are positive formulated statements regarding political participation (such as interest in participation, political self-efficacy, and intentions to participate), average agreement on statements can be seen as overall attitudes towards own political participation for the participants. Analysis of overall attitude change for each participant reveals that 18 out of 22 of the participants (81.8%) had an overall increase in average attitudes toward political participation after gameplay, while three participants (13.6%) had an overall decrease in average attitudes, and one participant (4.5%) had the same average attitudes after gameplay. The overall attitude across all participants and all statements before gameplay was 4.54 (SD=0.74), while the overall average attitude across all participants and all statements after gameplay was 4.91 (SD=0.86) – an average increase of about 0.39. Results from conducting a paired sample t-test show that this difference in participants' average attitudes towards political participation before and after gameplay was statistically significant ( $t(21)=-3.723$ ,  $p<0.001$ ).

#### **4.4.2 Comparing types of attitudes: average attitudes before and after gameplay**

By comparing the average attitudes across the 6 previously defined sub-categories related to 1) interest towards politics, 2) perceived importance of politics, 3) perceived responsibility, 4) political efficacy, 5) trust in political systems and politicians, and 6) political behavioral intentions, it can be seen that the average changes vary greatly from category to category. As seen in *Figure 15*, it can, for example, be seen that attitudes related to political self-efficacy and behavioral intentions overall seem to change most after gameplay, followed by attitudes towards political interest and political trust, which also seem to change a notable amount, while perceived importance and responsibility do not seem to change much after gameplay. Results from conducting paired sample t-tests on each category showed that some categories showed statistically significant changes overall while others did not. Participants' political interest scores were shown to statistically significantly change from before to after the gameplay experience ( $t(21)=-2.388$ ,  $p=0.026$ ). The score was, on average, 4.82 (SD=0.96) before the experiment, and it increased to 5.20 (SD=1.00) after the gameplay sessions.

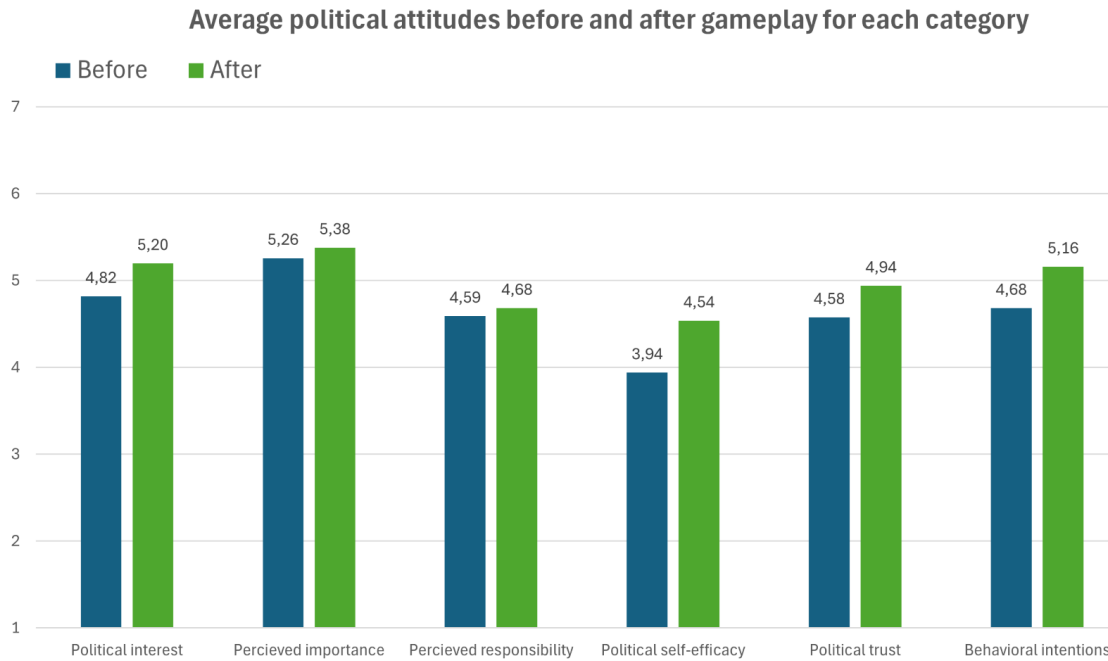


Figure 15 – Average political attitudes before and after gameplay for each category of attitudes

In comparison, participants’ perceived importance scores did not differ significantly from before to after the experiment ( $p=0.236$ ), but the score was slightly higher after the experiment ( $M=5.38$ ,  $SD=0.68$ ) when compared to the initial score before gameplay ( $M=5.26$ ,  $SD=0.55$ ). Similarly, the participants’ perceived responsibility scores also did not differ significantly from before to after the experiment ( $p=0.610$ ) but did become slightly higher after gameplay ( $M=4.68$ ,  $SD=0.89$ ) compared to before the experiment ( $M=4.59$ ,  $SD=1.02$ ). Participants’ political self-efficacy scores had the biggest overall difference from before to after the experiment, and this change was statistically significant from before to after the experiment ( $t(21)=-4.118$ ,  $p<0.001$ ). The score was, on average, 3.94 ( $SD=0.99$ ) before gameplay, and it increased to 4.54 ( $SD=1.05$ ) after the gameplay sessions. Regarding participants’ political trust scores, significant differences were found from before to after the gameplay sessions ( $t(21)=-2.258$ ,  $p=0.035$ ), as the initial scores changed from an average of 4.58 ( $SD=1.20$ ) to an average of 4.94 ( $SD=1.41$ ) after the experiment. Lastly, the participants’ behavioral intentions scores also showed statistically significant changes from before to after gameplay ( $t(21)=-4.713$ ,  $p<0.001$ ). The score was, on average, 4.68 ( $SD=0.81$ ) before the experiment, and it increased to 5.16 ( $SD=0.81$ ) after the gameplay sessions.

#### **4.4.3 Effects on attitudes across different statements about political participation**

Table 8 shows the average attitudes (or mean attitudes) before and after gameplay for each of the 20 statements from 1 (“To an extremely small degree”) to 7 (“To an extremely large degree”), as well as the average change and the type of attitude (or category) of each attitude statement. The table shows that the participants, after gameplay, on average, agree more on 18 out of 20 statements, less on one statement (about the responsibility to participate in politics),

and exactly as much for one statement (about the importance of voting in elections). It is worth noting that participants average attitudes seem to be notably higher both before and after gameplay for some statements – as participants’ average attitude is about 6 to 6.5 (“to a very large degree”) for statement 20 about intentions to vote in future elections both before and after gameplay, while the average attitude for statement 9, for instance, about responsibility to express political opinions only have an average attitude of about 4 to 4.5 (“to some degree”) both before and after gameplay. This indicates that participants, unsurprisingly, have more positive attitudes towards some statements both before and after the experiment and that some attitudes might be easier or harder to change to high levels due to this.

Table 8 – Average change for various attitude items. Average changes above mean change across all statements (+0.37) are marked in bold.

Items	Category	Political participation statements (attitudes)	Mean Before	Mean After	Average Change
1	Political interest	<i>“I am interested in political and societal issues.”</i>	5,05	5,36	+0,32
2	Political interest	<i>“I find political discussions and debates interesting and relevant to my everyday life.”</i>	4,50	5,09	<b>+0,59</b>
3	Political interest	<i>“I am interested in seeking out information about political and societal issues.”</i>	4,91	5,14	+0,23
4	Perceived importance	<i>“I believe it is important to participate in politics.”</i>	5,05	5,36	+0,32
5	Perceived importance	<i>“I believe it is important to vote in elections.”</i>	6,27	6,27	0
6	Perceived importance	<i>“I believe it is important to participate in political discussions.”</i>	4,45	4,50	+0,05
7	Perceived responsibility	<i>“I believe I have a personal responsibility to participate in politics.”</i>	4,59	4,41	-0,18
8	Perceived responsibility	<i>“I believe I have a personal responsibility to keep myself informed about political and societal issues.”</i>	5,23	5,27	+0,05
9	Perceived responsibility	<i>“I believe I have a personal responsibility to express my opinion on political and societal issues to others.”</i>	3,95	4,36	<b>+0,41</b>
10	Political self-efficacy	<i>“I consider myself well qualified to participate in politics.”</i>	4,32	4,41	+0,09
11	Political self-efficacy	<i>“I feel confident in my ability to understand and contribute to political discussions in Norway.”</i>	4,05	4,50	<b>+0,50</b>
12	Political self-efficacy	<i>“There are plenty of ways for me to have a say in what the national government does.”</i>	3,23	4,41	<b>+1,18</b>
13	Political self-efficacy	<i>“I believe that my political participation can make a positive impact on political and societal issues in Norway.”</i>	3,73	4,50	<b>+0,77</b>

14	Political self-efficacy	<i>"I believe my opinion matters in political and societal discussions."</i>	4,05	4,55	<b>+0,50</b>
15	Political self-efficacy	<i>"I believe I should express my opinion on political and societal issues in public, even if it differs from others."</i>	4,27	4,82	<b>+0,55</b>
16	Political trust	<i>"In general, I have trust in the political institutions and the Norwegian democracy."</i>	5,05	5,23	+0,18
17	Political trust	<i>"In general, I trust the national government in handling problems a great deal."</i>	4,50	4,95	<b>+0,45</b>
18	Political trust	<i>"In general, I trust politicians to handle problems a great deal."</i>	4,18	4,64	<b>+0,45</b>
19	Behavioral intentions	<i>"In am planning on participating in future political discussions whenever possible."</i>	3,27	3,91	<b>+0,64</b>
20	Behavioral intentions	<i>"I am planning on voting in future elections whenever possible."</i>	6,09	6,41	+0,32

In the table, it can be seen that the changes in attitudes from before to after gameplay vary as much as about +1.18 on statement 12 to only about +0.05 on statement 6. The most significant changes were found for the statement 12: *"There are plenty of ways for me to have a say in what the national government does"* (+1.18) and statement 13: *"I believe that my political participation can make a positive impact on political and societal issues in Norway"* (+0.77) – which both falls under the category of ‘political self-efficacy’. Similarly, quite significant changes were also found for multiple statements in various categories about political discussions – such as statement 2: *"I find political discussions and debates interesting and relevant to my everyday life"* (+0.59), statement 11: *"I feel confident in my ability to understand and contribute to political discussions in Norway"* (+0.50) and statement 19: *"I am planning on participating in future political discussions whenever possible"* (+0.64). Other statements that relate to political discussions also seem to change by a large amount, such as statement 9: *"I believe I have a personal responsibility to express my opinion on political and societal issues to other"* (+0.41), statement 14: *"I believe my opinion matters in political and societal discussions"* (+0.50) and statement 15: *"I believe I should express my opinion on political and societal issues in public, even if it differs from others"* (+0.55). Other statements that the participants seem to agree notably more with after gameplay include statements 17 and 18 related to trust towards national government and politicians (+0.45 for both), statement 1 about interest in politics (+0.32), statement 4 about perceived importance of participating in politics (+0.32), statement 20 about intention to vote in future elections (+0.32) and statement 3 about interest in seeking out information about politics (+0.23). Lastly, the changes for the remaining attitude items about perceived importance of voting (5), perceived importance of participating in political discussions (6), perceived responsibility towards being informed (8), beliefs about being well qualified to participate (10) and trust towards political institutions (16) overall were so minimal that it is likely that gameplay did not affect these attitudes at all.

#### 4.4.4 Demographic comparison: age, gender, education, gameplay amount and political behavior

In Table 9, a comparison of average attitudes before and after gameplay for participants in groups of 10 to 12 people with different demographics can be seen. A gender comparison between 11 male and female reveals that male participants on average had an average attitude of 4.43, while female participants had an average attitude of 4.64 before gameplay. This changes to 4.73 for males (+0.30) and 5.08 (+0.44) for females. In other words, female participants had slightly higher average attitudes both before and after gameplay and a slightly higher increase in average attitudes after gameplay than the males. When comparing the 11 participants that was 18 to 24 years (M=22.3, SD=2.10) with the 11 participants that was between 25 and 30 years old (M=28.1, SD=2.26), it can be seen that the younger participants started with an average attitude of 4.41 before the experiment and ended up with an average of 4.97 after gameplay, while the slightly older participants started with an average of 4.66 and ended up with an average of 4.84 after the experiment. This shows that while participants from 25 to 30 years old initially started with a higher average attitude towards political participation, the younger participants from 18 to 24 years old had a higher average attitude after the experiment and showed a significantly higher change in attitudes (+0.56) than the slightly older participants (+0.18). Comparing participants with different levels of education shows that those with lower education had lower attitudes to political participation both before and after gameplay, but a slightly higher increase in average attitudes (+0.45), than those with higher education (+0.32). Similar tendencies can be found for the participants with overall lower reported political behavior, as these participants have significantly lower average attitudes both before and after gameplay, but a slightly higher increase in attitudes (+0.44) compared to those with lower overall reported political behavior (0.33). Lastly, when comparing participants with a different amount of reported gameplay amount, the tendencies are slightly different – as those with lower reported gameplay overall have higher attitudes before and after gameplay, but also experience a slightly higher increase in attitudes (+0.40) than the participants who reported more gameplay (+0.35).

Table 9 – Average attitudes before and after gameplay for participant groups with different demographics. Changes above average across all groups (+0.37) are marked in bold.

<i>Demographic comparisons</i>	<i>Participant groups</i>	<i>Number of participants</i>	<i>Mean Before</i>	<i>Mean After</i>	<i>Average Change</i>
<b>Overall, across 22 participants</b>	<i>All participants</i>	22 (100%)	4,54	4,91	<b>+0,37</b>
<b>Gender</b>	<i>Male</i>	11 (50%)	4,43	4,73	<b>+0,30</b>
<b>Gender</b>	<i>Female</i>	11 (50%)	4,64	5,08	<b>+0,44</b>
<b>Age</b>	<i>18-24 years old</i>	11 (50%)	4,41	4,97	<b>+0,56</b>
<b>Age</b>	<i>25-30 years old</i>	11 (50%)	4,66	4,84	<b>+0,18</b>



<b>Education</b>	<i>Upper Secondary (VGS) or Bachelor</i>	12 (55%)	4,39	4,84	<b>+0,45</b>
<b>Education</b>	<i>Master's degree</i>	10 (45%)	4,62	4,94	+0,32
<b>Gameplay amount</b>	<i>Less than 1 hour ("non-gamer")</i>	11 (50%)	4,70	5,10	<b>+0,40</b>
<b>Gameplay amount</b>	<i>More than 1 hour ("gamer")</i>	11 (50%)	4,37	4,72	+0,35
<b>Political behavior amount</b>	<i>Overall low ("non-engaged")</i>	10 (45%)	4,15	4,59	<b>+0,44</b>
<b>Political behavior amount</b>	<i>Overall high ("engaged")</i>	12 (55%)	4,82	5,15	+0,33

## 4.5 Participants' reflections about the game and gameplay experience

In the following section of the thesis the participants' answers to 5 open-ended questions about their own reflections on the gameplay experience after 10 to 15 minutes of gameplay will be presented, as categorized through affinity diagramming.

### 4.5.1 Participants' thoughts after gameplay

Results from the thematic analysis of which thoughts the participants had after gameplay shows that the game mostly made the participants reflect over 1) political discussions, 2) political influence or participation and 3) about the game ending (see *Figure 16*). Ten participants can be said to reflect on political influence or participation after gameplay, such as participant 9 that said that they "*came up with several ways to engage myself politically that potentially suit me well,*" participant 14 that said that the game made them "*reflect on the fact that I have a responsibility to communicate my point of view and contribute in my own way to see a social development in line with my wishes*" and participant 22 that said that the game made them "*think about different ways to participate in politics and how political discussions can take place*". Furthermore, six participants reflected on political discussions, such as that gameplay made them think "*about the fact that there are many different people with very different opinions in politics, and that you have to meet these people in a respectful way with good arguments*" and that "*it demonstrated well how argumentation and angle \*can\* lead to good discussions*". While some participants seemed to find the game quite realistic, others thought the game portrayed political influence and participation in an unrealistic, or idealistic, way. Other participants reflected around the game ending, that they felt guilty for not participating and about politics or political issues in general.

## What did you think about the game, and what did it make you think? Why?

### Political discussions

**P1:** "The game was interesting considering that it was interesting to explore political discussions through in-game conversations with the fictional characters. The game made me think about the fact that there are many different people with very different opinions in politics, and that you have to meet these people in a respectful way with good arguments rather than being frivolous and personal."

**P4:** "Fun game, thought it demonstrated well how argumentation and angle \*can\* lead to good discussions. But it is probably easier to make wise choices when one, 1) has limited options and 2) does not have to formulate these himself with the person in front of him. One thing that surprised me a bit was that everyone responded positively to "rational" arguments - I think everyone has had the experience of debating with someone who, despite the quality of the arguments, is not open to changing their mind. There can be many reasons why people \*don't\* want to change their minds, e.g. the meaning forms a central part of the person's self-concept, or simply just a bad mood now and then - if this were to be a "proper" game, it would have been interesting to take address some of these problem areas."

**P6:** "I think that the game portrayed political discussions in a rather idealistic way, where almost everyone in the game was convinced with professional arguments, while emotional arguments had less effect. In reality, I think that emotional arguments would also have some effect on many. Nevertheless, the game made me reflect a little extra on political discussions and how in an ideal world it can be both fairly interesting and a much lower threshold than what is often imagined"

**P7:** "I think the game deals with political discussions in an interesting way, where discussions in the game are presented in a slightly simplified way as can perhaps be said to show how political discussions should optimally take place where discussion partners are tolerant of each other and discuss primarily based on professional and rational arguments. The game shows how it is realistically possible to discuss when you disagree, without it being so heavy negative consequences for the individuals, which I think is a great way to present discussions. I also think it's nice that the game gives a small introduction to different ways of participating in politics (such as by voting, discussion and activism), as this can be quite unclear to people sometimes, especially for people who do not participate much in politics themselves."

**P17:** "The game was interesting and made me think about political discussions and how to potentially hold discussions with people about politics."

**P20:** "I think the game is interesting with some good themes. Good/simple format. Best suited for younger people. Conversation with different people made me to think again that it is good that we are passionate about different topics within politics. This is what it's all about. And it is important that each person has the opportunity to promote their politics regardless of the method."

### Game ending

**P2:** "I think the game is interesting. The bad ending in the game gave me associations with the situation in countries such as the United States (Trump) and Russia (Putin). The game made me reflect on the fact that there are many people who have to live in countries that are less democratic than Norway, and that something similar can also happen in countries like Norway if people do not participate in politics."

**P4:** "Regarding the ending it is, well, optimistic, one might say? Not sure if you could actually have such a big impact on an election as an individual"

### Political influence/participation

**P3:** "The issues that were mentioned in the game are talked about a lot in reality. It was a nice game. It was nice to see information about where you can contribute to politics"

**P9:** "I came up with several ways to engage politically that suit me well, for example commenting and sharing political posts on social media. Although I am not that active on social media, for example LinkedIn is a channel I use and which can also be used to express political opinions. I also got a nice overview of what are important political topics about which you should form an opinion. I was also reminded that I am in several organizations such as Amnesty and Save the Children. These are also examples of community involvement that I didn't think of at first."

**P11:** "The game was very linear and stepwise. It contained a lot of information about politics and influencing."

**P12:** "The game was informative, but a bit repetitive. Got to know a little about different ways to get involved in politics."

**P13:** "It shows that small actions can have a butterfly effect further on. At the same time, "conversations" are made with answer options that are a bit leading, and can be to a certain extent degree guide participants to choose the "correct" answer instead of what they think. In addition, I did not fully understand the connection between casual conversations and the further influence one got. Then again, it's just a game so it doesn't need to be taken so seriously."

**P14:** "Made me reflect on the fact that I have a responsibility to communicate my point of view and contribute in my own way in order to see a social development in line with my wishes."

**P16:** "Good game, but a bit boring. It made me think about my own political participation."

**P18:** "Interesting game about participating politically. I almost felt guilty for not participating more actively than just voting. At the same time, I became more aware of why."

**P19:** "The game makes you reflect on political matters and perhaps you realize that you are more involved than you first thought"

**P22:** "The game was thought-provoking, and made me think about different ways to participate in politics and how political discussions can take place."

### Other

**P5:** "I think it was a good game and I think that it focuses on important things about Norwegian society"

**P8:** "Important, but boringly presented. But this is more of selected media (Figma) on the basis of unexciting interactions."

**P10:** "Thought it was good and it made me think a bit more about political issues"

**P15:** "Good and informative game, made me think about politics."

**P21:** "Contained a lot of good information about politics"

Figure 16 – Participants' thoughts about the game and reflections after gameplay.

### 4.5.2 Participants' thoughts about whether the game was entertaining

Thematic analysis of the thoughts the participants had on whether the game was entertaining revealed that six participants can be said to have answered 'yes,' eight to have answered 'no' and eight to have answered 'somewhat' (see *Appendix H*). Participants that thought it was entertaining gave reasons such as "*the characters in the game were relatively realistic,*" "*it's fun to get points,*" "*the premise was interesting*" and "*it was educational*". On the other hand, participants who did not think the game was entertaining said that it "*had a fairly low degree of player experience,*" that "*it was repetitive,*" that "*there was quite a lot of text*" and that "*the issues felt imprecise and that the options did not represent my desired response*". Participants who seemed to find the game only somewhat entertaining explained that the game was

*“intellectually very interesting, but there was too much text to read through,”* and that *“what was partly entertaining about the game was making different choices and seeing the consequences of those in the form of reactions from the discussion partners”* and that the game *“at times”* was entertaining because *“conversation with the different people is entertaining,”* but that it *“gets a bit boring in the long run”*.

#### **4.5.3 Participants' thoughts about whether the game was educational**

From thematically analyzing the participants thoughts on whether the game was educational, it was revealed that ten participants can be said to have answered ‘yes,’ two to have answered ‘no’ and ten to have answered ‘somewhat’ (or ‘no, but it stimulates reflection’) to this question (see *Appendix I*). The participants that thought it was educational gave reasons such as *“because it seems real,”* that it was *“a nice overview over typical political topics,”* that it *“contained a lot of concrete information and gave feedback on the choices you made”* and because it contained *“information on how to participate in politics”*. Two participants, who did not think it was educational, argued that the game contained nothing new as they already *“regularly follow the news”* or are *“quite involved in politics”*. Lastly, the participants who seemed to answer that it was only somewhat educational or that it mostly stimulates reflection rather than being educational gave reasons such as the game *“primarily makes the player reflect on politics, both in terms of political viewpoints and argumentation,”* that it would *“probably have been a little more educational if it could e.g. elucidate why certain arguments were good / bad”* and that *“the game contributes to reflection and learning by providing information and simulation”*.

#### **4.5.4 Participants' thoughts about if the game changed their views on politics**

Findings from the thematic analysis of the participants thoughts about whether the game changed their views on political participation or political discussions revealed that 13 participants seemed to answer ‘no,’ six ‘somewhat’ and three ‘yes’ to this question (see *Appendix J*). The participants that answer “no” say that they *“already know about the things one can do to participate in politics,”* that they *“couldn’t imagine going out and discussing with strangers,”* that they *“had a fairly realistic relationship with it from the start”* and that they feel *“that political influence depends on more than discussions held with individuals”*. On the other hand, the participants who think the game changed their views said that they were *“reminded that there are several ways to participate, and that I may be participating more than I think. It also made me think about how important it is that we get involved politically and take care of our democracy and opportunity to influence”* and that they *“got a better insight into different ways of getting involved, which makes it easier to participate.”* Participants that answered that it somewhat changed their views explained that:

*The game partially changed my view of political participation, especially when it comes to political discussions. The game made me reflect on that maybe discussing politics with people you don't know well isn't as unnatural and uncomfortable as I first thought, because it gave a lot of information about ways to influence others [and] through the fact that you got to see a different perspective than what you are used to with how political discussion take place or can take place (which is perhaps a bit more idealistic than one typically would think it is).*

#### **4.5.5 Participants' reflections on what could be different about the game**

Lastly, results from thematic analysis of participant's thoughts about what could be different, or better, about the game and gameplay experience revealed that the participants generally answered that five main factors could be changed, namely 1) less text or better written text, 2) additional media, 3) more entertaining gameplay, 4) more clarity and 5) more variance (see *Appendix K*). Seven participants highlighted that the game could have been improved with either less text, as *"there was a lot of reading in the game, which made it a bit mentally demanding and partly boring at times,"* or better-written text as *"perhaps the text can be laid out in a different way so that it is tempting to read it more"*. At least four participants also suggest using additional media such as animations, videos, sound, music, and more images to improve the gameplay experience, while four participants suggest making the game more varied through, for example, *"more different content or more different paths/experiences"*. Furthermore, four participants suggested that the game could be generally more entertaining (without mentioning any concrete ideas on how), while three participants wished for more clarity regarding a *"slightly better explanation about the game points"* and the demonstration event (which seems to have confused one participant).

#### **4.5.6 Participants overall gameplay experience**

In other words, what can be seen is that while most participants found the game either educational, somewhat educational, or thought-provoking (about 91% of participants), fewer participants found the game entertaining (only about 27% of participants, or 64% if we include those who found it somewhat entertaining). The game mostly made the participants reflect on political discussions, their own political influence, and own political participation. However, when asked directly, very few participants seem to think that the game influenced their views on political participation (about 14% of participants, or 41% if we include those who thought it changed their views somewhat), although the quantitative findings in this study about average attitude changes show different tendencies. Lastly, some factors participants mention that they think could be better about the game to better their player experience was less text, additional media, more entertainment, more clarity, and more variance.

# 5 Discussion

## 5.1 Interpretation of study results

This study has examined whether playing a serious persuasive game, *Deltakelsesspillet*, could change explicit attitudes towards political participation among young Norwegian citizens. The results reveal that the overall attitude change among the study participants was statistically significant, but that the attitude changes varied both from participant to participant and between various attitude items.

### **5.1.1 Effects of gameplay on Norwegian youths' political participation attitudes**

Through interviews with six informants who were experts on Norwegian youths' political participation, it was revealed that experts thought that increasing self-efficacy, increasing understanding and overview of politics, and showing influence channels for political participation were some of the most important factors for increasing the Norwegian youths' political participation. This correlates well with previous research that found that political self-efficacy was one of the most important predictors of actual political behavior (Johnson and Kaye 2003; Kavanaugh et al. 2008; Eckstein, Noack and Gniewosz, 2013; Schulz et al., 2023). It also is consistent with the study participants' own thoughts about what factors and challenges influence their political participation – as several participants said that feeling a lack of influence, qualification, or impact of participation (as in self-efficacy), as well as lack of understanding and overview of politics, were important factors that affected their political participation.

Regarding self-efficacy, expert informants explained that one of the main determinators for whether young Norwegians will participate in politics is political self-efficacy, and that one way to develop this self-efficacy is through discussion where there is a high ceiling for people to have different opinions. Furthermore, several informants also highlighted that since many Norwegian youths do not have enough knowledge about how to express their opinions and influence politics, a potential solution should expand the youth's understanding of political participation and show the youths different channels of influence that are relevant to the youths. Informants also highlighted that an ideal potential game to encourage political participation should make political participation low-threshold and simple – while emphasizing the importance of good discussions and highlighting how politics affect the youths and what could happen if they do not participate.

This feedback from the expert informants, together with research on political participation, persuasive games, and attitudes, served as a baseline for the study and was one of the major reasons that the game content mostly ended up consisting of 1) information about various channels of political participation and influence and 2) game content where the player discuss political issues with various fictious characters to experience and practice political discussions. The game was designed so that the political participation was presented as simple and low-

threshold as possible. The main goal of designing the game in this way was to increase political self-efficacy attitudes, which was measured as the largest of six categories of attitudes in this study (and were covered with most questions), as many researchers in previous studies found that self-efficacy significantly correlates with actual political participation behavior (Ajzen, 1985; Johnson and Kaye 2003; Kavanaugh et al., 2008; Eckstein, Noack and Gniewosz, 2013; Schulz et al., 2023).

Interestingly enough, the aspects that were given focus in the game design seem to significantly correlate with which attitudes were affected the most, as the participants showed the most significant attitude changes for attitude items related to political self-efficacy (such as belief in having a say in what the national government does and that their own political participation can make a positive impact in politics). The fact that self-efficacy attitudes, on average, increased the most after gameplay is interesting because a large part of the gameplay experience was an educational section of the game about channels for political participation where the main aim was to increase the players' understanding of influencing politics and willingness to do so. Similarly, quite significant changes were also found for multiple items that related to political discussions, which was also a major part of the gameplay – such as changes for items about whether the participants found political discussions interesting and relevant and intentions to participate in political discussions. Meanwhile, the changes for most other attitude items that did not correlate as much with the gameplay content – such as items about the importance of voting, responsibility towards being informed, and trust towards political institutions, generally were so minimal that gameplay likely did not affect these attitudes at all.

Participants' open-ended text answers after gameplay seem to support these quantitative findings of average attitude change, as most of the participants said that gameplay generally made them reflect on political discussions and their own political participation and influence. Furthermore, the fact that several participants explicitly highlight that they feel like their political participation lack impact or effect before gameplay and that they experience challenges related to feelings of lacking influence and qualification to participate, further shows that participants experience issues related to lack of self-efficacy and that this affects their political participation.

A few participants who had played games with political themes or elements before also shared their thoughts about the impact of playing these games, which also seems to support these findings that games may affect the players thoughts – as the participants, for instance, mention that they believe games provide unique opportunities for players to reflect on issues from other perspectives. However, surprisingly few participants explicitly said that they think the game changed their views on political participation when asked in open-ended questions. One potential explanation for this could be that the question was framed poorly or that participants did not realize their changes in attitudes (as attitude changes were found to be statistically significant throughout the experiment).

A reasonable explanation for why the participants achieved the largest attitude changes for the items related to the game content can be given if research on the formation and changing of attitudes is taken into account, which has shown that an individual's attitudes may change through being exposed to new information and processing this information (Festinger, 1958; Kolek et al., 2023), and that personal experience and repeated exposure to phenomena may affect attitudes (Olsen and Zanna, 1993; Pomerantz, Chaiken and Sorella, 1995; Bohner and Dickel, 2011). Explained through the concept of 'neuroplasticity,' it can be said that the individuals who played the game were exposed to a range of stimuli in the game, which then activated and strengthened neural pathways in their brain – and as such, dispositions for thoughts, emotions, and actions both during and after the gameplay experience (Eichenbaum, Bavelier and Green, 2014). According to Ian Bogost's theory of procedural rhetoric, it can be said that the game might have persuaded the players to change their attitudes by delivering persuasive messages and information in the game that the players could interact with, personally experience, and reflect on (Bogost, 2007). If instead explained through de la Hera's theory of persuasive games, it can be said that the game delivered narrative persuasion through a story and game characters that the players discussed with, as well as visuals, sound, and a story that appealed to their emotions (such as personal responsibility of political participation, worry, guilt and empathy) and influenced how the content was interpreted by the players (de la Hera., 2019). The theory of planned behavior furthermore explains how the attitude changes from playing the game may result in proceeding behavior changes (Ajzen, 1985).

When comparing the six pre-defined sub-categories of attitudes surveyed in the study, it was found that attitudes in the four sub-categories of political self-efficacy, behavioral intentions, political interest, and political trust showed statistically significant results, while perceived responsibility towards political participation and perceived importance of politics did not. This is not too surprising since the four sub-categories that showed significant results were based on what was found to predict political participation in previous research (Johnson and Kaye, 2003; Kavanaugh et al., 2008; Eckstein and Gniewosz, 2013; Bosnjak, Ajzen and Schmidt, 2020; Schulz et al., 2023), while the two sub-categories that did not show significant results only were based on predictions on which metrics might measure attitudes towards political participation in a good way. These results are nevertheless interesting since they give some preliminary insight into which types of attitudes towards political participation seem to change after gameplay of this specific serious persuasive game that tries to increase political participation. However, there is an obvious need for more research about various types of attitudes toward political participation before anything can be concluded about which attitudes seem to change after playing persuasive games. It could be a good idea to attempt to start using commonly validated scales and standards for measuring attitudes for better comparison between studies. A good candidate could possibly include at least attitude items related to political self-efficacy, political interest, political trust, and political behavioral intentions, and possibly even use similar or identical items to the ones used in this study that were found to have significant effects after gameplay.

### **5.1.2 The role of participants' demographics on political participation attitudes**

Results from comparing demographics in this study furthermore seem to indicate that female, younger participants, those with lower education, lower reported gameplay experience and lower overall reported political behavior experience on average were more influenced by the game in terms of increased attitude changes compared to other demographics. It is furthermore interesting to note that male participants, younger participants, and participants with lower education on average started with lower average attitudes towards political participation, which is consistent with statistics from *Statistics Norway* about political participation, which shows that these demographics generally participate less in politics in Norway (With, 2017; SSB, 2024). Overall, the participant groups that started with lower average attitudes before the experiment mostly showed a larger increase in average attitude change (as is the case when comparing age, education, and political behavior). This is, however, not the case when comparing gender and gameplay amount experience, as the participant groups both had higher average attitudes before the experiment and received larger increases. These results do, however, need to be interpreted with caution, as only about half the participants were compared to another half, which is not enough to determine for sure what impact demographics have on attitude change through gameplay.

The most significant changes in terms of demographics in this study were the difference between participants between 18 and 24 years old (and mean age of 22.3 years) and the participants between 25 and 30 years old (and mean age of 28.1 years). This also seems to correlate with some preliminary previous research on age differences in persuasive gameplay by Kolek et al. (2023) and Wang and Chen (2006) that suggests that the potential of digital games to affect attitudes might slightly increase with age. Wang and Chen (2006) suggest that one possible explanation for such a persuasive difference can be that working memory has a mediating influence on the effects of age on attitude change – specifically that attitude change among older adults relies more on argument quantity than argument quality compared to younger adults and that this may be caused by the limits of working memory at a higher age (Wang and Chen, 2006; Kolek et al., 2023). It is worth noting, however, that the age differences in this study were quite minimal compared to the age differences in these previous studies, and that the age differences in this study might just be due to chance – as only about half the participants were compared to the other half.

### **5.1.3 Participants' gameplay experience**

Results from asking the participants directly about their gameplay experience reveal that while almost all participants found the game either educational, somewhat educational, or thought-provoking, fewer participants found the game entertaining. While this seems to indicate that participants overall did not find the game *Deltakelsesspillet* entertaining, some researchers have argued that it is a big misconception, both in industry and academia, that the most important thing for any serious game is to be fun to play (Jacobs, 2017; de la Hera et al., 2021). Researchers such as de la Hera et al. (2021) argue that this is a misconception that does not



seem to exist in any other medium and likely is the result of the position that games are for children that can only be tempted by entertainment. They explain: “*Just as we would not watch Schindler’s List to have a fun time, we would not experience abuse in a game by Jennifer Ann’s Group with the expectation that the gameplay would make us smile*” (de la Hera et al., 2021, p. 194). They suggest that there are other elements to the experience of a persuasive game that are measurable and offer far better predictive validity of the appreciation of persuasive games – such as that gameplay experiences can be educating and offer us the chance to experience meta-emotions like eudaimonia and promote our intellectual, virtuous growth as individuals (de la Hera et al., 2021)

## **5.2 Implications of findings**

The answer to the main research question about whether the game *Deltakelsesspillet* can change explicit attitudes towards political participation among Norwegian youths is that the game overall does seem effective for changing these attitudes. As such, this study is consistent with much previous research that did find the persuasive games seem to work for changing attitudes (Peng, Lee and Heeter, 2010, Ruggiero, 2015, Fox et al., 2020, Janakiraman, Watson, and Watson, 2021; Wang et al., 2021; Galeote, Legaki and Hamari, 2023). The study provides growing evidence of the potential of persuasive games for attitude change and shows that these games also seem to work in the Norwegian context and for Norwegian citizens. In fact, the results seem to indicate that certain attitudes can potentially be influenced quite significantly through games – perhaps especially so if they are planned to be influenced by the designer and given a strong focus in game design. For instance, while attitudes related to self-efficacy and political discussions were given strong focus in the game design, results showed that these attitudes received significantly larger changes than other attitudes that were not given focus in the game design.

### **5.2.1 Implications for designers**

This seems to indicate that digital games created by designers, in theory, can be used to influence explicit attitudes and behavior of citizens in a positive way that might be (at least somewhat) controlled and predicted – through, for example, encouraging attitudes that are more desirable for both society and citizens themselves – such as increased political engagement. This would mean that a designer can convince a target audience by designing a game as a new design tool for changing attitudes and behaviors towards various issues in a positive way that is desirable for both the user and society. Among other things, this could be used to convince a user to eat healthier, make more sustainable choices, and become more politically active - depending on what a designer wants to convey through specially designed games for persuasion. Good design by designers could here contribute to a better user experience that is more intuitive, enjoyable, visually appealing, and more likely to deliver persuasive messages successfully. It is worth noting, however, that the thought of fully controlling and predicting the effects of a persuasive game is likely too idealistic, as the effects

of persuasive games seem to depend on many factors besides the design of the game itself – effects that cannot be completely controlled by designers, such as the context in which the game is played and the mood of the player when playing the game. However, some design decisions can be consciously made by paying attention to specific persuasive intentions and goals, which can improve the efficiency of a persuasive game (Siriaraaya et al., 2018; de la Hera et al., 2021). It is also important from an ethical standpoint to ensure that persuasion through games remains ethical, voluntary, transparent, and desired by the end users of the game – and is neither deception nor coercion, as there is a moral risk when games work to ‘change’ the behaviors and attitudes of users without critical reflection from the users themselves.

### **5.2.2 Implications for educators and politicians**

The findings of this study also have implications for educational practice, as this game or similar persuasive games could be used in educational settings. As several expert informants highlights in the study, the school system is the primary arena where most young Norwegians are, and therefore an effective arena for reaching as many youths as possible. As such, one potential way of using games such *Deltakelsesspillet* would be to incorporate them into education as an interesting and practical alternative to more traditional and theoretical ways of learning. In this way, youths can learn about political participation and political discussions in an engaging way, while their attitudes towards political participation also may increase. An expansion of *Deltakelsesspillet* could furthermore include interesting use of recent technology, such as, for instance, replacing the somewhat generic discussion characters in the game with Artificial Intelligence conversational agents (such as *ChatGPT*) that could represent real politicians or representatives for political parties. In this way, youths (or citizens in general) could hold political discussions with politicians or other interesting characters in a realistic way, as a low threshold and engaging solution to experience political discussions and increase their political participation (attitudes). If players engaged with real-world characters, this might even have the secondary effect of increasing political trust (as the players might ‘realize that politicians are better than they thought’, which might be beneficial for politicians). Interestingly enough, it can furthermore be seen that the demographics of those who play a lot of digital games in Norway (e.g., young people, men, and citizens with lower education) seem to overlap with the groups that generally have lower political participation in Norway (Schiro, 2023; SSB, 2024). As such, this further emphasizes the potential of using games for these citizens to increase their political participation. If persuasive games such as *Deltakelesspillet* were to be used in educational settings, it is likely a good idea to combine exposure to the game with some kind of debriefing or discussion after gameplay, as some researchers argue that this likely will lead to more persuasive effects – as also highlighted by the expert informant from the *European Wergeland Centre* (Mitsgutsch, 2011; Glas et al., 2019). This is because some researchers argue that it does seem to be the case that the effects of political games are of a transformational nature – meaning that the experiences in the game over time get applied to real-life contexts and, in this way, affect the players (Mitsgutsch, 2011; Glas et al., 2019).

### **5.2.3 Implications for game researchers**

An interesting but complex question asked in many studies about persuasive games is which specific components of a game seem to give the most persuasive effects. Overall, few studies so far seem to come with much concrete insight into the answer to this question - which is extra hard to answer given how varied games generally are, but there is nevertheless some preliminary research that gives some indications. While Ian Bogost (2007) argues that it is through interacting with games that communicate persuasive messages through rule-based interaction designed by designers that the players are persuaded, researchers such as Teresa de la Hera (2019) argue that while the rules of the game can convey meaning, other elements in a game are also relevant for persuasion – such as the visuals, the sound, the story, and the emotions the game invoke (de la Hera, 2019; de la Hera et al., 2021). Researchers such as Peng, Lee and Heeter (2010), Steinemann, Mekler and Opwis (2015), and Fox et al. (2020) also found that enabling interactivity in gameplay led to greater persuasive effects, while Fox et al., in addition, found that reducing psychological distance in gameplay increased attitude changes (Peng, Lee and Heeter, 2010; Steinemann, Mekler and Opwis, 2015; Fox et al., 2020). Furthermore, a study by Lin and Wu (2018) gives indications that the style of the game (e.g., professional vs. cartoonish) may also affect how persuasive the game is, while a study by Ouariachi, Gutiérrez-Pérez and Lobo (2018) that compared Spanish and American participants attitudes suggest that cultural differences between players might also impact how effective the games are in promoting certain attitudes (Ouariachi, Gutiérrez-Pérez and Lobo, 2018; Lin and Wu, 2018). Lastly, studies by Wang and Chen (2006) and Kolek et al (2023) give indications that demographics, such as age, might also affect the persuasive effects of games (Wang and Chen, 2006; Kolek et al., 2023).

Overall, these research findings seem to match well with theories of attitude researchers which all seen together indicate that especially interactivity and contingency of actions (Bogost, 2017; Peng, Lee and Heeter, 2010; Steinemann, Mekler and Opwis, 2015; Tosca, Smith and Nielsen, 2020; Fox et al., 2020) and personal experiences with and exposure to a phenomenon (Festinger, 1958, Olsen and Zanna, 1993; Bohner and Dickel, 2011; Eichenbaum, Bevelier, and Green, 2014; de la Hera et al., 2021) seem to be central gameplay aspects that persuade players and promote attitudinal change – but that the effects may vary from individual to individual and may be effected by demographics such as age, culture and personal experience of gameplay (Wang and Chen 2006; Kolek et al., 2021; de la Hera et al., 2021). As such, this gives indications that it is important for game designers to enable interactivity and create cognitively rich game experiences to effectively maximize the persuasive potential of games. However, these are still only unproven hypotheses based on research tendencies, so this question still, to a large degree, remains unanswered. Thus, further studies on how games influence players need to be conducted to fully comprehend the impact and efficacy of using games for persuasion.

### **5.3 Limitations**

There are several limitations to this study that are worth mentioning. First and foremost, the study acknowledges limitations with the recruitment methods employed and that the sample size is smaller than it ideally should have been – which makes the results less representative and reliable and makes comparison between different demographics less reliable. Secondly, the study did not examine the longitudinal effects on participants, making it harder to determine whether the attitude changes were lasting. The study also did not utilize control groups or other interventions that were compared with gameplay (such as persuasive video or text-based persuasion), which makes it harder to determine how significant the persuasive effects of the game were compared to other measures. Lastly, the study did not utilize validated scales for measuring attitudes (as none were found that seemed relevant), which slightly worsens the reliability of the results and makes it harder to compare results with other studies. Despite these limitations, the study nevertheless provides valuable insight into the use and design of persuasive games for changing attitudes.

### **5.4 Further work**

More studies on persuasion and attitude change through digital games are needed to fully comprehend the impact and efficacy of using games for persuasion and to understand the effects these games have on players and society. Studies likely must be done on many different games – to understand what types of games and gameplay elements are most effective. For instance, it would be interesting to make more comparisons between mobile games, computer games, virtual reality games, and augmented reality games. The same games must likely also be researched in multiple studies to compare results within the same game – which can give information about which specific aspects of specific games seem to be effective for persuasion. More studies should ideally compare games as a media to other media to investigate whether the effects can be attributed to the game as a media or the content and information in the game – as well as to determine if games or other media are more effective for persuasion. Furthermore, very few studies so far seem to have collected data on the long-term effects of persuasive games and on whether longer exposure time (as in increased gameplay duration) changes the persuasive effects of gameplay – so more research is needed on this as well. Moreover, there seems to be a lack of research on individual differences between different players (with different demographics) in terms of the persuasive effects of games (although some preliminary research has indicated that age and cultural differences might have an effect). Lastly, research on specific game elements responsible for persuasion is also needed to determine how persuasion through games works and to what degree game designers can predict and control this process of persuasion.

## 6 Conclusion

In this study, an experiment was conducted to investigate whether the persuasive game *Deltakelsesspillet* could change explicit attitudes towards political participation among Norwegian youths through a process of conducting expert interviews, reviewing literature, game design, an experiment and analysis. The overall findings seem to make a convincing argument that games have a clear potential to affect attitudes – also in the Norwegian context, as statistically significant average attitude changes were found for the participants in the study. It did, however, seem like attitude changes varied both from participant to participant and between various measured attitude items, and that this variance had a correlation with which attitudes were given strong focus in the game design – as attitudes related to political self-efficacy and political discussions received significantly larger changes than other measured attitudes. This seems to overall indicate that games created by designers, in theory, can be used to influence explicit attitudes and behavior of citizens in positive ways that might at least be somewhat controlled and predicted. This would in that case imply that a designer, for instance, could convince users to eat healthier, make more sustainable choices, or become more politically active – depending on what a designer wants to convey through a custom-designed game for persuasion. To fully maximize the persuasion potential of games, future research on persuasive games needs to survey more types of games and attitudes, and research on which characteristics of persuasive games that lead to persuasion is also crucial, so that designers in the future can special-design games that increase prosocial attitudes to an even better degree than what is feasible today. This way, games can be used as engaging experiences that inspire citizens to change the way they think and act – to create a better future for both players of the games and society as a whole.

# References

- Ajzen I. (1985) From intentions to actions: A theory of planned behavior, in Kuhl. J and Beckmann, J. (ed.) *Action control*. Berlin: Springer-Verlag, p. 11-39.
- Antle, A. N. et al. (2014) Games for Change: Looking at Models of Persuasion Through the Lens of Design, *Playful User Interfaces*, 1, pp. 163-184. doi: 10.1007/978-981-4560-96-2\_8
- Bogost, I. (2007) *Persuasive games: The expressive power of videogames*. Cambridge: The MIT Press
- Bohner, G. and Dickel, N. (2011). Attitudes and attitude change, *Annual Review of Psychology*, 62, pp. 391–417. doi: 10.1146/annurev.psych.121208.131609
- Bohner, G., Erb, H., Siebler, F. (2008) Information processing approaches to persuasion: Integrating assumptions from the dual- and single-processing perspectives, in Crano W. D. & Prislin R. (ed.), *Attitudes and attitude change*. Radmila: Psychology Press, p. 161-188.
- Boncu S, Candel O, Popa N. (2022) Gameful Green: A Systematic Review on the Use of Serious Computer Games and Gamified Mobile Apps to Foster Pro-Environmental Information, Attitudes and Behaviors, *Sustainability*, 14(16). doi: 10.3390/su141610400
- Bosnjak, M., Ajzen, I. and Schmidt, P. (2020). The Theory of Planned Behavior: Selected Recent Advances and Applications, *Europe's journal of psychology*, 16(3), pp. 352–356. doi: 10.5964/ejop.v16i3.3107
- Boulianne, S. (2009) Does Internet Use Affect Engagement? A Meta-Analysis of Research, *Political Communication*, 26(2), p. 193-211. doi: 10.1080/10584600902854363
- Boyle, E., Connoly, T. and Hainey, T. (2011). The role of psychology in understanding the impact of computer games, *Entertainment Computing*, 2(2), p. 69-74. doi: 10.1016/j.entcom.2010.12.002
- Burke, K. (1969). *A Rhetoric of Motives*. Berkeley, CA: University of California Press.
- Dalen, H. B. and Arnesen P. K. (2020) *Folk deltar mer politisk*. Available at: <https://www.ssb.no/kultur-og-fritid/artikler-og-publikasjoner/folk-deltar-mer-politisk> (Accessed: 24 January 2024).
- De la Hera, T. (2019) *Digital Gaming and the Advertising Landscape*. Amsterdam: Amsterdam University Press.
- De la Hera, T. et al. (2021) *Persuasive Gaming in Context*. Amsterdam: Amsterdam University Press.
- DeSmet, A., et al. (2018). The Efficacy of the Friendly Attac Serious Digital Game to Promote Prosocial Bystander Behavior in Cyberbullying Among Young Adolescents: A Cluster-Randomized Controlled Trial. *Computers in Human Behavior*, *Computers in Human Behavior*, 78, p. 336-347. doi: 10.1016/j.chb.2017.10.011
- Dunn, M. Shah, G. and Verissimo, D. (2021). Stepping into the Wildeverse: Evaluating the impact of augmented reality mobile gaming on pro-conservation behaviors, *People and Nature*, 3, pp. 1205-1217. doi: 10.1002/pan3.10273

- Eagly A. and Chaiken, S. (2007) The advantages of an inclusive definition of attitude, *Social cognition*, 25(5), pp. 582-602. doi: 10.1521/soco.2007.25.5.582
- Eckstein, K., Noack, P. & Gniewosz, B. (2013). Predictors of Intentions to Participate in Politics and Actual Political Behaviors in Young Adulthood, *International Journal of Behavioral Development*, 37(5), p. 428–435. doi: 10.1177/0165025413486419
- Eichenbaum, A., Bavelier, D. and Green, C. (2014) Video Games: Play That Can Do Serious Good, *American Journal of Play*, 7(1), pp. 50-72. Available at: <https://eric.ed.gov/?id=EJ1043955> (Accessed: 7 December 2023).
- Festinger, L. (1958) The motivating effect of cognitive dissonance, in Lindzey G. (ed.), *Assessment of human motives*, New York: Rinehart and Winston, p. 65-86.
- Fogg, B. J. (2002) *Persuasive technology: using computers to change what we think and do*. San Francisco: Morgan Kaufmann Publishers.
- Fox, J. et al. (2019). Using a Serious Game to Communicate Risk and Minimize Psychological Distance Regarding Environmental Pollution, *Telematics and Informatics*, 46. doi: 10.1016/j.tele.2019.101320
- Galeote D, Legaki N, Hamari J. (2023) Climate Connected: An Immersive VR and PC Game for Climate Change Engagement, *CHI PLAY Companion '23: Companion Proceedings of the Annual Symposium on Computer-Human Interaction in Play*. Stratford: Association for Computing Machinery, p. 266-273.
- Gass, R. H. & Seiter, J. S. (2022) *Persuasion Social Influence and Compliance Gaining*. 7th ed. New York, Ny, Routledge.
- Glas, R. et al. (2019), *The Playful Citizen: Civic Engagement in a Mediatized Culture*. Amsterdam: Amsterdam University Press.
- Helgesen, L. A. (2017) *Menneskets dimensjoner*. Oslo: Aschehoug.
- Hoskins, B., Villalba, C. M. H. and Saisana M. (2012) *The 2011 Civic Competence Composite Indicator (CCCI-2) measuring young people's civic competence across Europe based on the IEA international citizenship and civic education study*. Luxembourg: Publication office of the European Union doi: 10.2788/67938
- Jacobs, R. S. (2017) *Playing to Win over: Validating Persuasive Games*. PhD thesis. ERMeCC-Erasmus Research Center for Media Communication and Culture. Available at: <http://handle.net/1765/102769> (Accessed: 21 Mai 2024).
- Janakiraman S, Watson S, Watson W. (2018) Using Game-based Learning to Facilitate Attitude Change for Environmental Sustainability, *Journal of Education for Sustainable Development*, 12(2), 176-185. doi: 10.1177/0973408218783286
- Johnson, T. and Kaye, B. (2003) A Boost or Bust for Democracy?: How the Web Influenced Political Attitudes and Behaviors in the 1996 and 2000 Presidential Elections, *The International Journal of Press/Politics*, 8(3), doi: 10.1177/1081180X03008003002
- Kahne, J., Middaugh, E. and Evans, C. (2009) *The Civic Potential of Video Games*. Cambridge, Massachusetts: The MIT Press. Available at: <https://library.oapen.org/handle/20.500.12657/26030> (Accessed: 24 February 2024).

- Karpinski, A. and Steinman, R. B (2006). The Single Category Implicit Association Test as a measure of implicit social cognition, *Journal of Personality and Psychology*, 91(1), p. 16-32. doi: 10.1037/0022-3514.91.1.16
- Kavanaugh et al. (2008) NET GAINS IN POLITICAL PARTICIPATION: Secondary effects of Internet on community, *Information, Communication & Society*, 11(7), p. 993-963. doi: 10.1080/13691180802108990
- Kleven, Ø. (2016) *Nordmenn på tillitstoppen i Europa*. Available at: <https://www.ssb.no/kultur-og-fritid/artikler-og-publikasjoner/nordmenn-pa-tillitstoppen-i-europa> (Accessed: 24 January 2024).
- Kleven, Ø. (2019) *Lav valgdeltakelse blant unge voksne*. Available at: <https://www.ssb.no/valg/artikler-og-publikasjoner/lav-valgdeltakelse-blant-unge-voksne> (Accessed: 24 January 2024)
- Kleven, Ø. (2021) *Valgdeltakelse og alder – mulige effekter av endrede aldersgrenser*. Oslo: SSB. Available at: <https://www.ssb.no/valg/artikler-og-publikasjoner/valgdeltakelse-og-alder-mulige-effekter-av-endrede-aldersgrenser> (Accessed: 24 January 2024).
- Kleven, Ø. And Risberg, T. (2023) *Mange unge voksne med kort utdanning sitter hjemme i valg etter valg*. Available at: <https://www.ssb.no/valg/stortingsvalg/statistikk/valgdeltakelse/artikler/valgdeltakelsen-sank-litt-blant-de-middelaldrende-copy> (Accessed: 24 January 2024)
- Kolek et al. (2023) Video games and attitude change: A meta-analysis, *Contemporary Educational Psychology*, 75. doi: 10.1016/j.cedpsych.2023.102225
- Kosberg, E. and Grevle, T. E. (2022) Chapter 17: Review of International Civic and Citizenship Study data analyses of student political efficacy, in Desjardins R. and Wiksten, S. (ed.), *Handbook of Civic Engagement and Education*, p. 235-247. doi: 10.4337/9781800376953.00029
- Lihong et al. (2019) *Unge medborgere. Demokratiforståelse, kunnskap og engasjement blant 9.-klassinger i Norge. The International Civic and Citizenship Education Study (ICCS) 2016*. (NOVA-Report 15/2017). Oslo: Nova. Available at: <https://oda.oslomet.no/oda-xmlui/handle/20.500.12199/3470> (Accessed: 22 February 2024)
- Lin, J. and Wu, D. (2019). Newsgames for the Greater Good: The Effects of Graphic Realism and Geographic Proximity on Knowledge Acquisition and Willingness to Help, *Journalism & Mass Communication Quarterly*, 97(1). doi: 10.1177/1077699018820315
- Maugard, N. (2019). Fundamentals of Serious Games. in: Akhgar, B. (ed.) *Serious Games for Enhancing Law Enforcement Agencies*. Security Informatics and Law Enforcement. Springer, Cham, p. 15-41.
- Michael, D. and Chen, S. (2005) *Serious Games: Games that Educate, Train and Inform*. Muska & Lipman/Premier-Trade.
- Mitgutsch, K. (2011). Playful learning experiences. Meaningful learning patterns in players' biographies, *International Journal of Gaming and Computer-Mediated Simulations*, 3 (3), p. 54-68. doi: 10.4018/jgcms.2011070104

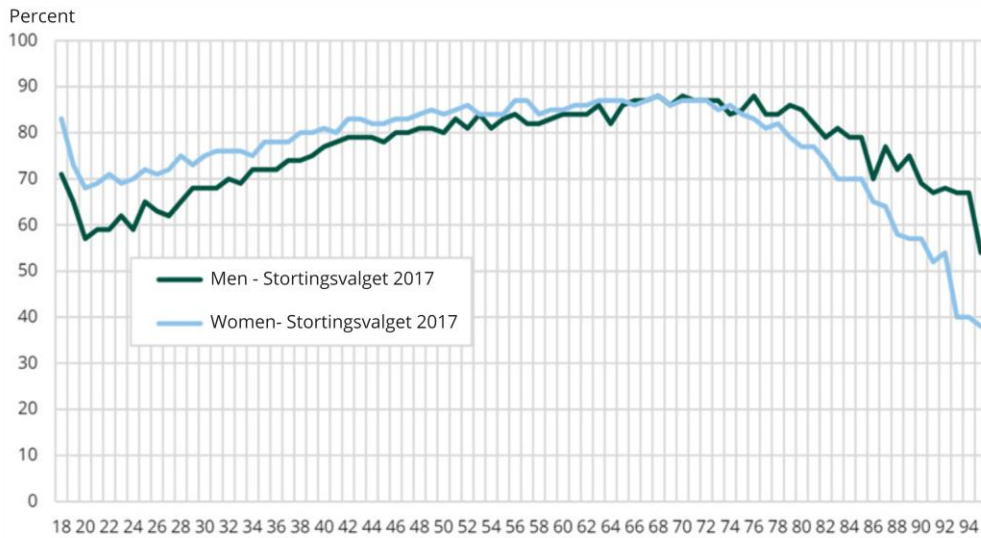


- Moore M. and Yang J. (2020) Using Eco-Guilt to Motivate Environmental Behavior Change, *Environmental Communication*, 14(4), p. 522-536. doi: 10.1080/17524032.2019.1692889
- Neys, J. and Jansz, J. (2010) Political internet games: Engaging an audience, *European Journal of Communication*, 25(3), p. 227-241. doi: 10.1177/0267323110373456
- Newzoo (2020) *Global Games Market Report 2023*. Available at: <https://newzoo.com/products/reports/global-games-market-report/> (Accessed: 21 May 2024).
- Olsen, J. and Zanna, M. (1993) Attitudes and attitude change, *Annual review of psychology*, 44, pp. 391- 417. doi: 10.1146/annurev.ps.44.020193.001001
- Ouariachi, T., Pérez, J. G. and Lobo, M. D. (2018). Can serious games help to mitigate climate change? Exploring their influence on Spanish and American teenagers, *Psychology*, 9 pp. 365-395. doi: 10.1080/21711976.2018.1493774
- Peng, W., Lee, M., & Heeter, C. (2010). The Effects of a Serious Game on Role-Taking and Willingness to Help. *Journal of Communication*, *Journal of Communication*, 60(4), p. 723-742. doi: 10.1111/j.1460-2466.2010.01511.x
- Pomerantz E, Chaiken S, Sorella R. (1995) Structural consistency and attitude strength, in Petty, R. E and Krosnick J. A (ed.) *Attitude strength: Antecedents and Consequences*. New York: Lawrence Erlbaum Associations, p. 387-409.
- Ruggiero, D. (2015). The effect of a persuasive social impact game on affective learning and attitude, *Computers in Human Behavior*, 45, pp. 213–221. doi: 10.1016/j.chb.2014.11.062
- Schiro, E. C. (2023). Norsk mediebarometer 2022. (SSB-rapport 04/2023). Oslo: SSB. Available from: <https://www.ssb.no/kultur-og-fritid/tids-og-mediebruk/artikler/norsk-mediebarometer-2022> (Accessed: 7 December 2023).
- Schulz et al. (2023) *ICCS 2022 International Report: Education for Citizenship in Times of Global Change*. (ICCS-report 09/2023) Amsterdam: The International Association for the Evaluation of Educational Achievement. Available at <https://www.iea.nl/studies/iea/iccs/2022> (Accessed: 23 February 2024).
- Siriaraya et al. (2018) A cookbook method for Persuasive Game Design, *international Journal of Serious Games*, 5(1), p. 37-71. doi: 10.17083/ijsg.v5i1.159
- Soekarjo, M., & Oostendorp, H. van. (2015). Measuring Effectiveness of Persuasive Games Using an Informative Control Condition, *International Journal of Serious Games*, 2(2), p. 37-56. doi: 10.17083/ijsg.v2i2.74
- Statista (2021) *Number of games released on Steam worldwide from 2004 to 2020*. Available at: <https://www.statista.com/statistics/552623/number-games-released-steam/> (Accessed: 21 May 2024)
- Statista (2023) *Voter turnout database – European Union*. Available at: [https://www.idea.int/data-tools/data/question-region?question\\_id=9188&political\\_entity=142733&database\\_theme=293](https://www.idea.int/data-tools/data/question-region?question_id=9188&political_entity=142733&database_theme=293) (Accessed: 26 January 2024)

- Statistics Noway (2013) *Valgdeltakelsen blant personer med innvandrerbakgrunn ved stortingsvalget 2013*. Oslo: SSB. Available at: <https://www.ssb.no/valg/artikler-og-publikasjoner/valgdeltakelsen-blant-personer-med-innvandrerbakgrunn-ved-stortingsvalget-2013> (Accessed: 24 January 2024).
- Statistics Norway (2017) *Få aktive medlemmer I politiske partier*. Available at: <https://www.ssb.no/kultur-og-fritid/artikler-og-publikasjoner/fa-aktive-medlemmer-i-politiske-partier> (Accessed: 24 January 2024).
- Statistics Norway (2024) *Frivillighet, politisk deltakelse og tillit, levekårsundersøkelsen*. Available at: <https://www.ssb.no/statbank/table/09193> (Accessed: 24 January 2024).
- Steinemann, S.T., Mekler, E.D., & Opwis, K. (2015). Increasing Donating Behavior Through a Game for Change, *Proceedings of the 2015 Annual Symposium on Computer-Human Interaction in Play*. New York: Association for Computing Machinery, p. 319-329.
- Tosca, S., Smith, J. and Nielsen, S. (2020) *Understanding Video Games: The Essential Introduction*. 4th ed. New York: Routledge
- Uhlener, C. J. (2015) Politics and Participation, *International Encyclopedia of the Social & Behavioral Sciences*, 2, p. 504-508. doi: 10.1016/B978-0-08-097086-8.93086-1
- Walters, L. and Veríssimo, D. (2022). Cross-cultural mobile game evaluation shows improvement in environmental learning, but not behavior, *Conservation Science and Practice*, 4. doi: 10.1111/csp2.12784
- Wang K, et al. (2021) Evaluating the Effectiveness of an Augmented Reality Game Promoting Environmental Action, *Sustainability*, 13(24). doi: 10.3390/su132413912
- Wang, M., & Chen, Y. (2006). Age differences in attitude change: Influences of cognitive resources and motivation on responses to argument quantity, *Psychology and Aging*, 21(3), p. 581–589. doi: 10.1037/0882-7974.21.3.581
- Width, M. L. (2017) *Politiske ressurser og deltakelse*. Available at: <https://www.ssb.no/sosiale-forhold-og-kriminalitet/artikler-og-publikasjoner/politiske-ressurser-og-deltakelse> (Accessed: 24 January 2024).

# Appendices

## Appendix A – Voter turnout by age and gender in 2017 (Kleven, 2021)



## Appendix B – Expected electoral participation by gender, socioeconomic background, and civic knowledge (Schulz et al., 2023)

Table 4.19: National average scale scores indicating students' expected electoral participation by gender, socioeconomic background, and level of civic knowledge

Country	Scale score average by gender group						Scale score by socioeconomic background						Scale score average by level of civic knowledge								
	Male students			Female students			Below country average			At or above country average			Civic knowledge below Level B (below 479)			Civic knowledge at or above Level B (479 and above)					
	-12	-8	-4	0	4	8	12	-12	-8	-4	0	4	8	12	-12	-8	-4	0	4	8	12
Bulgaria	47 (0.3)						<b>48 (0.4)</b>	46 (0.3)						<b>49 (0.4)</b>	45 (0.4)						<b>50 (0.4)</b>
Chinese Taipei	51 (0.2)						52 (0.2)	50 (0.2)						<b>52 (0.3)</b>	46 (0.7)						<b>52 (0.2)</b>
Colombia	50 (0.3)						50 (0.3)	49 (0.3)						<b>51 (0.3)</b>	48 (0.3)						<b>52 (0.3)</b>
Croatia*	47 (0.3)						<b>49 (0.3)</b>	47 (0.4)						50 (0.3)	44 (0.5)						50 (0.3)
Cyprus	46 (0.4)						<b>46 (0.3)</b>	44 (0.3)						<b>48 (0.3)</b>	44 (0.3)						<b>49 (0.4)</b>
Estonia	46 (0.4)						46 (0.4)	43 (0.3)						<b>48 (0.5)</b>	41 (0.4)						<b>47 (0.4)</b>
France	53 (0.3)						<b>54 (0.3)</b>	52 (0.3)						<b>55 (0.3)</b>	49 (0.4)						<b>55 (0.2)</b>
Italy	51 (0.3)						<b>52 (0.3)</b>	50 (0.3)						<b>53 (0.2)</b>	47 (0.4)						<b>53 (0.2)</b>
Latvia*	44 (0.4)						<b>45 (0.4)</b>	42 (0.4)						<b>47 (0.3)</b>	41 (0.4)						<b>47 (0.3)</b>
Lithuania	48 (0.3)						<b>50 (0.3)</b>	47 (0.3)						<b>52 (0.4)</b>	45 (0.3)						<b>52 (0.3)</b>
Malta	46 (0.3)						<b>47 (0.5)</b>	46 (0.3)						<b>48 (0.5)</b>	44 (0.4)						<b>48 (0.4)</b>
Netherlands†	47 (0.4)						47 (0.4)	44 (0.3)						50 (0.3)	43 (0.4)						<b>49 (0.3)</b>
Norway (9)‡	51 (0.2)						<b>54 (0.2)</b>	50 (0.2)						<b>55 (0.2)</b>	47 (0.3)						<b>54 (0.2)</b>
Poland	49 (0.3)						<b>51 (0.2)</b>	48 (0.2)						<b>52 (0.2)</b>	45 (0.4)						<b>51 (0.2)</b>
Romania	51 (0.4)						<b>53 (0.4)</b>	51 (0.4)						<b>53 (0.4)</b>	50 (0.4)						<b>54 (0.4)</b>
Serbia	44 (0.4)						43 (0.4)	42 (0.4)						<b>45 (0.3)</b>	41 (0.3)						<b>46 (0.5)</b>
Slovak Republic	48 (0.3)						<b>48 (0.3)</b>	46 (0.4)						<b>50 (0.3)</b>	44 (0.5)						<b>50 (0.3)</b>
Slovenia	48 (0.3)						<b>49 (0.3)</b>	46 (0.3)						<b>50 (0.4)</b>	44 (0.4)						<b>50 (0.3)</b>
Spain	50 (0.3)						<b>51 (0.3)</b>	49 (0.3)						<b>52 (0.3)</b>	47 (0.4)						<b>52 (0.2)</b>
Sweden‡	51 (0.3)						<b>52 (0.3)</b>	49 (0.3)						<b>53 (0.3)</b>	46 (0.6)						<b>53 (0.2)</b>
ICCS 2022 average	48 (0.1)						<b>49 (0.1)</b>	47 (0.1)						<b>51 (0.1)</b>	45 (0.1)						<b>51 (0.1)</b>
<b>Countries not meeting sample participation requirements</b>																					
Brazil	51 (0.2)						<b>51 (0.3)</b>	50 (0.3)						<b>52 (0.3)</b>	48 (0.3)						<b>54 (0.3)</b>
Denmark	50 (0.3)						<b>53 (0.3)</b>	50 (0.3)						<b>54 (0.3)</b>	46 (0.4)						<b>53 (0.2)</b>
<b>German benchmarking participant not meeting sample participation requirements</b>																					
North Rhine-Westphalia	46 (0.3)						<b>48 (0.4)</b>	44 (0.3)						<b>50 (0.3)</b>	42 (0.4)						<b>49 (0.3)</b>
<b>German benchmarking participant not meeting sample participation requirements</b>																					
Schleswig-Holstein	48 (0.4)						<b>48 (0.5)</b>	46 (0.5)						<b>50 (0.5)</b>	43 (0.8)						<b>49 (0.3)</b>

Notes:  
 Scale averages which are significantly larger ( $p < 0.05$ ) than those in the comparison group are displayed in bold.  
 (9) Country deviated from international defined population and surveyed adjacent upper grade.  
 † Nearly met guidelines for sampling participation rates only after replacement schools were included.  
 ‡ National defined population covers 90% to 95% of national target population.

## Appendix C – Questionnaire questions

### Pre-gameplay questionnaire

#### Part 1: Demographics

1. What is your age? \_\_\_\_\_
2. What is your gender?  Male  Female  Other \_\_\_\_\_  Prefer not to answer
3. What is your highest level of current education?
  - Grunnskolen (primary school)
  - Videregående (upper secondary school)
  - Bachelor
  - Master
  - PhD
4. On average, how many hours **per day** do you spend using the Internet?
  - Less than 1 hour
  - 1-3 hours
  - 4-6 hours
  - More than 6 hours
5. On average, how many hours **per day** do you spend using social media (e.g., *YouTube*, *Facebook*, *Instagram*, *Twitter*, *TikTok* and *SnapChat*)?
  - Less than 1 hour
  - 1-3 hours
  - 4-6 hours
  - More than 6 hours

#### Part 2: Gameplay behavior

6. How often do you play video games?
  - Daily
  - Several times a week
  - Once a week
  - Several times a month
  - Rarely or never
7. On average, how many hours **per day** do you spend playing video games?
  - Less than 1 hour
  - 1-3 hours
  - 4-6 hours
  - More than 6 hours
8. Are you part of any online gaming communities or forums?
  - Yes
  - If yes, please specify the communities or forums \_\_\_\_\_
  - No
9. Have you played any games with political themes or elements before?
  - Yes

If yes, please share your thoughts on the impact or effectiveness of those games in promoting awareness or engagement \_\_\_\_\_  
 No

### Part 3: Political behavior

10. How often do you vote in national elections?  
 Every election       Some elections       Never
11. How often do you vote in regional and local elections?  
 Every election       Some elections       Never
12. Have you been a member of a political party or youth political party?  
 Yes       No
13. Have you been a member of any interest organizations or voluntary organizations (e.g., *Natur og Ungdom*, *Amnesty International*, *Røde Kors*, *Redd Barna*, *Changemaker Norge*, *UNICEF*, *WWF* etc.)?  
 Yes       No
14. How often do you read news to keep yourself updated about local, national, or global politics?  
 Daily  
 Several times a week  
 Once a week  
 Several times a month  
 Rarely or never
15. Which news source do you usually use to keep yourself updated about political and social issues (select all that apply)?  
 Physical newspaper  
 Online newspaper  
 Social media  
 Television  
 Radio  
 Other
16. How often do you engage in political activism: protests, demonstrations, petitions etc.?  
 Frequently       Sometimes       Rarely       Never
17. How often do you engage in formal and informal discussions and political talk?  
 Frequently       Sometimes       Rarely       Never
18. How often have you talked with your parents or friends about political or social issues?  
 Frequently       Sometimes       Rarely       Never
19. How often do you use digital media to **post** your own content about a political or social issue on the Internet or social media?  
 Daily

- 0 Several times a week
- 0 Once a week
- 0 Several times a month
- 0 Rarely or never

20. How often do you use digital media to **share** content about a political or social issue posted by someone else?

- 0 Daily
- 0 Several times a week
- 0 Once a week
- 0 Several times a month
- 0 Rarely or never

21. How often do you use digital media to **comment** on an online post about a political or social issue?

- 0 Daily
- 0 Several times a week
- 0 Once a week
- 0 Several times a month
- 0 Rarely or never

22. How often do you use digital media to **like** an online post about a political or social issue?

- 0 Daily
- 0 Several times a week
- 0 Once a week
- 0 Several times a month
- 0 Rarely or never

**Part 4: Attitudes towards political participation**

Please specify how much do you agree with the following statements:

*1. To an extremely small degree, 2. To a very small degree, 3. To a small degree, 4. To some degree, 5. To a large degree, 6. To a very large degree, 7. To an extremely large degree*

		1	2	3	4	5	6	7
1	I am interested in political and societal issues.							
2	I find political discussions and debates interesting and relevant to my everyday life.							
3	I am interested in seeking out information about political and societal issues.							
4	I believe it is important to participate in politics.							
5	I believe it is important to vote in elections.							
6	I believe it is important to participate in political discussions.							
7	I believe I have a personal responsibility to participate in politics.							
8	I believe I have a personal responsibility to keep myself informed about political and societal issues.							

9	I believe I have a personal responsibility to express my opinion on political and societal issues to others.							
10	I consider myself well qualified to participate in politics.							
11	I feel confident in my ability to understand and contribute to political discussions in Norway.							
12	There are plenty of ways for me to have a say in what the national government does.							
13	I believe that my political participation can make a positive impact on political and societal issues in Norway.							
14	I believe my opinion matters in political and societal discussions.							
15	I believe I should express my opinion on political and societal issues in public, even if it differs from others.							
16	In general, I have trust in the political institutions and the Norwegian democracy.							
17	In general, I trust the national government in handling problems a great deal.							
18	In general, I trust politicians to handle problems a great deal.							
19	I am planning on participating in future political discussions whenever possible.							
20	I am planning on voting in future elections whenever possible.							

### **PART 5: Political engagement (open-ended questions)**

1. What factors contribute to your interest or disinterest in political participation in Norway? Please elaborate.
2. What are the most significant challenges that you face regarding participating in politics in Norway?
3. Are there particular political issues or causes that you feel strongly about? Why do these issues resonate with you?
4. What initiatives or strategies could be implemented to make political discussions and activities more appealing and accessible to you?

## **Post-gameplay questionnaire**

### **Part 1: Attitudes towards political participation**

Please specify how much do you agree with the following statements:

*1. To an extremely small degree, 2. To a very small degree, 3. To a small degree, 4. To some degree, 5. To a large degree, 6. To a very large degree, 7. To an extremely large degree*

		1	2	3	4	5	6	7
1	I am interested in political and societal issues.							
2	I find political discussions and debates interesting and relevant to my everyday life.							
3	I am interested in seeking out information about political and societal issues.							
4	I believe it is important to participate in politics.							
5	I believe it is important to vote in elections.							
6	I believe it is important to participate in political discussions.							
7	I believe I have a personal responsibility to participate in politics.							
8	I believe I have a personal responsibility to keep myself informed about political and societal issues.							
9	I believe I have a personal responsibility to express my opinion on political and societal issues to others.							
10	I consider myself well qualified to participate in politics.							
11	I feel confident in my ability to understand and contribute to political discussions in Norway.							
12	There are plenty of ways for me to have a say in what the national government does.							
13	I believe that my political participation can make a positive impact on political and societal issues in Norway.							
14	I believe my opinion matters in political and societal discussions.							
15	I believe I should express my opinion on political and societal issues in public, even if it differs from others.							
16	In general, I have trust in the political institutions and the Norwegian democracy.							
17	In general, I trust the national government in handling problems a great deal.							
18	In general, I trust politicians to handle problems a great deal.							
19	I am planning on participating in future political discussions whenever possible.							
20	I am planning on voting in future elections whenever possible.							

## Part 2: Gameplay experience (open-ended questions)

1. What do you think about the game, and what did the game make you think? Why?
2. Did you find the game enjoyable, or not? Why?
3. Did you find the game educational, or not? Why?
4. Did the game change your views on political participation? If so, how?
5. Is there anything about the game that you think could have been better or different?



## **Appendix D – Interview questions**

*Interview guide for questions to researchers and youth politicians.*

### **PART A: CURRENT SITUATION**

1. How would you describe the current level of political engagement among young Norwegian citizens how you see it?
2. What experience do you have with increasing political engagement among Norwegian youths?
3. How have you worked to increase political engagement and participation? Can you tell me a bit about this work and your experience?
4. Are there any particular political issues or causes that young Norwegians seem to feel strongly about? Why do you think young Norwegian resonate with these issues and causes?

### **PART B: BARRIERS AND CHALLENGES**

5. What do you think are some reasons why many youths in Norway do not participate in politics and democracy? In your opinion, what factors contribute to lower political engagement among young people in Norway?
6. What barriers or challenges have you observed in terms of youths' participation in politics? How do they manifest?

### **PART C: SOLUTION**

7. How can the political process and participation be made more appealing and relevant to the interests of young Norwegians?
8. In your opinion, what initiatives or strategies do you believe are effective in reaching and engaging young people in political discussions and activities?
9. If you could suggest one innovative way to encourage more youth participation in politics in Norway, what would it be, and why do you think it would be effective?

### **PART D: ROLE OF EDUCATION**

11. What role do you think education through schools and educational institutions has in promoting civic education and political participation? Why?
12. Do you think there is a need for changes in the education system to foster political awareness and engagement among young citizens? If so, what changes?
13. When should you start this civic/political education (at what age), and how?

### **PART E: ROLE OF DIGITAL MEDIA**

14. What do you think about using digital media (e.g., TV, Internet, social media, and entertainment media) to increase political participation and awareness? What is the role of digital media, in your opinion?

### **PART F: POTENTIAL OF GAMES**

15. What about games? Could political educational games be relevant and useful?

- a. If I were to design a game to convince young Norwegians to participate more in politics and societal discussions, what do you think is the most important thing to consider from your experience?
- b. Do you have any ideas about ideal content from your experience/in your opinion? What educational content should be given in the game (I plan to develop) to increase political participation and awareness? How should this educational content be delivered in a game?

## Appendix E – Challenges that participants face regarding political participation in Norway

### What are the most significant challenges you face regarding participating in politics in Norway?

#### Lack of influence/qualification

- P1:** "In addition, I think that I do not have much influence as an individual."
- P2:** "I feel that there is very little you can do to influence society as an individual. Therefore, I think it becomes demotivating and less interesting to participate in politics."
- P5:** "I don't feel sufficiently qualified to participate politically"
- P6:** "The thought that you don't have much effect on politics"
- P9:** "I feel that my viewpoints already are well taken care of by most political parties in Norway, and I would probably have gotten more involved if the dividing lines in politics were even clearer."
- P15:** "The feeling that one does not have much influence"
- P21:** "Lack of feeling that I have an influence on politics as an individual."
- P22:** "The fact that you think that you don't really have much influence on politics, and that there is no point in participating when Norway is already so good."

#### Time

- P8:** "Investment of own time"
- P14:** "Personal prioritization of resources and time"
- P18:** "Time"

#### Lack of interest

- P1:** "Primarily lack of interest."
- P4:** "Lack of personal interest I guess?"
- P6:** "Particular interest in participating."
- P15:** "Interest"

#### Lack of understanding/overview

- P1:** "I also don't have much knowledge about politics or what the major political issues are in Norway."
- P4:** "There is a lot to get to grips with."
- P7:** "Participating in politics can be quite overwhelming, because politics is really about everything in our society, so there are many issues to get familiar with. It is also not always easy to know how to influence politics, something which makes it more difficult to participate."
- P13:** "That there is an overwhelming amount of information and pages to familiarize yourself with."
- P17:** "Among other things, understanding and overview of politics is challenging, because there are so many things to understand and so many different political issues"
- P22:** "That politics is overwhelming, because there are so many issues"

#### Poor discussions/to not be heard

- P3:** "It's not that easy to speak your mind out loud. You probably have to be a member of a party or an organization to be heard. It's not easy to be heard if the politicians don't take the time to listen to people."
- P11:** "I feel that the discussions become very polarized and characterized by extreme viewpoints, poor dialogue and a lot of noise."
- P20:** "To not be heard. To be discriminated against. To be treated differently."

#### Other

- P8:** "Right" starting point and own income."
- P10:** "lack of trust in the politicians"
- P18:** "Internet trolling. Own insecurity."
- P19:** "I am not engaged enough to choose to go more into politics, but I believe it is important to follow closely enough to vote in elections"

## Appendix F – Political issues that interest the participants

### Are there any particular political issues or causes that you particularly care about, and why?

#### Equality (and discrimination)

**P2:** "I am particularly concerned about equality in society, including when it comes to discrimination and prejudice. I am concerned about this because I know that there is a lot of discrimination and prejudice in the world and I want the situation to improve"

**P4:** "My personal struggles are mostly related to human rights and equality. Many of my friends belong to groups that have historically been particularly vulnerable in society. In addition, there is a lot of misinformation plus discrimination going around, especially online about these."

**P9:** "Social distribution and welfare society"

**P10:** "Racism."

**P11:** "Social Policy"

**P17:** "Equality."

**P18:** "Welfare policy. Work and social issues."

**P19:** "The welfare society and the sharing of the benefits. I think it would be nice to have a bit more common information out to everyone about why we have what we have in the country now vs how it could be if we didn't pay taxes etc. Maybe people would be more grateful and see the whole/community better then?"

**P20:** "Discrimination/cohesion/health policy/inclusion/justice/tax policy. For me, it is extra important that everyone is seen/heard regardless of who they are. No one should be excluded/everyone is equally valuable."

**P22:** "Equality"

#### International conflicts/solidarity

**P3:** "I also follow the wars going on in the world today. The war between Ukraine and Russia is not that far away so it makes an impression."

**P6:** "Recently, it is especially the Ukraine-Russia and Israel-Palestine conflicts that have engaged me extra, as there is such injustice and terribleness in the conflicts that you have to deal with and try to counteract."

**P7:** "International solidarity (e.g., Israel-Palestine)."

**P9:** "Solidarity with the disadvantaged in other countries (asylum and immigration policy)"

#### Education

**P1:** "If it were to be an issue, it would probably be student politics, as I'm a student. But I'm not really interested in that either. I just want it to be easy and good to live in Norway."

**P3:** "I care about the plagiarism cases right now. Since I'm a student, it's taking a lot of attention right now."

**P7:** "School policy"

**P9:** "Education policy that does not create differences and exclusion"

**P21:** "Student Politics."

#### Economy

**P7:** "Tax policy"

**P11:** "Economy"

**P14:** "Industry and business policy"

**P17:** "Finance/tax"

**P21:** "Tax policy/economics."

**P22:** "Economy"

#### Environment and climate change

**P8:** "Green energy"

**P9:** "Environment, climate, sustainable development"

**P10:** "Climate change."

**P11:** "Environment and nature conservation"

**P12:** "Environment and climate because it is very important for the future"

**P13:** "focus on the environment, because I am concerned with sustainable practices going forward with climate change. oil, because it will one day run out, and it will be important to dig it out properly so that we (1) don't run out too quickly and (2) do not affect the environment too much."

**P17:** "The Environment"

**P18:** "Climate and environment."

**P22:** "Climate and environment"

#### Other

**P7:** "I care a lot about feminism, for example related to consent law."

**P8:** "- Culture - Technology"

**P13:** the investment in public institutions e.g. school and health authorities due to personal experiences with shortcomings in public services.

**P14:** "Framework conditions and freedom for religious communities. Children and young people."

# Appendix G – Participants’ thoughts on initiatives to make politics more appealing to them

## What initiatives or strategies could be implemented to make political activities and discussions more appealing and accessible to you?

### More information and overview

- P1:** "For example, it should perhaps be easier to get information about the major political issues in the country."
- P6:** "It would also have been a good initiative to find an effective way to update people about the important political issues and topics in the country."
- P7:** "For example, there should be better and more accessible information about how an individual can participate through political activities nearby, for example through the school system."
- P12:** "Good guidance and information make it easier to understand how to get involved"
- P13:** "a type of "politics for dummies" where you can get an overview of the various relevant issues today, the most relevant politicians and their opinions/news, as well as the various positions the parties take towards each other. I feel that information today is either presented too simply or too much/difficult. It becomes difficult to understand everything when there is so much information and background information that is often needed."
- P17:** "Good and easily accessible information about, for example, how to participate in politics and discussions and why you should do it."
- P20:** "Social media/through organisations. Clear themes/descriptions of what will be discussed."

### More fun/engaging initiatives

- P6:** "First and foremost, you should try to make participation more fun and engaging because right now it's a bit dry and boring."
- P8:** "- Workshops - \*Games (if done right (aka natural and not forced)) - Digital and live debate open to all citizens to ask questions (organized skype/teams/discord groupe call)."
- P15:** "Make it more engaging and easy to participate."
- P16:** "Making politics more interesting"
- P21:** "Make it more engaging and relevant to me as a person"

### Better discussions

- P2:** "It would have been more comfortable for me to participate in political discussions if there was less prejudice against people who have different opinions and more respect in discussions."
- P11:** "Better and more attractive arenas to be able to contribute to the discussion. Avoid noise, extreme views and personal attacks in social media"

### Lower threshold

- P1:** "It should perhaps be a little easier and a lower threshold to enter politics."
- P3:** "It must be available on the websites I go to the most. I go to NRK a lot to read newspapers because it seems more formal and serious. Or maybe VG. I like being on NRK and VG to take election news and play some games and answer quizzes that NRK in particular advertises."
- P7:** "I think you have to make political discussions and activities more accessible and low-threshold, so that it is easier to participate in politics."

### "Relate it to me"

- P4:** "In danger of appearing e.g. self-concerned etc.; relate them to me personally. People usually care most about what is related to themselves - generally speaking. To be generous, I can say that many political problems often are in danger of becoming very abstract if one cannot find ways of making them more concrete."
- P5:** "Perhaps if it appeals more to a younger target group"
- P10:** "change the way they work, make it more attractive to young people"

### Other

- P9:** "If society develops in a direction with even greater differences, greater climate/environmental challenges or other issues that are important to me, I would be able to get involved even more. If I were given digital opportunities to participate, I would have preferred rather than physical meetings or gatherings."
- P14:** "1. Good TV debates with relevant topics"

## Appendix H – Participants’ thoughts about whether the game was entertaining

### Did you find the game entertaining, or not? Why?

#### Somewhat

**P1:** "The game was partially entertaining and intellectually very interesting, but there was way too much text to read through, which also made it a bit boring to play"

**P6:** "I found the game to be relatively entertaining, especially in terms of seeing the reactions of the different characters in the game when you choose to say different things. At the same time, it was also a bit boring at times considering that there was a lot of text to read."

**P7:** "I would say that the game was interesting and partially entertaining, but that the focus was not on entertainment, but rather on promoting reflection. What was partly entertaining about the game was making different choices and then seeing the consequences of those in the form of reactions from the discussion partners in the game, while, for example, reading large amounts of text was more something that contributed to reflection than something that was particularly entertaining."

**P16:** "It was somewhat entertaining, but mostly boring."

**P19:** "Just fine"

**P20:** "At times it is. Conversation with the different people is entertaining, I think. Gets a bit boring in the long run, and that has something to do with the themes do too."

**P21:** "Just fine, sometimes a little better than other times"

**P22:** "I think it was interesting to see the reactions of the people in the game, but it was a bit much to read, so only partially entertaining."

#### Yes

**P2:** "I think that the game was quite entertaining, because the characters in the game were relatively realistic, in terms of point of view and reactions to answers from the player. I also think it was interesting to see the reaction the different characters had to my answers."

**P3:** "I think it's fun to get points. It was fun and testing what you think about the issues that were mentioned. I like the visuals and design of the game and that you can 'talk' to people."

**P4:** "Yes, I thought the premise was interesting - I can easily imagine a "bigger" version of the game that could actually be used in an educational context."

**P5:** "Yes, I think so because it was educational"

**P9:** "Yes, I think it was entertaining. It was nice to have different perspectives on political matters, and it was easy to recognize typical attitudes from the different parties"

**P17:** "I found the game entertaining because the characters and the responses they gave were quite realistic and because it felt like the choices you made had consequences for what happened in the game. But there was a bit too much text."

#### No

**P8:** "Not so much entertaining, but that is rather more due to the limitations of the chosen program than the subject matter itself."

**P10:** "would have liked it better if there was a slightly more humorous approach and or videos instead of text."

**P11:** "It might not have been very entertaining, more informative. It had a fairly low degree of player experience, but worked as storytelling/training/education."

**P12:** "Not particularly entertaining, partly because it was repetitive, but it was still interesting and educational"

**P13:** "no, there was quite a lot of text. the conversations were also quite stiff and unnatural."

**P14:** "I let myself be triggered by the fact that the issues felt imprecise and that the options did not represent my desired response"

**P15:** "It was more informative than entertaining really."

**P18:** "More educational than entertaining. Maybe I'm too 'old'"

# Appendix I – Participants’ thoughts about whether the game was educational

## Did you find the game educational, or not? Why?

### No, but stimulates reflection/somewhat

**P1:** "The game was most of all thought provoking and stimulated reflection, but also somewhat educational. Particularly educational was the introduction where you were given a list different ways of participating in politics. Nevertheless, the game was primarily thought-provoking rather than educational, I think."

**P2:** "I think that the game was somewhat educational, but it primarily makes the player reflect on politics, both in terms of political viewpoints and argumentation"

**P4:** "Well, somewhat - it would probably have been a little more educational if it could e.g. elucidated why certain arguments were good / bad."

**P6:** "I wouldn't necessarily call the game educational since as far as I remember there wasn't that much factual knowledge, but I would rather say that the game is thought-provoking and encourages reflection on the themes in the game (such as political participation and discussions)."

**P7:** "I imagine that the most educational part of the game was the explanation of the different ways to participate in politics (i.e. through elections, organisations, discussion and activism), although I already knew about all these forms of participation. As previously mentioned, the game also to a large degree contributed to reflection on, for example, how to hold political discussions in a successful way with people with different points of view."

**P13:** "It makes one realize that small actions can have a butterfly effect, which is the lesson I learned from this."

**P14:** "Unsure whether it was educational, but 'forces' an important reflection."

**P15:** "The game contributes to reflection and learning by providing information and simulation."

**P19:** "Brings focus to what engages"

**P22:** "I would perhaps not say "educational", but rather that the game makes one think about political participation and political discussions."

### Yes

**P3:** "I think it was educational because it seems real. And it was nice to get an overview of how you can contribute to politics. There are many ways one can contribute."

**P5:** "Yes, as mentioned, it was educational as I received feedback on how correct my answers were"

**P9:** "Yes, I think it was good to be reminded of the various ways in which you can help influence politics. It was also a nice overview over typical political topics and where the dividing lines typically go for the various parties' positions on issues."

**P10:** "yes"

**P11:** "It was educational because it contained a lot of concrete information and gave feedback on the choices you made."

**P12:** "Yes. Contained information and emphasized the importance of giving reasons for their opinions"

**P16:** "It was quite educational in terms of information about how to participate in politics and how to discuss politics with others."

**P17:** "I think the game was quite educational in terms of, for example, information on how to participate in politics."

**P18:** "Yes, to some extent. Perhaps more educational for younger people than myself"

**P21:** "Yes, it contained a lot of good information about politics"

### No

**P8:** "Not much as I regularly follow the news (mostly global/news around the world)."

**P20:** "For me, who is a bit old, it is more interesting than educational. Have been/am quite involved in politics for a long time, so have come across a lot of strange things."

## Appendix J – Participants’ thoughts about whether the game changed their views on politics

### Did the game change your view on political participation or discussions? If so, in what way?

#### No

**P1:** "I don't think the game changed my view of political participation very much. What I think differently about are primarily political discussions and the importance of having good discussions that are respectful and based on good arguments, which I feel was a lot of focus in the game."

**P3:** "I wouldn't say it changed my view that much. I am quite determined that I will and can vote in elections. I haven't felt like or maybe dared to demonstrate. I already know about the things one can do to participate in politics. Maybe it is because I feel that the politicians would not have cared about what I had said."

**P4:** "Hm... I personally couldn't imagine going out and discussing with strangers haha, but there are many people who actually get involved politically and I in no way look down on them. But I also think that I would have answered these questions differently based on the phase of the moon - not that it's a coincidence but there are an extremely large number of "degrees" involved here, and it would have been difficult to concretely remember question by question which answers I took earlier in the questionnaire"

**P5:** "No not really, had a fairly realistic relationship with it from the start"

**P6:** "No, I don't think so because I have a fairly clear picture of how I see political participation: that it is important to participate, but that it is at the same time hard to imagine that one has a particularly large effect on politics as a single person among very many citizens."

**P7:** "I wouldn't say that it necessarily changed my view of either political participation or discussions, but rather that it perhaps contributed to additional reflection on these topics, especially when it comes to, for example, what is needed for good political discussions."

**P13:** "not quite, I feel that political influence depends on more than discussions held with individuals. it also depends on e.g. use of social media, own initiative to follow the news, and of course actual participation, as the game certainly portrayed"

**P14:** "Don't think so, but gave an important reminder."

**P16:** "No not really."

**P19:** "Not very. I already know that one should perhaps have been more politically active or discussed more, but I think I land well on voting and cheering on those who do and with whom I agree"

**P20:** "No"

**P21:** "No, not really"

**P22:** "Do not think so."

#### Somewhat

**P2:** "The game partially changed my view of political participation, especially when it comes to political discussions. The game made me reflect on that maybe discussing politics with people you don't know well isn't as unnatural and uncomfortable as I first thought."

**P8:** "To a small extent, but this is more because I was aware of most of the possibilities mentioned."

**P11:** "To a certain extent - because it gave a lot of information about ways to influence others."

**P15:** "To a lesser extent perhaps."

**P17:** "Partly through the fact that you got to see a different perspective than what you are used to with how political discussions take place or can take place (such as is perhaps a bit more idealistic than one typically thinks it is)."

**P18:** "A little, in that I became aware of why I don't get involved more"

#### Yes

**P9:** "Yes, I was reminded that there are several ways to participate, and that I may be participating more than I think. It also made me think about how important it is that we get involved politically and take care of our democracy and opportunity to influence in Norway. This is not the case in all countries, and we should appreciate it."

**P10:** "yes, I like the idea of being able to talk to others about political issues through a game"

**P12:** "Yes, to some extent. Got a better insight into different ways of getting involved, which makes it easier to participate."

## Appendix K – Participants’ reflections on what could be different about the game

### Is there anything about the game that you think could be better or different?

#### Less text/better text

**P1:** "The game could have been more engaging and had a lot less text. There was a lot of reading in the game, which made it a bit mentally demanding and partly boring at times."

**P3:** "There was also a lot of text in the speech bubble. Perhaps the text can be laid out in a different way so that it is tempting to read it more."

**P6:** "There was quite a lot of text to read at times, and I think maybe some text could have been cut out or that it could have been replaced with other more engaging media (eg video, audio, images)."

**P8:** "Apart from the selected platform/media; Less text/description with words where possible and perhaps also more options that are more hybrid/mixed of some of the answer options."

**P13:** "reduce the amount of text per speech bubble, make the conversations less rigid and more natural and perhaps"

**P17:** "There was a bit too much text, and this could perhaps have been replaced with, for example, videos or similar."

**P20:** "Well made/great design/lots of good pictures. Maybe less text in some places, bullet points instead where possible. Link up links for those who want to know what, for example, Amesty is etc."

#### Additional media

**P5:** "Maybe used sound to make the experience even better"

**P10:** "a little more animations, videos, music. combine it with what attracts people."

**P6:** "engaging media (eg video, audio, images)."

**P17:** "videos or similar."

#### More entertaining

**P7:** "Can't think of anything in particular that I think would have been important to change. If there were to be something, it could perhaps be to explore the possibility of make the game even more engaging and entertaining, but am a bit unsure how to do it in practice as the game seems to mainly be intended to encourage reflection."

**P12:** "Could have been more entertaining"

**P15:** "Could have been more entertaining and engaging."

**P22:** "The entertainment factor could perhaps have been slightly increased in one way or another."

#### More clarity

**P3:** "Wish you could see how many points you had along the way."

**P9:** "I was a bit confused at the end, because I think I suddenly ended up with Natur og Ungdom without visiting the Fremskrittspartiet, but it may have been a little user error too... I really enjoyed the user characters and the visualization as a journey."

**P20:** "Slightly better explanation about the game points?"

#### More variance

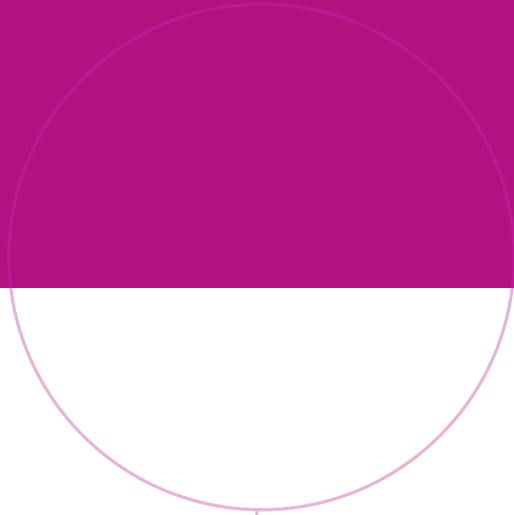
**P11:** "To make the game more engaging, it could have had more different content and more different paths/experiences. As it is now, it might be a bit repetitive and predictable."

**P12:** "a bit more varied, to convey the information more effectively"

**P13:** "in further development set up opportunities for others activities, such as social media activity, news follow-up, etc."

**P19:** "Just more work on visuals"





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