Master's thesis

NTNU
Norwegian University of Science and Technology
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Department of Computer Science

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DigiPlay: Designing Playful Interactive Installations for Spontaneous Physical Activity

Master's thesis in Informatics: Interaction Design, Game and Learning Technology

Supervisor: Yngve Dahl

June 2020

NTNU
Kunnskap for en bedre verden

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Summary

This thesis investigates if the trend of modern technology leading to sedentary lifestyles can be reversed using playful interactive installations. The purpose is to develop an understanding of how we can design playful experiences intended to support spontaneous physical activity in users. A user-centered approach resulting in a prototype, and a summative assessment of the prototype using observations, log data, interviews and a questionnaire was conducted. The findings were that users were triggered by the competition and the ability to develop strategies. The ability to adjust the amount of physical activity was considered important, and the social surroundings influenced the willingness to try. These results were discussed in relation to the concept of play and playfulness and compared to findings of relevant research. The thesis concludes that playfulness can be used to promote spontaneous physical activity and five design guidelines that can be used to inform design of interactive installations are presented: (1) Consider the value of competitive elements, (2) Develop less predictable events to ensure variation and strategic development, (3) Ensure the solution is physically robust, (4) Enable users to adjust the pace, (5) Mind the social context when placing the installation.

Sammendrag

Denne oppgaven undersøker om trenden hvor moderne teknologi fører til en mer stillesittende livsstil kan reverseres ved hjelp av lekne interaktive installasjoner. Hensikten er å utvikle en forståelse av hvordan vi kan designe lekne opplevelser ment for å fremme spontan fysisk aktivitet hos brukere. En brukersentrert tilnærming som resulterte i en prototype, og en summativ evaluering med observasjoner, loggdata, intervjuer og et spørreskjema ble gjennomført. Funnene var at brukerne ble trigget av konkurransen og evnen til å utvikle strategier. Muligheten til å justere mengden fysisk aktivitet ble også sett på som viktig, og de sosiale omgivelsene påvirket lysten til å prøve. Disse resultatene ble diskutert i forhold til begrepet lek og lekenhet, og sammenlignet med funn fra relevant forskning. Oppgaven konkluderer med at lekenhet kan brukes til å fremme spontan fysisk aktivitet og fem designretningslinjer som kan brukes til å informere design av interaktive installasjoner blir presentert: (1) Vurder nytten av konkurransebaserte elementer, (2) Legg til rette for mindre forutsigbare hendelser for å sikre variasjon og utvikling av strategier, (3) Sørg for at installasjonen er fysisk robust, (4) Gjør det mulig for brukerne å justere tempoet, (5) Husk på den sosiale konteksten når installasjonen plasseres.

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114 users participated in the research conducted in this thesis. I am grateful to everyone who shared their opinions and experiences on our prototype to make this thesis possible. Last but not least, I wish to express my gratitude to my family and partner for supporting me in working on this thesis.

Ingrid Medalen
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Chapter 1

Introduction

Modern technology has transformed the way we live our lives in the western world, broadening our capacities well beyond our physical limits while simultaneously decreasing the need for demanding bodily effort (Buckworth and Dishman, 2007). This has made our lives increasingly comfortable, but has had the unintended and worrying side effect of making our lives increasingly sedentary as well, with associated disastrous effects on health, mobility and well-being (Patterson et al., 2018; Wang et al., 2019; Kohl 3rd et al., 2012; Anderson et al., 2007).

One of the actions to prevent the sedentary lifestyle is an increased level of activity. However, more research is necessary to "develop effective interventions that may help children and adolescents diminish the time they spend on inactive behaviors" (Van et al., 2007, p. 1241). Therefore, research on how to use technology to empower activity have emerged. One of the areas receiving increased interest is interactive installations which is physical constructions with origins in software that usually adapts to actions performed by users (Trifonova et al., 2008). Interactive installations are often placed in public areas allowing for a wide range of users. The traits of interactive installations enable broad possibilities allowing for spontaneous bodily effort performed by the user.

Playful interactive installations have proven to have a positive effect on behavioral change in several different domains, and thus they are predicted to have a positive impact on the users level of physical activity (Nijholt, 2014). This has caused an interest in body movement and the development of playful experiences activating the players is emerging. However, Mueller et al. (2018) indicates that research are yet to understand the correlation between body and technology and that more research should be conducted. The main hypothesis of this thesis is that the trend of sedentary lifestyle can be reversed, and that interactive installations designed for playfulness have the potential to transform our lives back from sedentary to active.

Based on the research hypothesis, this thesis has the following research question:

How can we design playful interactive installations intended to promote spontaneous physical activity in users?

To answer this, I followed a user-centered approach. A prototype of an interactive installation was designed in iterations and evaluated using formative evaluation techniques. To answer the research question, a summative assessment of the final prototype was conducted. The relevant data was collected using a method triangulation consisting of a questionnaire, log data from the installation, observations and interviews. Thus, both qualitative and quantitative data collection approaches were used with emphasis on the qualitative data.

The main contribution of this thesis is a set of design guidelines intended to inform design of playful interactive installations. In this context, a design guideline can be defined as "a prescriptive recommendation for a context sensitive course of action to address a design issue" (Nowack, 1997, p. 2). Additionally, design guidelines are considered recommendations based on found knowledge, meant to support designers in their work (Kim, 2010).

The thesis consists of 9 chapters. Chapter 2 presents relevant concepts and theory. Chapter 3 presents background literature as well as related work on interactive installations. Chapter 4 describes the research design of the thesis. Chapter 5 describes the design process of the prototype. Chapter 6 gives an understanding of the methodology and data analysis used in the summative assessment, being the foundation for the results of this thesis. Chapter 7 presents the results and these are discussed in chapter 8 which also includes reflections on the process. Finally, chapter 9 concludes the thesis.

Chapter 2

Theory

This chapter presents relevant theory on play and playfulness and its connection to relevant research, as well as providing insight in how the terms are understood and used in this thesis. Section 2.1 presents a selection of definitions of play and playfulness and describes how both are understood in the context of this thesis. Furthermore Section 2.1.3 and Section 2.1.4 presents relevant research on playfulness in relation to social interaction and physical activity.

2.1 Defining *Play* and *Playfulness*

The definition of play and playful experiences has been discussed for centuries and is described as "an elusive concept with a multitude of diverging (and sometimes converging) theories, definitions and approaches" (Korhonen et al., 2009, p. 275). The following sections presents definitions of play and playfulness from previous research. Lastly, a description of how the terms are understood in the context of this thesis is presented.

2.1.1 *Play*

Rudan (2013, p. 1385) states "Play 'takes hold of' our emotional life. It possesses a creative motivation characterized by its improvisational and innovation quality, ending in successive elaboration and refraction." He also pinpoints that play often is considered the opposite of work.

Bundy (1993) defines play as an activity which is completely volunteer and thus, the choice of activity can describe a person's personality. She also highlights that when performing activities that are considered as play, the consequences can be seen as diminished.

Frisch (2013) describes play as a factor that influences well-being in people and can increase quality of life. This is further highlighted by Magnuson and Barnett (2013) that describe how playfulness can have a positive impact on reducing stress and avoiding negative feelings.

Sutton-Smith (1999) uses play to describe a wide range of activities, including several sports and actions involving a risk. It is highlighted that play is a complex connection between several research areas like physiology and biology, among other things.

The definition of play as an important connection between several parts of the human body is highlighted by Goncu and Gaskins (2007) which states play has developed through evolution and is an important connection between several parts of the human body. It has also been investigated how play has been

important to make humans gain practice in important skills (Pellegrini et al., 2007). However, this indicates that there are several types of play, and that there is a difference between play for children and adult play (Pellegrini et al., 2007).

The different perceptions of play, as well as the different settings where play has been studied can explain the lack of a common definition of play. However, there are some common aspects of the presented statements. Play is connected to our feelings which can impact the whole body. Because people's feelings vary, the feeling of playfulness can depend on the user's feeling of performing an activity. For this thesis, the focus will be on adult playfulness, thus focusing on the experience to be an opposite to work as proposed by Rudan (2013). Play will be understood as a feeling of well-being in body and brain when performing a positive action that gives a break from boring activities.

2.1.2 *Playfulness*

Barnett (2007, p. 955) defines playfulness as "... the predisposition to frame (or reframe) a situation in such a way as to provide oneself (and possibly others) with amusement, humor, and/or entertainment. Individuals who have such a heightened predisposition are typically funny, humorous, spontaneous, unpredictable, impulsive, active, energetic, adventurous, sociable, outgoing, cheerful, and happy, and are likely to manifest playful behavior by joking, teasing, clowning, and acting silly".

Bateson et al. (2013, p. 100) states that "Playfulness, the defining feature of playful play, is a positive mood state that is not always detectable in observable behavior. The behavior of a playful human is captured by numerous synonyms, including cheerful, frisky, frolicsome, good-natured, joyous, merry, rollicking, spirited, sprightly and vivacious".

Furthermore, "Playfulness is defined as an adult's internal predisposition that varies in intensity according to the presence and quality of the following components: creativity, curiosity, sense of humor, pleasure, and spontaneity" (Guitard et al., 2005, p. 21).

The definitions of playfulness are similar compared to the wide range of areas where play is considered. However, it is closely connected to the definition of play, thus making the applicable areas of playfulness many. This thesis understands playfulness as a positive feeling users experience when performing an activity that is considered playful. Exactly which aspect of the activity that is making the user playful will differ because of the personal perception of playfulness.

Costello and Edmonds (2007) have tried to connect the different adaptions of play and playfulness in order to define common framework that can be used to understand play. The authors describe thirteen pleasures of play based on various on theories emerging from different perspectives on play:

- Creation- "the pleasure participants get from having the power to create something while interacting with a work" (Costello and Edmonds, 2007, p. 79).
- Exploration - the pleasure of being able to explore the unfamiliar elements of an interaction
- Discovery - the pleasure of figuring something out by discovering it, for example the connection between actions.
- Difficulty - the pleasure of developing a skill by being faced with a challenge.
- Competition - the pleasure of trying to reach a goal.
- Danger - the pleasure of feeling that one is taking a risk.
- Captivation - "the pleasure of participants feeling mesmerized or spellbound by something or of feeling like another entity has control over them" (Costello and Edmonds, 2007, p. 80).

- Sensation - the pleasure of performing a physical action giving a good feeling.
- Sympathy - "the pleasure of sharing emotional or physical feelings with something" (Costello and Edmonds, 2007, p. 81).
- Stimulation - the pleasure of experiencing familiarity with elements, for example by perceiving something from the ordinary life.
- Fantasy - the pleasure of perceiving imaginative creations.
- Camaraderie - "the pleasure of developing a sense of friendship, fellowship or intimacy with someone" (Costello and Edmonds, 2007, p. 81).
- Subversion- the concept of including elements that make a person feel they are doing something naughty.

Using the pleasures of play, one can understand how to stimulate playful experiences in users. However, the thirteen pleasures are created based on a combination of viewpoints on play and can be influenced by external factors that are specific for a given situation. Thus, the pleasures that are considered relevant to develop a playful experience can vary based on the context.

2.1.3 *Playfulness* and Social Interaction

Another aspect of play and playfulness is the connection to social bonding and social interaction. Gajadhar et al. (2008) have investigated how the social aspects of gaming influence the perceived enjoyment while playing. Games can be seen as a type of play because the underlying reason for playing games in most cases is enjoyment. When playing, most people do it only for the purpose of feeling enjoyed (Gajadhar et al., 2008). Therefore, one can define games as a sort of rule-based play. Their findings indicated that "compared to playing against a virtual or mediated co-player, a co-located co-player significantly adds to the fun, challenge, and perceived competence in the game" (Gajadhar et al., 2008, p. 116). Furthermore, the level of affordance of social elements directly influenced the enjoyment of the players.

Similarly, a study on the gaming habits of teens showed that social interaction was a central part of a diverse set of gaming experiences, and that teens gaming on a regular basis had the same level of social interaction as those spending more time doing other activities (Lenhart et al., 2008). However, a study on the factors influencing the enjoyment of playing soccer, hockey and baseball showed that the social aspect of belonging and being part of a team had less influence than the excitement of playing the sport in general (Wankel and Kreisel, 1985). Thus, the importance of social interaction for the perceived playfulness of an interactive installation might vary depending on the goal of using it.

2.1.4 The Influence of *Playfulness* and Social Interaction on Physical Activity

Proyer et al. (2018) have investigated the relationship between playfulness and health benefits by investigating whether adult playfulness is related to physical activity. The study was conducted because former studies indicated that playful children were more active than other children. The research consisted of two different studies. The first study investigated the association of self- and peer-reported playfulness and self- and peer-reported physical activity. The second study measured the actual level of physical fitness and its association to self reported playfulness. The results from the studies indicated a positive correlation between playful persons and the time spent on activity and a negative correlation to the time spent sitting down. Overall, the results showed that playfulness while performing an activity made the

users perform the activity longer. Thus, the players experiencing playfulness stayed active over a longer period of time than those who were less playful.

This correlates with the findings of Tudor-Locke (2002), stating that exercising together has a motivating effect because it promotes a lighthearted competition which stimulates a higher level of activity in people. These findings were also highlighted by Consolvo et al. (2006) which found the support of social influence a key principle in design of applications promoting physical activity, and Ståhl et al. (2001) which found the social environment to be the strongest predictor for engaging in physical activity. Exercising together can be compared to playfulness due to the connection between playfulness and social interaction. However, it is important to notice that playfulness depends on several factors, not only the social interaction.

Chapter 3

Background and Related Work

This chapter presents relevant literature and research used to understand the design and development of playful interactive installations. Section 3.1 discusses the difference of designing for usability and designing playful interactions. Section 3.2 presents relevant literature and considerations on the design of playful interactions. Section 3.3 presents selected studies on interactive installations and discusses their relation to this thesis.

3.1 Designing for Usability vs. Designing Playful Interactions

There is no guarantee that games or interactive content are perceived and used as expected or intended (Hassenzahl, 2004). To prevent the user from misunderstanding the intended use, comprehensive work to define experiences with a flow that satisfies the users and signalizes the intended use of the game or the interactive element is required. There exist several design principles used to increase usability and avoid common misunderstandings (Preece et al., 1994). However, designing for playfulness differs from designing for usability. While designing for usability often involve focus on consistency and similarity in solutions, designing for playfulness can aim at stimulating exploration through unfamiliar elements, or discovery by letting the user understand the effect of actions, as described in Section 2. Thus, designing for usability where the actions and effects are explicit can decrease the experienced playfulness in interactive products by limiting the playful aspects. Nonetheless, the looks of interactive products can impact the perceived usability and satisfaction (Hassenzahl, 2004). Therefore, the looks and usability should be considered to ensure a sufficient degree of satisfaction, preventing a user's frustration from decreasing the perceived playfulness. The balance between designing for playfulness while still providing the user with a sufficient user experience can be difficult to obtain and should be considered throughout the design process.

3.2 Designing Playful Interactions

3.2.1 Design Patterns for Playful Interactions

Bekker et al. (2010) has investigated the design of successful play concepts. They present three design patterns which is considered useful when designing playful interactions. The patterns have been iteratively developed based on evaluations of several prototypes.

The three design principles are:

- Motivating feedback
- Open-ended play
- Social interaction patterns

Motivating feedback aims at providing immediate feedback to the physical actions performed by the player. The authors state "we design concepts that motivate children to participate in physical games, and thus contribute to their meeting the general physical activity norm..." (Bekker et al., 2010, p. 387). Despite that the principle mostly have been applied for children, one can consider it relevant for adults, motivating them to stay active longer and thus improving their health.

Open-ended play "is based on the idea that rather than providing concepts with concrete game goals and rules, providing local interaction opportunities with play objects may lead to interesting global game goals" (Bekker et al., 2010, p. 388).

The principle of social interaction patterns aims at making the developers think of how objects and their characteristics can influence how players act. The principle is inspired by the concept social play, which has been discussed by Broadhead (2004), among others. The main purpose of the principle, regardless of the type of social aspects the developers want to trigger, is to create objects that promote actions that make people collaborate.

3.2.2 The PLEX Framework

Korhonen et al. (2009) investigated the playful user experience by looking at principles and attributes from digital games. The research that resulted in the PLEX framework aimed to contribute to an understanding of "the role of playfulness in overall user experience of the product" (Korhonen et al., 2009, p. 274). The PLEX framework consists of twenty categories presented in the Table 3.1.

3.2.3 Designing for Physical Activity

Research in other areas show that positive emotions can have impact on behavior and attitudes towards different actions (Avey et al., 2008). Play is something that can give positive emotions and thus impact our attitudes towards performing tasks that used to be considered boring (Lund et al., 2005). Based on the provided definitions of playfulness, designing for playful experiences involving physical activity requires consideration of the user's feelings and emotions towards the activity.

Mueller et al. (2011) has proposed a framework for exertion games, that is games involving physical activity. The aim is to aid design of enjoyable experiences to support increased investment in physical activities. The framework suggests that four lenses should be considered:

- The responding body
- The moving body
- The sensing body
- The relating body

The responding body refers to how the body responds to the physical activity, for example by starting to sweat or by gaining increased heartbeat. The moving body refers to the ability to react and coordinate the body during physical activity. The sensing body refers to how the body is affected by the surroundings.

Category	Description
Captivation	Experience of forgetting one's surroundings
Challenge	Experience of having to develop and exercise skills in a challenging situation
Competition	Experience of victory-oriented competition against oneself, opponent or system
Completion	Experience of completion, finishing and closure, in relation to an earlier task or tension
Control	Experience power, mastery, control or virtuosity
Discovery	Experience of discovering a new solution, place or property
Eroticism	Experience of sexual pleasure or arousal
Exploration	Experience of exploring or investigating a world, affordance, puzzle or situation
Expression	Experience of creating something or expressing oneself in a creative fashion
Fantasy	Experience of make-believe involving fantastical narratives, worlds or characters
Fellowship	Experience of friendship, fellowship, communality or intimacy
Nurture	Experience of nurturing, grooming or caretaking
Relaxation	Experience of unwinding, relaxation or stress relief. Calmness during play
Sadism	Experience of destruction and exerting power over others
Sensation	Meaningful sensory experience
Simulation	Experience of perceiving a representation of everyday life
Subversion	Experience of breaking social roles, rules and norms
Suffering	Experience of frustration, anger, boredom and disappointment typical to playing
Sympathy	Experience of sharing emotional feelings
Thrill	Experience of thrill derived from an actual or perceived danger or risk

Table 3.1: The PLEX framework (Korhonen et al., 2009, p. 283)

Considering this can aid the designer in understanding how artifacts contribute to the participant's experience. The relating body aims at supporting design of experiences related to the influence of people, body and technology. This can support the social aspect of an experience. Thus, considering the four lenses can be useful for understanding how the physical activity is experienced by the user in order to avoid negative influence on the perceived playfulness.

Furthermore, Mueller et al. (2018) investigated design principles making the end user experience the body as play. They propose a new perspective of the human body, considering both the material and lived perspective based on two German words, "Korper" and "Leib". The research is based on the thought that one, by considering the body from two perspectives, can design games making the user experiencing the body as play and not the controller of the play. This can be achieved through thinking that players not only have bodies but are bodies as well. Designing for this approach requires thinking about the user's emotions and feelings, and the connection between them. A player will most likely have emotions connected to actions in a game, but their experienced feelings should also be considered. Pressing a button straight in front of you, will be easy and understandable, but pressing a button higher or lower can give better feelings as a greater feeling of achievement arises. Designing for both aspects in every part of the game is impossible. However, bearing the concept in mind can increase the user experience, making the play feel more coherent and like a total experience. Mueller et al. (2018) thus proposed three design strategies for engaging the Korper-Leib interplay:

- Use the limits of the Korper as facilitators for intriguing Leib experiences
- Support players in exploring the interplay between Korper and Leib
- Consider facilitating a loss of bodily control in order to support a shift of focus to the Leib

Besides considering the user's feelings, emotions and physical limitations, Garner et al. (2013) found that giving the player control over the movements was important in supporting social physical play. When designing for a less technology restricted experience, a higher degree of movement was achieved, and the players enjoyed the the ability to spontaneously move without being limited or restricted. Thus, by allowing the user to control the movement, a higher degree of physical activity can be achieved because the user experience is perceived as more enjoyable.

3.2.4 The Honey Pot Effect

As described in Chapter 2, the level of social interaction can influence the perceived playfulness, and willingness to engage in physical activity. Thus, the social interaction can influence the engagement in playful interactive installations. The honey pot effect is described as the phenomenon in which someone interacting with a solution makes several others attracted to do the same (Gentile et al., 2017). Wouters et al. (2016) states that the effect is influenced by a number of factors, especially the amount of audience present. The balance between the amount of people attracting even more, and the enjoyment of the players with the audience is best in the honey pot 'sweet spot'. The effect of an audience can also be influenced by the way the audience act and the proximity to the player, which can determine whether or not the player notice the amount of audience and is distracted by it (Gentile et al., 2017).

Furthermore, Garner et al. (2014) found that the influence of an active audience, for instance participating by giving advice about events, could contribute positively to the players experience. This was mainly due to the audience increasing the amount of tactics and general discussion which contributed to enjoyment among the players. Thus, ensuring the visibility of an interactive installation is considered advantageous, but Gentile et al. (2017) highlights that the players reaction to being gazed can vary with factors like age and gender.

3.3 Related Studies on Interactive Installations

3.3.1 Balance Ninja

The use of galvanic vestibular stimulation, GVS, to develop vertigo games has been researched by Byrne et al. (2016). Vertigo is defined as "the momentary disruption of the stability of perception" (Byrne et al., 2016, p. 159) and is the basis of several non-digital activities as rock-climbing and skiing. However, the use of vertigo in games was limited because it was considered negative, despite it being a central part of several VR games. The vertigo can contribute to stimulation towards a feeling of controlling the game with the body, and is thus relevant when researching the use of the body in play. Balance Ninja aimed at giving the players a feeling of vertigo by letting two players control each other's vertigo stimulation by moving on a balance board resting on a wooden beam. Each player had their own GVS system and an android phone reading the movements used to control the other player's balance. This was done by leaning to a side, triggering a GVS stimulation for the other player. When a player lost their balance, the other player was rewarded a point. Because the GVS stimulation was individual, it had to be configured for each new player.

The game was tested with 20 participants, and a questionnaire, observations and interviews were conducted. The authors found that most of the participants were neutral to the statement of the GVS being uncomfortable, and only a few reported they were feeling a bit sick after playing. In addition, the participants said they would play the game again and described the experience as playful and fun. The playfulness was often driven by the ability to control the other player's balance, and thus the physical activity was highlighted as important. However, a downside was that the configuration of GVS took time and made the threshold for trying Balance Ninja higher. The game was successful in terms of promoting playfulness and activity and the researches stated that further research on the use of vertigo could be useful.

3.3.2 Augmented Climbing Wall

The augmented climbing wall was designed and tested by Kajastila et al. (2016). The aim of the wall was to combine computer vision and interactive graphics to instruct and motivate people to try indoor climbing. The interactive climbing wall was installed in a climbing center and tested by hundreds of climbers in a wide range of ages. The aim of the research was to contribute to an understanding of how digital augmentation can subsidize sports with new challenges and movements in safe environments. The climbing wall was configured with three different modes that were tested separately. The three modes focused on different aspects of indoor climbing. The Spark mode consisted of getting from a point to another without touching moving electricity lines. The Whack-a-bat game challenged the players to climb while touching 'bats' before the time ran out. The last mode, Route creation, focused on making climbers follow a specific route displayed on the wall.

In total, the climbing wall was tested with 70 participants and interviews and observations were conducted. The findings indicated that the climbing wall was a success, especially the Spark mode. This was mainly due to the participants enjoying a diversity of movements and challenges, making them playful. In addition, using climbing in the interactive installation decreased the risk of trying new routes and made it easier to quickly improve skills. This contributed to a repetitive use among the participants. Lastly, endurance training became easier because the digital content could be generated procedurally (Kajastila et al., 2016).

3.3.3 Flow Steps

Flow step was designed as an installation based on interactive and flexible mats "aimed at supporting the playful experiences of curiosity, exploration, challenge, fellowship and competition during three different stages of play: invitation, exploration and immersion" (De Valk et al., 2012, p. 3). The mats were configured to suit the three stages of play: invitation, exploration and immersion. To invite a player, the mats glowed. When stood upon, the colors of the mat changed, allowing for players to explore the effect of moving around. Lastly, when discovering effects, rules and games could be made based on the players perception of the experiences. When designing Flow Steps, Exploration, Challenge, Competition and Fellowship, all being principles from the PLEX framework by Korhonen et al. (2009), were considered.

The testing was conducted with twenty children between 7 and 8 years. The children were given information gradually in order to make them discover and explore the game. The results included a variety of gameplay solutions configured by the children playing. When making the children explore the interactions, various movements with both hands and feet were used. Most of the children created their own rules on top of the rules decided by the interaction. The authors aimed at providing a game with possibilities for open ended play and succeeded. However, it was discovered that some of the principles from the PLEX framework were better suited in specific stages of play and considering them in unsuitable stages could influence the play negatively.

3.3.4 Shadow Wall

Akpan et al. (2013) have investigated the combination of space and place in interactive installations by creating an installation called Shadow Wall and placing it in different locations. Shadow wall is "an interactive display that captures the shadows cast by people as they move in front of a projected white screen" (Akpan et al., 2013, p. 2214). A movie of the movements of these people is created and projected onto a screen. When several people have passed, the movies are merged, creating a "dynamic collage from the history of interactions with the system" (Akpan et al., 2013, p. 2214). The Shadow wall was placed in six different locations with different physical and social contexts: a campus hallway, a campus cafe, a skate park, a dance studio, a clothes store and a campus foyer. 1647 people tried the installation, and the data was gathered using interviews and observations. The findings indicated that the amount of people noticing and interacting with the installations were dependent on its visibility. Thus, maximizing the space where the installations was seen highly contributed to an increased number of persons using it. However, the installation had to signalize its interactivity in order for people to perceive that it was more than a display. Furthermore, people were more interested in trying after observing someone else using the installation. However, this effect was remarkable mostly in open areas like the skate park, compared to the busy cafe area where it was less noticeable. The authors concluded that the space is important for an interactive installation to be noticed and used based on its visibility, but that the social context was just as important, as people do not engage with the installations unless they are comfortable trying them.

3.3.5 Positioning the Current Study

The related work presented in this chapter is just a selection of the conducted research and is not indented to be a complete overview of preliminary work. However, it can be used to define areas where research is lacking and describe the main contributions of this thesis.

This thesis aims to provide an understanding of how playfulness can contribute to promotion of spontaneous physical activity. The time spent on physical activity is associated with wellness and it is found that light-intensity activity has a positive impact (Chastin et al., 2019). In addition, the recommended

physical activity level is created considering adults (Jansson et al., 2015), but the presented work has not been designed with a specific focus on adults. The design of interactive installations should consider adults as the stakeholders, including those with less time to perform physical activity. This thesis aims to give an understanding of how interactive installations without requirements of configuration before use, can give spontaneous sessions of physical activity for adults.

In addition, this thesis seeks to provide a broader understanding of the factors influencing playfulness in interactive installations. Considering the definitions of play and playfulness presented in Section 2.1, several factors can influence the playfulness. Thus, by letting the participants experience an interactive installation with different game mode configurations and a varied social context, particular experiences can be linked to factors and capture a broader view than the previous work.

Chapter 4

Research Design

This chapter presents the research design of the thesis. The user-centered approach, including the iterative design process of an interactive installation and the data collection methods used to perform a summative assessment, will be presented. The iterative design process and the data collection, used as the basis for a summative assessment, were conducted in collaboration with a student from Department of Design, and a student from Department of Computer Science, both master candidates. Thus, all three students participated in the process, and the choices were made through collaborative decisions. The group of students is hereby referred to as the research team. Section 4.1 describes the user-centered design process before Section 4.2 describes the user-centered approach of this thesis. Section 4.3 describes how the iterative development process was conducted. Lastly, Section 4.4 describes how the summative assessment was conducted.

4.1 User-Centered Design

User-centered design is an iterative design process which actively involves the users throughout the process and incorporate the users' perspectives in every decision made. The process consists of four linked human-centered steps. Each step is created based on an important aspect of design involving users. Figure 4.1 shows the steps of the user-centered design process as defined in ISO 9241-210:2010 (2010).

The process of designing interactive products and human-computer interaction is complex. Therefore, one iteration is typically not enough in order to achieve the best possible solution for the end users. This is mainly caused by the understanding of the stakeholders' needs, which often becomes clearer after trying several solutions (ISO 9241-210:2010, 2010). Depending on the type of users and the needs of the project, the degree of user involvement in the different steps will vary (ISO 9241-210:2010, 2010). However, it is common to evaluate the solution of each iteration with the end users.

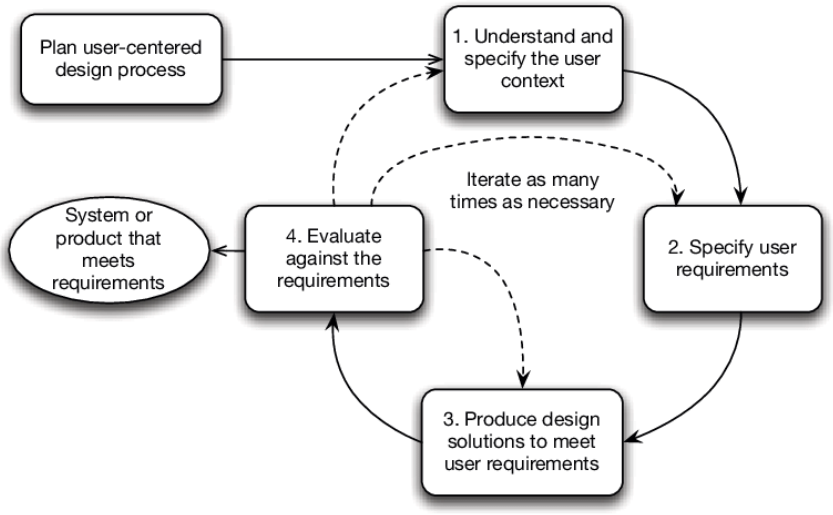


Figure 4.1: The user-centered design process (ISO 9241-210:2010, 2010)

4.2 The User-Centered Approach Applied in This Project

One can split this thesis into two phases, an iterative design process where a prototype was continuously evaluated using formative evaluation techniques, and a final evaluation of the prototype resulting in a summative assessment creating the foundation for the results of this thesis. User-centered design was essential in both phases. Figure 4.2 shows the user-centered approach applied in the iterative design process of this project. When the prototype satisfied the requirements, the final evaluation could be conducted and the project moved to the second phase.

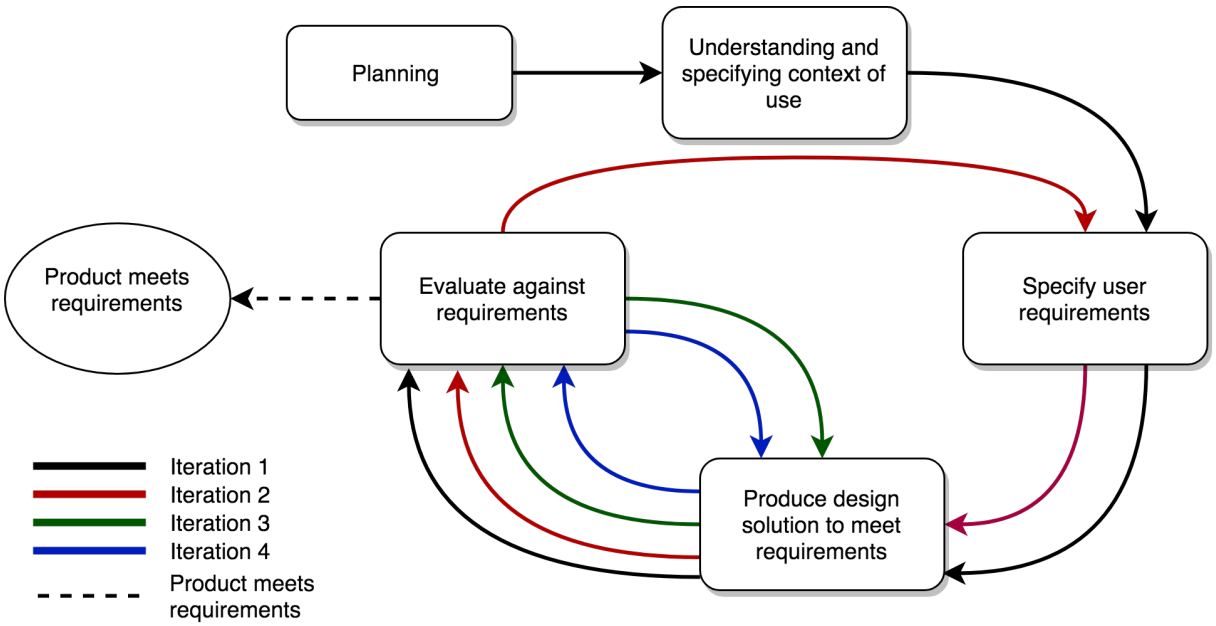


Figure 4.2: The project's implementation of the user-centered design process

4.2.1 Planning the Process

Before starting working with the user-centered design, the research team planned the work by creating a project plan describing the milestones, allocated tasks and responsibilities within the team and identified methods suited for the process as described in ISO 9241-210:2010 (2010). Relevant literature was also studied to obtain an understanding of the research field. Estimating the time required when developing a product in iterations using user-centered design, can be challenging because the number of iterations needed can be difficult to predict (ISO 9241-210:2010, 2010). However, due to the deadline of the thesis, the research team had a limited amount of time for development of the prototype. For the summative assessment to be possible, the team agreed on performing as many iterations as possible (or needed) within four months. At the beginning of a new iteration, a detailed plan of the goals was made to ensure efficiency.

In addition, planning the work involved agreeing on the end users of the project. Initially, the project did not have a specified stakeholder group. The user-centered design process is highly dependent on involving the users (ISO 9241-210:2010, 2010), and therefore the specification of the end users was essential. As the final evaluation for the summative assessment was intended to be performed on campus, students were seen as the most interesting group to focus on. Students were thus chosen as the end users of the project, and it was decided that the prototypes would be continuously evaluated and designed with students' opinions in mind. However, a specific group of students were not chosen, and different students were involved in each step of the process. This was not considered a downside as encapsulating the opinions of a diverse set of students was essential for the solution to be used by most types of students.

4.2.2 Data Collection

Table 4.1 shows the data collection approaches used in the thesis, separated based on the evaluation. Thus, the formative evaluation represents the data collection approaches used in the first phase, while the summative evaluation represents the second phase. When collecting data for the summative assessment, personal information was collected, and all participants had to give their consent before the data could be collected. The consent form can be found in Appendix A. The analysis of the collected data is described in Section 4.3.4 and 6.2.

Evaluation	Data collection approach
Formative	Interviews
	Observations
	Study of similar solutions
Summative	Interviews
	Observations
	Questionnaire
	Log data from prototype

Table 4.1: The data collection approaches used in the process

4.3 Iterative Development of Prototype

4.3.1 Understand the Context of Use

To understand the context of use, several methods were used. As the context often becomes clear by investigating the users' habits, as well as potential similar solutions (ISO 9241-210:2010, 2010), a combination of field studies, short discussions with students and a study of similar solutions was used.

As the prototype was intended to be used by students on campus, a focus area was the time students spent in between classes. Thus, a natural first step of the process of specifying the context of use was to talk to students about their habits during breaks. In addition, digital play was the theme in the course TPD4126-Prototyping av interaktive media, spring 2019. Thus, several suggestions and solutions were available for analysis. Based on their reported success, the research team focused on a selection of solutions. Their elements and success factors were discussed in relation to placement and the students' behavior. Furthermore, potential locations for placing a playful interaction were investigated. Considering the size of the existing solutions discussed, a few hotspots were selected and observed. The traffic and walking patterns of the people in the area was sketched on paper. A combination of the data gathered using these methods provided the basis the basis for the defined context of use.

4.3.2 Specify User Requirements

Identifying and specifying requirements is often considered a time-consuming process due to e.g. organizational structure and processes (ISO 9241-210:2010, 2010). However, as the interactive installation was intended to serve as a break activity, regardless of the type of student, the first requirements were specified using the context of use. The requirements were meant to serve as a starting point for the development and not as a direct evaluation technique of the solution because the process involved different students, and not a specific group from an organization. The requirements were slightly updated during the iterative development, based on the evaluations of the solutions.

4.3.3 Produce Design Solution

In each iteration, a prototype was created. However, in later iterations, a new prototype could be created using the materials from the previous iteration, only adjusting the code or adding a new element. Each design solution was created within the research team and each member was assigned an area of responsibility, making the development streamlined where it was possible. Before the development of the first prototype, an ideation workshop was conducted. The ideation workshop was twofold. The first part consisted of twenty minutes of sketching with the goal of creating as many ideas as possible. After twenty minutes, all ideas were discussed within the team and some were selected for further development. These were specified and discussed in relation to success factors of similar solution, ease of implementation, and the context of use. Finally, one was selected.

Especially in the first iterations, the principle of just enough prototyping was essential. Just enough prototyping refers to the balance between the resources spent on creating a prototype and the required functionality for exploration of the concepts (Flaherty, 2020). For example, the solution created in the first iteration included as little code as possible, and the materials were of low quality to spend as little resources as possible. However, due to the time constraints, and the need for testing materials, the second iteration involved increasing the complexity of the prototype in terms of size and materials to a level more similar to the final product. Despite this, the prototypes of each iteration, except the final, can be seen as minimum viable products, enabling the research team to gradually improve the concept and solutions based on the feedback given in the last iteration (Liikkanen et al., 2014).

4.3.4 Formative Evaluation

A formative evaluation uses standards or requirements to evaluate e.g., products. The formative evaluation aims to give indications of the gap between the existing solution and the standard, as well as an indication of the work that needs to be done in order to improve it (Taras, 2005). Thus, this is a continuous evaluation technique where the principles from the evaluation is used as a basis for the further development of the aspect evaluated. Baklien (1987) highlights that formative evaluations are most successful when using complete processes where evaluation happens in every step of the process. Therefore, the formative evaluation technique was suitable for the continuous evaluation of the prototypes created in each iteration of the user-centered design process.

When designing a new version of the prototype, the formative evaluation of the last prototype was used as basis for the new proposed solution. Thus, considering the evaluation technique, each iteration was conducted the same way. However, depending on the complexity of the prototype used in each iteration, the structure of the user-evaluation varied. In the first iteration when the prototype lacked functionality for automatic registration of user input, a wizard of oz test was necessary. A wizard of oz test allows for efficient evaluation of a variety of prototypes in the early design phases, without needing to complete the application or product being tested (Li et al., 2007). When the complexity of the prototype increased, a wizard of oz test was no longer suitable, as user input was registered by the prototype.

When evaluating the prototype against the requirements, semi-structured interviews and observations were used. However, these were not analyzed in detail, but used as a basis for the formative evaluation. For each iteration, requirements were specified, and it was decided which aspects of the prototype that should be considered.

4.4 Summative Assessment of Prototype

This phase focused on the last step of the user centered cycle, evaluation of the prototype. However, the evaluation was not conducted to examine whether the prototype should be considered a finished product, but to conduct an evaluation of the project. A summative assessment is defined as “a judgment which encapsulates all the evidence up to a given point” (Taras, 2005, p. 468). Thus, a summative assessment was used to concur the viewpoints and give guidelines encapsulating all aspects found when evaluating the prototype with users.

4.4.1 Data Collection Methods

When conducting a user-centered evaluation, several data gathering methods can be appropriate depending on the context and type of solution (ISO 9241-210:2010, 2010). To be able to give a summative assessment, collecting data from different resources enabling accuracy was important. Triangulation is an approach used when combining several methods such as data collection approaches or theoretical perspectives (Thurmond, 2001). A triangulation was considered advantageous because it enable looking at a case from different viewpoints, allowing for greater accuracy. However, a triangulation can generate a lot of data, and thus one need to consider the necessary amount of data to collect (Oates, 2005).

As described in Chapter 1 this research aimed to find design guidelines for playful interactive installations. Oates states “by using more than one data collection method, you are likely to produce more data which can improve the quality of the research ... ”(Oates, 2005, p. 37). In order to increase the validity of the guidelines and the overall research produced, a method triangulation considering several data collection approaches was an important aspect of the research design.

There exist two widely used approaches for data collection, the qualitative approach and the quantitative approach. The two approaches differ both in data generation methods, and types of findings. When using a quantitative approach, numerical data which can be categorized and measured is usually collected. This allows for a presentation of findings, using graphs or statistics. A widely used quantitative data collection method, is scale surveys, generating graphs and numbers from the overall average (Tjora, 2012). A qualitative approach collects non-measurable data which to a greater extent focuses on understanding, rather than explaining (Tjora, 2012). Thus, qualitative approaches are widely used to discover patterns in usage or to create guidelines.

The data collection consisted of surveys, observations, interviews and log data from the prototype. Thus, both quantitative and qualitative methods were used. According to Thurmond "The use of both quantitative and qualitative strategies in the same study is a viable option to obtain complementary findings and to strengthen research results" (Thurmond, 2001, p. 257).

Observations

Observation is a data collection technique used to discover what people actually do, rather than what they report they did, and is widely used in several research projects. In user-centered design, it is especially common because of its ability to provide insight in the actual use of the product being evaluated, and increase the efficiency of the process (Sy, 2007). Observations can range from highly systematic observations with pre-defined events and a narrow focus on specific fields, to so called 'fly on the wall' observations where anything is observed (Oates, 2005). For this research, systematic observations were most relevant as the goal was to observe the usage of known events within a relatively short time frame.

Semi-Structured Interviews

Real user feedback is a widely common evaluation technique in user-centered design (ISO 9241-210:2010, 2010). Interviews were seen as a low-cost option for collecting real user feedback. Semi-structured interviews was chosen because they allow for changes in the flow of the conversation depending on what the interview objects answer (Oates, 2005). This was especially useful because the interviews had the intention of supplementing the observations and increase the validity of the observed events.

Questionnaire

A questionnaire was considered useful because it allowed for collecting data from a large amount of respondents within short time (Oates, 2005), thus minimizing the time each participant spent. In addition, it was considered an advantageous option for collecting information about the overall satisfaction of the users. In addition, having a closed questionnaire was considered suitable as it collects standardized data, allowing for a quicker analysis and comparison between the answers of the respondents (Oates, 2005). A questionnaire consisting of closed, scale based questions was given to every person evaluating the prototype.

Log Data

When observing users systematically, the observers focused on specific events. Thus, to capture other aspects, like the number of buttons pressed or the duration of the game, log data was used. This was possible due to a component in the prototype logging specific aspects of each game session. This allowed for supplementing the observations with more data, and a comparison of the sessions against each other. Furthermore, it was a low cost option because it required no monitoring or involvement of the research team for data to be collected.

Chapter 5

Designing the Prototype

This chapter describes the iterative design process of a prototype of an interactive installation, hereby referred to as the prototype. Section 5.1 describes the first iteration, Section 5.2 describes the second iteration, Section 5.3 describes the third iteration, and Section 5.4 describes the fourth iteration. Section 5.5 describes the final version of the prototype and its components.

5.1 Iteration 1

5.1.1 Understanding the Context of Use

Students' Break Habits

Using the busiest area at Campus Gløshaugen, Stripa, short interviews with students were conducted. The students were asked about how breaks were spent, why they went out of the classroom, or why they stayed inside. In general, most of the responses from the students were similar, the breaks were used for buying food, going to the toilet, get some fresh air or talk to friends. As for those staying inside, some alone time to e.g. checking social media was important. In general, everyone felt a need to change mindset and get a break from the curriculum.

Existing Solutions

Especially the game Profezzor McSlap was used to understand the behaviors of students in breaks, and the reasoning behind these behaviors. Profezzor McSlap was a game with a narrative of waking sleeping students. Thus, the main goal of the game was to slap falling 'faces' to wake them up. Figure 5.1 shows Profezzor McSlap.

The results of the analysis of the success factors of Profezzor McSlap in relation to the students' break habits were the following:

- The students enjoyed spending their breaks competing with friends, some used it to wake up.
- The students appreciated the short duration of the game because it allowed them to use it in breaks.
- The students found it motivating to punch something because it allowed them to do something they would not have been doing elsewhere.
- Because the game was easy to learn, the more insecure users, normally spending time on their phone, gave it a try.

Figure 5.1: Profezzor McSlap

Identify Possible Locations

As mentioned, several locations were studied. All of them at campus Gløshaugen. However, one location was superior in terms of space, students using the general area, and visibility. Figure 5.2 shows the analysis of the selected location at Realfagbygget U1 at campus Gløshaugen. The location was chosen based on available space and amount of people, as well as space for social interaction around the installation.

Figure 5.2: Traffic mapping of the selected location without and with the hindrance of a potential prototype

Summary

To summarize the different types of students that had been discovered, an overview of the personality types was created. Figure 5.3 describes the personas created to describe the context of use.

Figure 5.3: The personas created to describe the context of use

5.1.2 Specify User Requirements

Using the personas and the selected location, user requirements were specified. This was done by the research team, as the stakeholders of the project were students in general, and not a specified subset of students. To follow a holistic approach where several aspects of the experience with the prototype could be considered, requirements were set to a minimum to avoid emphasis on specific elements. However, some requirements were more important than others. Bradner (1997) has specified keywords that can be used to obtain a precise separation of the importance of requirements. The requirements are marked with *must* or *should* based on their importance.

Normally user requirements are specified in a way that makes them easy to subsequently test to verify if they are fulfilled (ISO 9241-210:2010, 2010). However, considering the context of use, as well as the prototype being used in a summative assessment of spontaneous playful behavior, the requirements were less specific. This was mainly due to the team intending to investigate triggers for playfulness, rather than deciding them prior to the evaluation by requiring components or behavior in the prototype. Less specified requirements allowed for a greater level of adjustments and a wider perspective when designing ideas. However, it was decided that the requirements should be updated in the second iteration when a concept had been tested, and identifying specific requirements was more relevant.

The requirements of the system before the first iteration:

- The installation *must* be used inside, in an open space
- The installation *must* encourage playful behavior

- The installation *must* combine analog and digital elements
- The installation *must* encourage a type of physical activity
- The installation *should* not require experience with similar systems
- A session using the installation *should* have a short duration
- The installation *should* follow common design principles for interaction.
- The user *should* not need to log in before being able to play.

Usually, the user requirements are approved by the stakeholders (ISO 9241-210:2010, 2010). However, as different students were involved throughout the process, the approval of requirements was performed by the research team after discussing with the supervisors.

5.1.3 Produce Design Solution

Concept

When deciding the concept, the research team focused on creating a break activity that gave students that normally spent their time doing something else a reason to be active. Several solutions were sketched, some more realistic than others. The suggestions were evaluated based on the time frame of the project and the playful aspects. When using Profezzor McSlap, students highlighted the fun of punching something and the competition. Most of the concepts included a competitive element, and a construct that could be pushed. Combining the ideas, the team came up with a solution. The basis of the concept was illuminating buttons, needing to be pressed within a predefined time. Thus, the concept could be seen as a type of Wack a Mole game (Tong et al., 2015), using illuminated push buttons instead of Moles. The team had a goal of stimulating playfulness through a meaningful, sensory experience with the buttons, as suggested by Korhonen et al. (2009). However, to achieve an element of physical activity, the team came up with the idea of creating several columns, having buttons in different heights and distances. This could also allow for stimulating the experience of the body as play as described by Mueller et al. (2018), and by avoiding sensors, the users could feel less limited as suggested by Garner et al. (2014).

Design of the Prototype

Based on the main concept, the gameplay was created. After some research on buttons and how to create an experience of illuminated push buttons, the team decided to use LEDrings from Adafruit. To include a competitive aspect, it was decided that points should be awarded if buttons were pressed within time.

To reduce the amount of time spent on creating a prototype, two columns with wooden buttons were created and a LEDring was attached to each button. As wood was used, the buttons did not register input and the LEDs was turned on and off by the research team when a button was pressed. The countdown of buttons using LEDs was created by first configuring all LEDs in the ring to green and gradually turning LEDs off, symbolizing the time was ticking. Thus, the prototype was a minimum viable product, enabling a quick test of the concept, while still allowing for feedback on several aspects of the concept.

Figure 5.4 shows the looks of the first prototype.

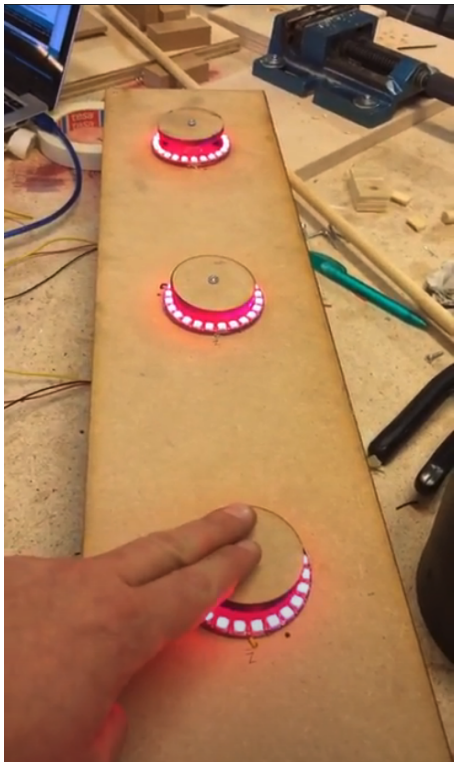


Figure 5.4: The looks of the first prototype

5.1.4 Evaluation

The goal of the first iteration was to investigate the concept by using a low fidelity prototype. Despite the simplicity, the research team had a goal of evaluating several aspects of the prototype to make sure the concept was relevant. The following goals were set before conducting the evaluation:

- Investigate the concept
- Discover gameplay patterns
- Receive feedback on current state and ideas for further development
- Investigate how users interact with the product

Ten students participated in the evaluation of the prototype, and it was conducted in an open space at Campus Gløshaugen.

Results

All participants had fun and found the feeling of pushing buttons satisfying. Thus, the concept was considered successful. However, there were some potential improvements. The feedback given for each element of the prototype is summarized in table 5.1.

Element	Feedback/suggestions
Buttons	• The buttons should not be smaller. • The buttons should change color when less time is left of countdown. • Four buttons were considered a suitable number of buttons on a column. • It would have been nice with several different types of buttons, for example one that gave extra points.
Score	The participants were confused by the score. This was mainly due to confusion of how points were rewarded. The participants' considerations of how points were rewarded: • Increased score if you push a button early. • Increased score if you manage to stay alive for a long time. • Minus points if you do a wrong action.
Level of difficulty	• The participants expected that the speed gradually increased. • The participants expected that it was possible to understand the increase in speed in order to develop a movement pattern.
Dimensions and distances	If the columns were taller and the distance between them were increased, the participants would experience an increased need to move.
Collaboration - Ideas	• The game had to be difficult in order for collaboration to relevant • The participants were also interested in competition, for example regarding pushing a button before an opponent. • Score were an important element for the social aspect.
Sound	All participants agreed that sounds would further improve the game. General suggestion for sounds were sound when pressing buttons or when a goal was achieved.

Table 5.1: Summary of feedback given for each element of the prototype- first iteration

5.2 Iteration 2

5.2.1 Specify User Requirements

Based on the feedback from the first iteration, the following additions to the list of user requirements were made:

- The LEDrings must be integrated in the buttons so it appears as a unit.
- The buttons must give feedback when the time is close to run out
- The difficulty must challenge the user by increasing over time

5.2.2 Develop Design Solution

The second version of the prototype were more complex both in terms of materials and code. The columns created in this iteration are the same as in the finished product. Thus, a lot of work was performed before the prototype was evaluated in this iteration. This was due to the need of a more robust solution to be able to test the functionality to a degree that allowed for feedback on important elements.

New functionality and components created:

- Aluminum plates were cut with help from NTNU
- The number of columns was increased from two to four
- Two new game modes were created, competitive mode and collaborative mode
- A scoreboard was created and configured for all game modes
- Buttons were 3D printed and integrated with LEDrings and microswitches
- Software for several button types were created

Table 5.2 shows the different button types and the effect of pressing them. Table 5.3 describes the essence of the new game modes. Figure 5.5 shows the design of the prototype in iteration 2.

Button	**Effect**
Green pulsing	The game starts when pressed
Green countdown	The user is awarded a point when the button is pressed within time
Red	The user looses points when pressing the red button. The number of deducted points is dependent on the game mode.
Rainbow	Rewards the user with a period where no points are deducted, the number of active buttons increases and points are given for every pressed button. Thus, pressing it gives the user a period where less focus is needed. Only available in single player
Freeze	Rewards the user with a period where the game slows down, the number of active buttons decreases and the user have extra time to press buttons. Only available in single player mode

Table 5.2: The button types used in the game

Game mode	**Description**
Competitive mode	Two users are assigned 2 columns each. The same buttons illuminates for both users, and the quickest to press it is rewarded a point. The game is played in three sets, where the user that reaches nine points first wins.
Collaborative mode	This game mode works as the single player, press buttons within the time and get points. However, the number of columns is four and the users collaborate to reach a common high score.

Table 5.3: The game modes of the prototype.

Figure 5.5: The design of the prototype used in the second iteration

5.2.3 Evaluation

When the prototype was created, an evaluation could be conducted. With a more complex prototype, more detailed feedback could be gathered. The goal of the iteration was to:

- Investigate the two new game modes and find implications of which was the most successful
- Investigate the effect of the scoreboard
- Investigate the new colors and types of buttons
- Further improve the enjoyment by providing feedback on relevant aspects

The prototype was evaluated by 20 students from different study programs, trying out the competitive mode, the collaborative mode and the single player mode based on their own interest. The evaluation was conducted in the same area as in the first iteration, as moving the prototype was time consuming and posed a risk of damaging the prototype.

Results

The improvements made the gameplay experience more valuable. The opinions on the two new game modes varied. However, all respondents seemed to like the competitive mode, and thus it was considered the most successful. In general, the iteration strongly verified that the participants found the concept interesting. A summary of the feedback given from the respondents can be found in Table 5.4.

Element	Feedback
Competitive mode	Every participant considered the mode fun and was willing to try again after playing one round. They also recommended trying to friends. This was considered a sign of the mode being successful.
Collaborative mode	The level of difficulty was not satisfying. The testing area made the space between columns too small for the gameplay to be challenging enough. Thus, the participants considered it boring after a short amount of time.
Single player	All participants were positive to the score allowing them to compete against themselves. The blue freeze button was confusing and not recognized. Also, the game was not challenging enough for the break freeze gave to be needed. The rainbow button was recognized by several of the participants, but did not seem necessary.
Buttons	• It was easy to understand if a button was pressed because the lights extinguished immediately. • The starting button with the pulsing green color was recognizable and made starting a game appealing.
Columns	The height was overall suitable, but some of the tall boys felt the columns were a bit low. However, they pointed out that it could have been affected by the placement of the columns in the test. The case would might have been different if they were attached to the wall.

Table 5.4: Summary of feedback given for each element of the prototype - second iteration

5.3 Iteration 3

5.3.1 Develop Design Solution

After the improvements made in the second iteration, the third iteration had less drastic changes to the prototype. The adjustments were mostly made to increase the usability of the prototype, and improve the gameplay experience. Thus, the design and looks of the prototype was the same as in Figure 5.5.

The following changes were made:

- Sound was implemented
- Possibility to attach columns to existing pillars at Realfagbygget was created
- Adjustments to the difficulty level and speed was made

5.3.2 Evaluation

After the third iteration it was clear that the improvements were successful, and that the number of issues with the prototype began to decrease. All feedback from the iteration can be found in Table 5.5.

At the time, two iterations had included an evaluation of both the competitive and the collaborative mode. Based on the feedback, it was decided that collaborative mode was the less successful. Thus, the single player mode and the competitive mode were selected for further development and research.

Element	Feedback
Competitive mode	With the new placement of the columns on existing poles in Realfagbygget, the mode was considered more exciting because it allowed for a wider range of body movements.
Collaborative mode	The collaborative mode was not considered very successful despite the level of difficulty was increased. It was stated that when playing together with another person, the mindset was on competition rather than collaboration.
Columns	With the possibility to attach the columns to the poles, the height of buttons was increased. This allowed for an increased understanding of the potential to jump and squat while playing in order to reach the buttons faster than the opponent.
Scoreboard	• The participants considered the scoreboard useful and looked at it while playing • The placement of the scoreboard between the participants was considered the best possible option. However, it was only directly visible to one of them because the seven segments were placed on one side of the scoreboards. Thus, the participants stated that it would have been nice if additional seven segments could have shown the score equally on both sides.

Table 5.5: Summary of feedback given for each element of the prototype - third iteration

5.4 Iteration 4

5.4.1 Develop Design Solution

After three iterations the prototype had improved gradually. However, some further adjustments were made in order to make the prototype more robust to ease the process of debugging. Furthermore, the difficulty of the game modes was increased, and confusing elements were removed. The design of the prototype was mostly the same as in the third iteration. However, a new scoreboard and changes in the wiring were visible differences. Figure 5.6 shows the prototype used in the fourth iteration.

The following changes were made:

- The wiring between the Arduino and the columns were separated into to parts, such that each column was detachable from the box holding all wires to the Arduino.
- A new scoreboard enabling the score to be displayed on both sides of the scoreboard was created
- Improvements were made to the existing sound code, enabling it to work throughout the game session, and include new sounds, for example when winning a set.
- The rainbow and freeze buttons used in some iterations were removed due to their functionality being more confusing than useful for the participants after a pilot test. In addition, with increased speed and shorter duration of the total gameplay, neither of them were necessary.
- The intensity of the single player game was increased due to feedback of it being too slow, making the gameplay duration a bit too long for a break. Increased intensity also made people increase their whole-body interaction.

5.4.2 Evaluation

The evaluation of the prototype was successful. The amount of errors was low, and without the disturbing elements of the rainbow and the freeze button, the overall user experience increased. The participants evaluating the installation had no negative remarks and it was decided that the prototype satisfied the requirements.

5.5 The Final Prototype

The prototype created could be described as a digital interactive game based on columns with buttons that was illuminated using LEDrings. The game included three different types of illuminated buttons, presented in Table 5.6. This was possible due to the LEDrings, which could be configured to change color instantly. Different button types were mainly chosen to get variation in the game, to make it exciting to use over time caused by a random game element. In total, the game could be played with four columns all looking the same and having four neutral buttons each. These columns could be attached to existing pillars or mounted to a wall if having the right equipment. This allowed for a variety of distances between the columns. The prototype included two game modes: single player and competitive mode. Two or four of the columns were used depending on the game mode. The structure of the code enables small adjustment to make several new game modes in the future, using a variety of the columns and the button types. Figure 5.6 shows the final prototype in the selected location at Realfagbygget U1 at NTNU.

The overall aim of the prototype was to make people become active by perceiving it as playful and fun to use. In order for the users to move, several parts of the body were activated by the prototype. For example, the distance between columns required the users to use their balance when jumping from side to side. The quick countdown on buttons required coordination, as well as it forced the users to move between the columns in order to reach the buttons in time.

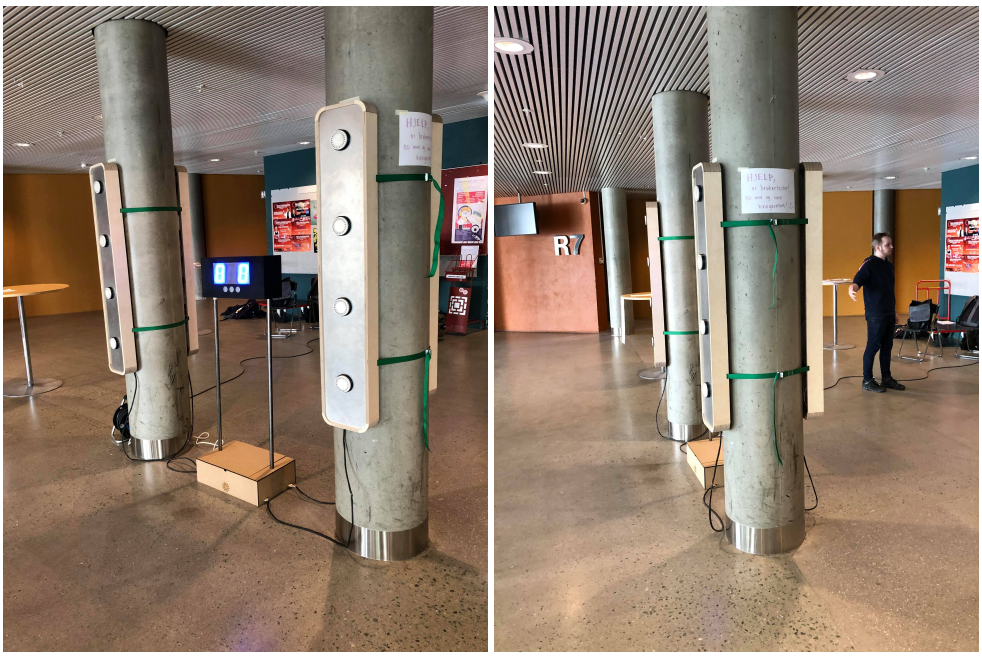


Figure 5.6: The final prototype

Button	Effect
Green pulsing	The game starts when pressed
Green countdown	A point is awarded when the button is pressed within time
Red	The user looses points when pressing the red button. The number of deducted points is dependent on the game mode.

Table 5.6: The button types used in the final prototype

5.5.1 Game Modes

Single Player

In the single player mode, two columns were used. These were placed with a distance of approximately two meters and the goal was to get as many points as possible without losing lives. The user was given three lives in the beginning of the game. To score points, the green countdown buttons needed to be pressed before the end of their countdown, and the red buttons had to be avoided. If a green button was missed, a life was lost, and pressing a red button would deduct five points. The user's score was shown at one side of the scoreboard, using three seven segments. The score was visible on the scoreboard during the game session and was reset when a new game was initiated. In addition to representing the points, the score also had a hidden effect of determining the user's level. The level was not a visible game element for the user but was affecting the number of buttons illuminating at the same time and the difficulty level. This allowed for a natural increase in difficulty, making the game more exhausting the longer you stayed in the game. Thus, the user was challenged continuously the first time. This had the intended effect of making them want to play again, while also making the patterns more recognizable over time so users could improve their skills.

Competitive Mode

The competitive mode aimed at increasing the competitive behavior of users and make the idea of beating friends motivating. The columns were paired, giving each user two columns, with the same distance as in the single player mode. The concept was easy, press the green buttons before the opponent, and avoid the red buttons. Each game consisted of three sets which were won by reaching nine points first. The LED used to show the number of lives in the single player mode was used to display the winner of each set. Three sets allowed for a quick, but intense game, making the users move really quick from side to side in order to reach buttons first. Thus, the competitive game in most cases required an even quicker reaction than the single player game where you only had to worry about reaching the button before the countdown ended.

5.5.2 Location

As mentioned, the design of the columns allowed for a variety of placements of the prototype. The only requirements were enough space and equipment to attach the columns to existing poles or walls. In addition, the prototype was not suitable for outside use, caused by the amount of wires from the Arduinos to the columns and the scoreboard.

In this research, the installation was placed in Realfagbygget U1 at Campus Gløshaugen. This was an open space close to several auditoriums, making it a natural place for students to gather in breaks. In addition, the location included several pillars which made it easy to attach the prototype without taking too much space.

5.5.3 Technology and Architecture

Components

The prototype consisted of several elements that were built using hardware components. The following components were used in the prototype:

- 2 Arduino MEGA 2565
- 1 Arduino UNO
- 1 Arduino AdaFruit Mp3 shield
- 16 Microswithces
- 16 LEDrings
- 2 USB Speakers
- 6 Led diodes
- 4 seven segments

The main logic was controlled with an Arduino MEGA. This was mainly chosen based on previous experiences, as well as the amount of input pins allowing for several buttons and LEDs to be controlled. Compared to Arduino Uno, the Arduino MEGA has more memory, allowing for more complex programs (Arduino, 2020). A diagram of the different components of the prototype is presented in Figure 5.7.

Making the prototype portable was important, and thus, finding a way to protect the wires and Arduinos as well as making the columns detachable was essential. The solution to this was implemented in the scoreboard which is placed in between all columns. The scoreboard box worked as a hub and contained all wires between the Arduinos and the coloumns. The wires between the columns and the Arduino were split in two. One was attached to the Arduino and the inside of the scoreboard, while the connection from the Arduino was connected to the outside of the scoreboard on four places, one for each column. This allowed for attaching and detaching the columns without disconnecting the wires in the Arduino. This protected the important wires to a greater extent and made the prototype easier to move whenever needed.

Buttons

The buttons were designed using Solidworks, a program for innovative design (PLM Group, 2020), and consisted of four parts in PLA, printed using 3D printers. The registration of pressed buttons is done by microswitches, configured as active LOW. Active LOW was chosen on behalf of active HIGH because it allowed for avoiding floating without using transistors. The buttons were wired and connected to the Arduino which continuously registered their value. Each microswitch pin was mapped to the pin of a LEDring, enabling buttons to be chosen and the paired LEDring to illuminate. Figure 5.8 and Figure 5.9 shows the button design and a technical drawing of the buttons.

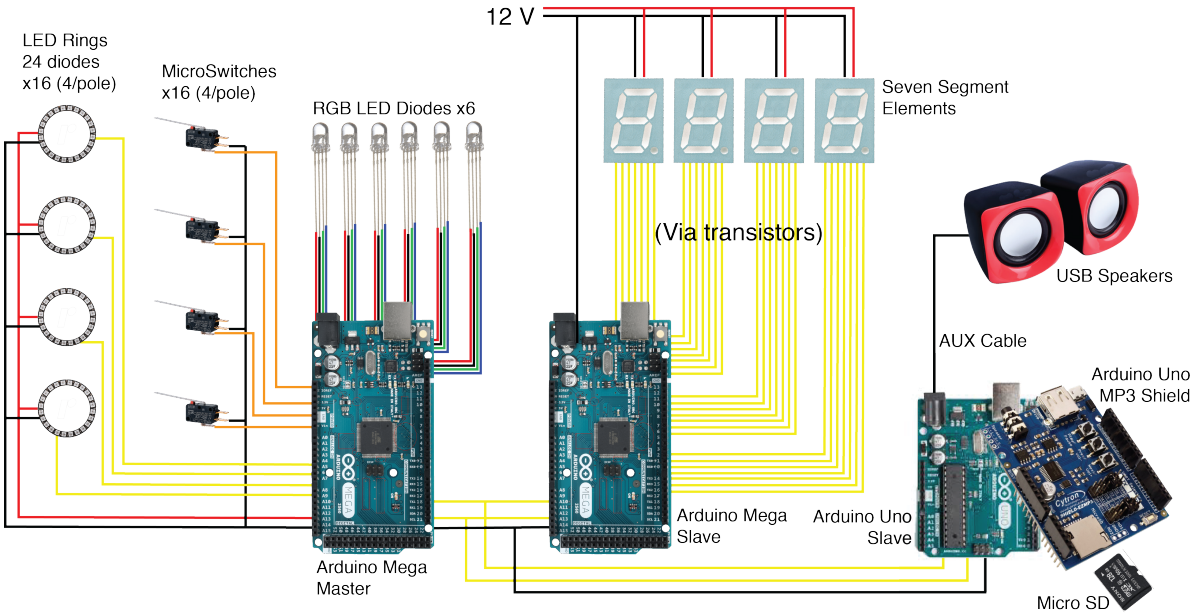


Figure 5.7: The wiring of components in the prototype

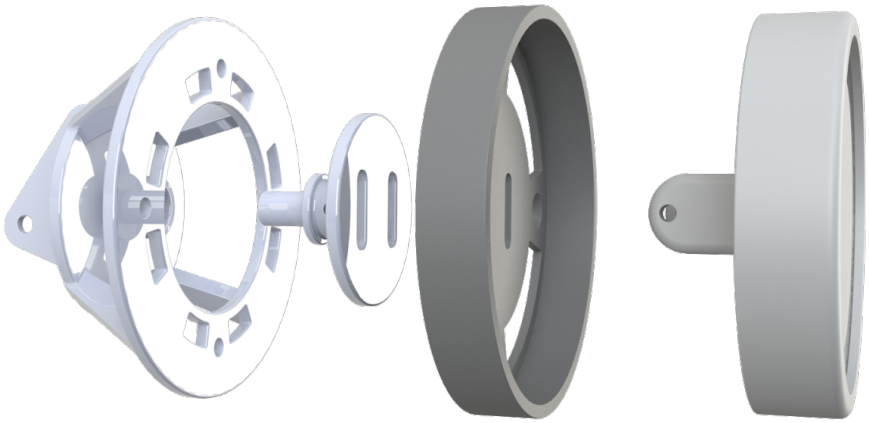


Figure 5.8: The button design

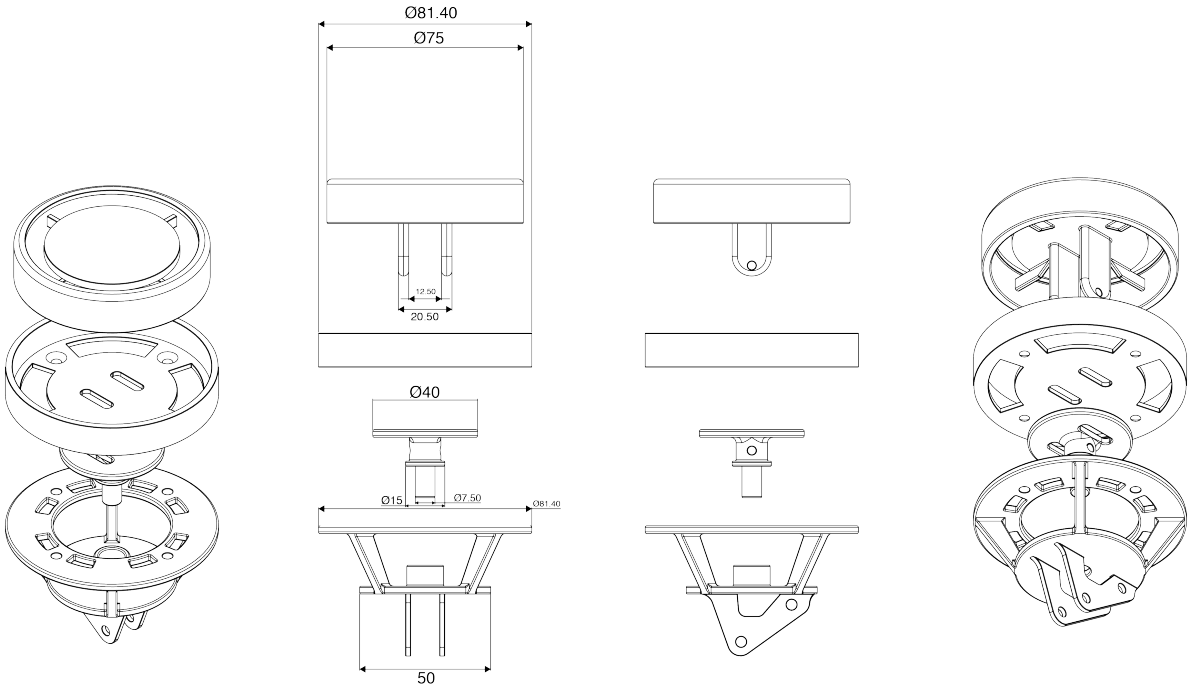


Figure 5.9: Technical drawing of the buttons

Sound

The sound was controlled by an Arduino Uno with an Mp3 shield from AdaFruit (Adafruit, 2020). Sound was not considered the most important element of the game, but was included to provide auditory feedback and give an indication of the outcome of the actions performed by the user. Making the sounds short and recognizable was considered important as the gameplay moves fast. Thus, avoiding that the sounds became a distracting element was central. The sounds included in the game were:

- Sound when pressing a green, correct button
- Sound when pressing a red, negative button
- Sound when starting the game to indicate the correct time of start.
- Sound when losing the game

Communication Between Arduinos

The three Arduinos were communicating through the master-slave library called Wire (Arduino, 2019). The library is an implementation of the I2l bus connection between Arduinos where one Arduino is serving the role as master and another one as slave. For the purpose of the game, this was useful in order to be able to handle both score and sound simultaneously. Seven segments require 24 input pins in total and to keep the code and wiring of components as clean as possible, separating the different elements of the game on three Arduinos was a natural choice. This also enabled faster improvement and changes to the code as one could change the sound code and upload it without affecting the master code controlling the game.

Chapter 6

Summative Assessment of Prototype

This chapter describes the summative assessment of the prototype. The assessment of the prototype was conducted using data gathered from a field experiment where the prototype was evaluated. Section 6.1 describes the experimental design, and Section 6.2 describes how the data was analyzed in order to conduct the assessment.

6.1 Experimental Design

6.1.1 Experimental Set Up

Physical Setting

As described in Chapter 5, the selected location for the prototype was an open area between lecture halls at campus Gløshaugen. Thus, the prototype was evaluated in a realistic setting. Figure 6.1 shows the physical set up, and the location where the experiment was conducted. The prototype became an eye catcher as it could be seen from the entrance of several lecture halls and from a collaborative study area.

Participants

The prototype was evaluated by 114 participants, with the sample containing 59.6% male and 40.4% female participants. The participants tried different game modes depending on the day they participated. Table 6.1 shows the number of participants evaluating each game mode. Table 6.2 shows the number of participants involved in each data collection technique.

The participants were students being in the area at the time of the evaluation. Some were recruited by being asked by the research team if they wanted to try, while other participants took the initiative themselves by asking if they could try. Thus, the shyer and more quiet personality types, described in the personas in Section 4.3.1, were included by being invited to try.

Single player	Competitive	Total
57	57	114

Table 6.1: Number of participants evaluating each game mode

Figure 6.1: Physical set up

Data collection technique	Number of recruited participants
Observation	114
Interview	20
Survey	114
Logs from prototype	90

Table 6.2: Number of recruited participants in each data collection approach

6.1.2 Procedure

The procedure consisted of four general steps: (1) Introduction and briefing, (2) Use of prototype, (3) Interviews, (4) Debriefing and questionnaire. Every participant was involved in at least three of the steps, as interviews were not conducted with every participant. Figure 6.2 summarizes the procedure of the assessment and shows where data was collected.

(1): Introduction and Briefing

When a participant agreed to try, either by volunteering or after being asked, an introduction to the purpose of the experiment was given. Furthermore, consent to data collection had to be given. Thus, every participant had to read and fill out the consent form. The form included information about the purpose of the experiment and described how the data would be handled. A member of the research team was also available if the participant had any questions regarding the consent form or the project in general. Because only Norwegian students participated, the information and consent form was given in Norwegian. The complete consent form can be found in Appendix A.

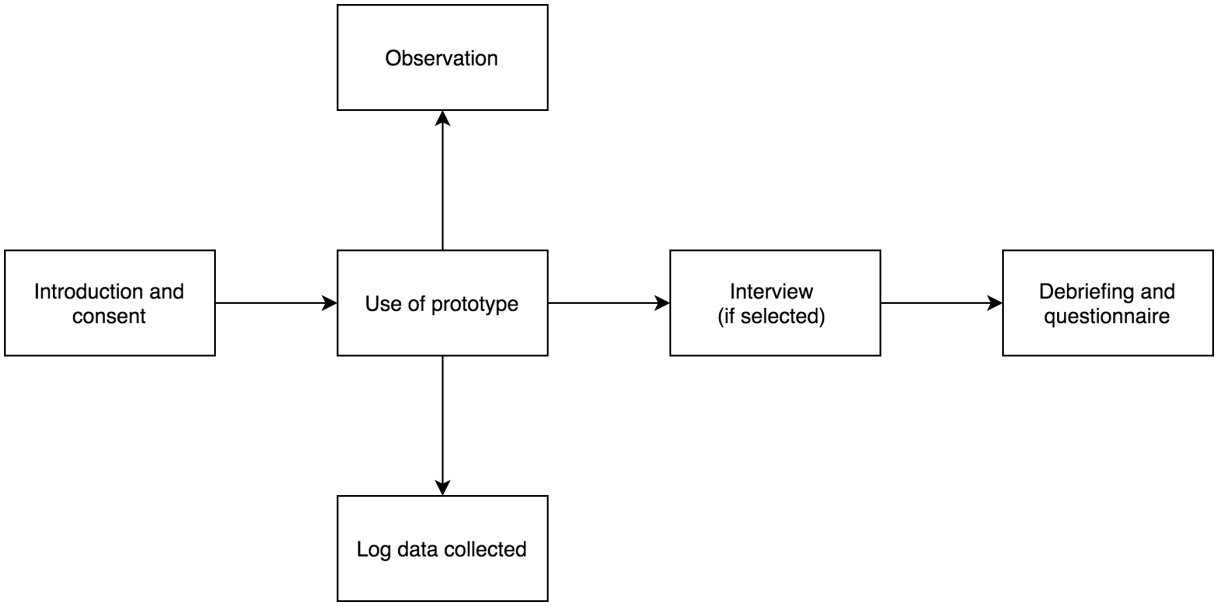


Figure 6.2: The procedure of the assessment

When the consent form was filled out, randomly selected participants were asked to participate in a short interview after using the prototype. Every participant was also informed that a questionnaire had to be filled out before they left the area. This was done to ensure no one left without participating in all relevant data collection techniques.

(2): Use of Prototype

Before using the prototype, the participants were given a short introduction of how to use it by a member of the research team, and any questions the participants had were answered. The participants were then allowed to use the prototype and begin whenever they felt comfortable.

The participants were observed while using the prototype, and the prototype logged data about the game session. Unless an unforeseen event like a crash occurred the participants were not disturbed.

(3): Interviews

If a participant was selected for an interview, a member of the research team gave a short introduction to the contents of the interview and described the procedure. The interviews were held in an area adjacent to the prototype to avoid the participant spending too much time and enable communication within the research team despite an interview being conducted.

(4): Debriefing and Questionnaire

After using the prototype, most of the participants felt the need to talk a bit about their experience. In addition, several participants had questions about the components and how the prototype was built. Thus, a member of the research team was present to discuss with the participants and to answer any questions. Before leaving, the participants were asked to fill out the questionnaire.

6.1.3 Methods

The following subsection contains descriptions of how the data was collected using the different methods in the triangulation, described in Chapter 4.

Observation

As mentioned, 114 observations were conducted. For each observation, two observers were present taking notes and observing the participants. In addition, video recording was used for every observation. This allowed the observers to focus on the participants and reduced the amount of field notes. Because the observations were structured, as described in Section 4.4, observation schemes were used. This made the field notes from each observation identical and ensured personal influence on the observations was avoided. The observation schemes can be found in Appendix C.

Oates (2005) describes variations of presence of the observer during the research. In this case, it was essential that the participants were aware of the observation, both in terms of the privacy declaration given to each participant, and the interviews held after trying the prototype. The observation can thus be defined as an overt observation where the observer took no active role in the usage and were a complete observer (Oates, 2005).

Semi-Structured Interviews

After observing the participants, interviews were conducted with a selection of the participants to get insight in the reasoning behind different actions and in-depth opinions on aspects of the experience. The reasoning behind the number of conducted interviews was that the research team estimated 20 participants enough to get valuable insight while avoiding spending resources on generating a vast amount of unused data. The interview objects were randomly selected before they had tried the prototype to avoid biased decisions and errors in the validity.

Before evaluating the prototype, an interview guide was created. This included information about situations during the interview and the order of specific events. In addition, it included an overview of categories and questions to ask the participant. However, as the interviews were semi-structured, the guide served as a basis for the structure of the interviews and included main themes and questions that were relevant to ask. The further contents and order of the themes in the interviews were dependent on the conversation and the participants' statements. The complete interview guide can be found in Appendix B.

The sketched questions in the interview guide were organized into eight categories based on the themes the research team indented to investigate. The categories and a description of why they are included are presented in Table 6.3.

Examples of open question asked:

- Can you describe your impression of the game?
- Were there any particular elements you found motivating?
- How did you feel after playing?

Each interview lasted for approximately 10 minutes, with some exceptions depending on the answers given and the direction of the conversation. To lower the threshold for participating, the interviews were held in Norwegian due to only Norwegian students participating in the study. Each interview was audio recorded to make sure the interviewer could focus on the answers given directly instead of spending time making sure the notes were correct. The interviews were transcribed and analyzed, as described in Section 6.2.

Category	To investigate
Impression of the game	What the main impressions of the game were, and the reasoning behind them.
Comprehension	Which aspects that confused or aided the participants. Specifically focusing on elements that contributed to playfulness or decreased motivation.
Experience	If experience with similar installations influenced the willingness to try or the comprehension.
Feelings/playfulness	Which elements that contributed to playfulness and positive feelings.
Physical activity	The participants' considerations on the amount of physical activity.
Motivation	Which factors that was motivating the participant before, during and after use.
Competition	How the competition impacted the participants.
Social surroundings	How the placement of the prototype influenced the motivation and playfulness, especially considering audience and pressure.

Table 6.3: The main categories of questions asked in the interviews

Questionnaire

To make sure participants responded to the questionnaire, it was filled out on paper before leaving the area. To enable several people responding to the questionnaire at the same time, it was self-administered, and the researchers did not speak with the respondents while it was filled out. However, a disadvantage of questionnaires is that closed questions can cause frustration (Oates, 2005). Thus, a member of the research team was available for assistance to ensure the participants were aware help was available if needed. To reduce the time spent on the questionnaire, it was kept short, only consisting of thirteen questions. Each question was connected to one of the categories used in the interview and presented in Table 6.3. Thus, a comparison between the interviews and the questionnaire was possible, and each participant's opinion on the most significant aspects of the prototype could be collected. Furthermore, having several questions mapped to the same category allowed for collecting data about the participants' attitudes and opinions, without relying on one question (Oppenheim, 2000), thus increasing the validity. The participants were asked to rate how different factors influenced their enjoyment and rate their opinions to different statement using a five point Likert scale. The complete questionnaire can be found in appendix D.

Log Data From Prototype

Using a SD card reader on the master Arduino, the research team was able to log different aspects of each session. The logged data was:

- The duration of the session
- The score (single player)
- The results of each set (competitive)
- Average response time
- Fastest response time (including the number of the button and the time of the event)
- Slowest response time
- Amount of times each specific button type were pressed

This data was mainly used to capture unique aspects of the play session, such as if a participant had a way faster response time or if some types of participants pressed several red buttons. Thus, the data was not used directly, but as a supplement to the other data collected, and to verify the statements of the participants.

6.2 Data Analysis

This section presents the methods used to analyze the data. Different approaches are used based on the method of the triangulation.

6.2.1 Interview Analysis

Interviews often generate a vast amount of data and the analysis becomes a time consuming process. Thus, tools and methods for a more agile coding process exist. The coding was conducted using NVivo, a software framework for organizing and analyzing data (QSR International, 2020). The process from data collection to analyzed interviews required following a set of defined steps: (1) Collection of data, (2) Transcription of files, (3) Initial coding using NVivo, (4) Restructuring codes, and (5) Combining codes between researchers and (6) Analysis.

The steps were inspired by the introduction to coding in qualitative data analysis by Saldana (2009). In addition, inspiration was taken from a process defined by Ose (2016). Ose presents a method using excel and word. Thus, using NVivo, made some of the step specifically designed for moving data between word and excel irrelevant. However, the collection of data, description of transcripts and sorting of data were relevant for this thesis.

Collection of Data

As described in Section 6.1, semi-structured interviews were conducted with twenty of the participants. All interviews were recorded to ensure all relevant information was captured. Every interview was conducted right after using the prototype and took place at a separate table at the same location. The interview objects were randomly selected, but it was made sure that their backgrounds, heights and genders were diverse to ensure homogeneity in the data set.

Transcription of Files

Using the audio recordings, all interviews were transcribed. In the transcribed file, quotes from the interviewer were marked with an “I” as proposed by Ose (2016), and quotes from the interviewee were marked with a “T” for test person. When transcribing, irrelevant information such as noise and comments on situations happening around the interview were removed from the file. In addition, the end of the interview such as saying thank you, was removed. Thus, only the interview questions and other relevant conversations about the prototype were included. Each transcription was saved in a separate word file. An example of a part of transcribed file can be seen in Figure 6.3. Note that the translation to English, given blue color, is performed only for the purpose of giving an example. The original transcribed files did not include a translation of quotes.

I: Nå står jo den her, er det noen andre steder du tenker at det kunne vært egnet å ha en sånn her type installasjon?
I: Per now it is placed here, is there any other places you would consider it relevant to have an installation like this?
T: Hvis det er snakk om på en måte aktivisering av folk så tenker jeg jo steder der man passerer, altså der man, altså på vei til et sted at det kunne vært en sånn tilfeldig aktivitet du tar deg tid til.
T: If it is to activate people, I think places you pass, when you are on your way to something, where it could be a random activity you take your time to do, could be relevant.
I: Ja
I: Yes
T: Så i en trapp eller gang eller, ja, et sted der du bare oppdager den på en måte
T: So, in stairs, or a hallway or something, a place where you just discover it.

Figure 6.3: Example of transcribed part of interview

Coding

The transcribed files were imported into a NVivo project. Two researchers form the team performed the coding of the files separately in personal projects. Most of the codes used in qualitative research are summaries or essence capturing of a piece of information. When one word is used to describe a piece of text it is called a descriptive code (Saldana, 2009). Descriptive codes were used throughout the coding process. Thus, when performing the initial coding, the transcribed files were studied, and pieces of text were coded using a descriptive word. This process gave a lot of codes. However, several of the codes were repeatedly used throughout the coding process. As the team used NVivo, each code was assigned as a top-level node, and the relevant piece of text was dragged into the node. Figure 6.4 shows the coding of a piece of text coded at "Availability", because the users speaks about availability as an important initiative to use the prototype. Thus, "Availability" was chosen as the descriptive code.

Figure 6.4: Example of coding of text

Clustering

Saldana (2009, p. 8) states "coding is a cyclical act. Rarely is the first cycle of coding data perfectly attempted". Looking at the nodes in NVivo after conducting the first cycle of coding, it became apparent that some of the codes were very similar, and that some of the information from the files should be moved to a more descriptive code. Thus, in the second phase, the nodes and their assigned content were reorganized, and the total amount of codes was reduced with nearly 50 percent. This process can be seen as codifying which enables data to be "segregated, grouped, regrouped and re linked in order to consolidate meaning and explanation" (Grbich, 2007, p. 21). When codifying, the use of descriptive codes made it easier to find patterns and hierarchies. Thus, some nodes were changed from top-level nodes to sub-nodes of a new category. Figure 6.5 shows the assigned top-level nodes, and the sub-nodes of the top-level node "Social surroundings".

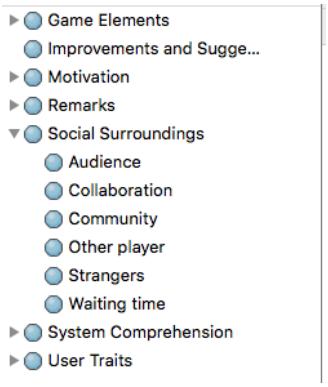


Figure 6.5: Clustered codes in NVivo

Combining and Merging Codes

Codes are based on the researcher's perception of the text and are thus highly influenced by the persons that performs the coding (Saldana, 2009). Therefore, two researchers from the team performed the coding separately to ensure an increased validity of the codes. However, as the licensed version of NVivo did not support collaborative projects, the coding was performed in two separate projects. When using the coding in the analysis, common codes and structure were seen important and thus, the researcher's codes were combined. This was done by evaluating and discussing each of the nodes and their content. As suggested by Kathleen and Mclellan-Lemal (2008), the team had developed a standard procedure for the coding, making the format of the different coding projects similar. The result of the merging of the codes was choosing one of the researchers' codes and make adjustment to the project according to the results of the discussion. This was possible due to a high degree of similarity in the coding caused by the common procedure. In addition, one was declared responsible for the editing of the common coding project. This was done to decrease the possibility for errors caused by several researchers trying to edit the same things.

Analysis

When coding in a cyclic process with codifying as the basis, patterns and categories emerge along the way. Thus, as the data is restructured and organized, it can also be seen as a part of the analysis (Saldana, 2009). When analyzing the data from the interviews, the codes and categories were used to find emerging themes and concepts, thus making the abstraction level higher. The themes and concept created the foundation for the theories presented as results.

6.2.2 Observation Analysis

Video Analysis

As described in Section 6.1, all observations were video recorded. When analyzing videos, every recording was studied. Whenever a notable situation was found, a screenshot was taken. The screenshots from a video were put into chronological order and placed in a table, along with the name of the file and a comment on the situations that were illustrated in the pictures. This allowed for a structured highlight of relevant findings, which could be used together with the rest of the data set.

Observations Schemes Analysis

In addition to the recording of the observations, observation schemes were used. These can be found in Appendix C. The observation schemes were mainly used to highlight important aspects of the observations, which later could be found in the videos. But it was also used to find patterns in the observations like:

- The amount of observations where the participants laughed during play.
- The number of participants reported as too tall for the height of the columns to be suitable.

Thus, the observations were used both as quantitative and qualitative data.

6.2.3 Questionnaire Analysis

As the questionnaire was filled out on paper, the first step of the process was to manually move the answers from paper to a digital solution. This was saved separately from the rest of the data set, thus removing the personal and confidential connection between the questionnaire and the rest of the data set. Having the answers online also eased the process of performing calculations on the data.

In addition, the scale based questions ranged from “strongly agree” to “strongly disagree”, and “not at all” to “very much”, meaning their values had to be translated to numbers in order for calculations to be possible. This was done by giving the statements values from 1 to 5. One cannot be completely sure that the distance between the statements is equal to the distance between the numbers, but as the questionnaire was a part of a triangulation and not the foundation for all of the results, it was chosen not to spend resources on translating the scale based on the participants’ opinions on the distances.

Distribution

Because the questionnaire consisted of closed questions, the distribution between answers could easily be calculated using percentage. This gave a quick summary of the answers given to a question and made it easy to compare the distribution in answers for single player vs. competitive mode.

Mean

The mean (average) of each answer was calculated to find indications of the common tendencies in the data set. Mean is one of three techniques for describing the central tendency of data sets (Oates, 2005). The mean was calculated using the numbers mapped to each point on the Likert scale.

Log Data Analysis

The log data was collected in almost every session throughout the evaluation, also when the research team was debugging. Thus, there existed some errors in the data, leading to the need of data cleansing before the analysis could be conducted. Data cleansing refers to “detecting and removing errors and inconsistencies from data in order to improve the quality of data” (Rahm and Do, 2000, p. 3). The competitive sessions and the single player sessions were treated differently due to variances in the log data, and to be able to find specific patterns for the game modes. However, when calculating aspects that were relevant for both modes, the complete data set was included.

Chapter 7

Results

The results reflects considerations that were identified when coding the interviews, going through the video material and the answers to the questionnaire. It became apparent that the playfulness and willingness to play were dependent on the users motivation which could be separated into three stages: (1) Motivation to start playing, (2) Motivation to stay in game, and (3) Motivation to re-play. First, some general findings on playfulness will be presented in Section 7.1, before the different stages of motivation will be examined in Section 7.2, 7.3 and 7.4. Section 7.5 presents demotivating aspects. When using statements from the interviews, a translation to English is performed and an ID is assigned to the statement. Along with the ID, the number of the transcript the statement belongs to is provided on the format (ID, number of transcript). Appendix E includes the original transcripts that were used in the results, where the original version of the presented statements are marked with blue text and an ID that corresponds with the ID used on the translated statements presented in this chapter. In addition, some figures have red marks. This is done to highlight specific elements and has been performed by the research team.

7.1 Factors Contributing to Playfulness

In the questionnaire, the participants stated their opinion on nine statements. Table 7.2 shows the rounded distribution of answers to each point on the scale. Table 7.1 shows the distribution of answers to the question "To what degree did the factors listed below contribute to your enjoyment of the game?" in addition to the mean value for each question.

	Not at all	**A little**	**Some**	**A lot**	**Very much**	**No answer**	**Mean**
Collaboration	36,8	8,8	7	4,4	1,8	41,2	1,73
Competition	0	1,8	6,1	28	60,5	3,5	4,53
Sound	24,6	26,3	24,6	14	2,6	7,9	2,39
Lights	0	4,4	17,5	41,2	34,2	2,6	4,08
Body movement	0	2,6	8,8	50	36,8	1,8	4,23
Intensity	0,9	2,6	14,9	32, 5	47,4	1,8	4,25
Concentration requirement	0	0,9	4,4	33,3	59,6	1,8	4,54
Unordinary activity	0	4,4	14,9	29,8	49,1	1,8	4,26

Table 7.1: The distribution of answers to factors contributing to enjoyment in percentage, including the mean value

	Totally Disagree	Somewhat Disagree	Neither disagree or agree	Somewhat Agree	Totally Agree	No answer
I found the duration of the game to be too short	22,8	24,6	26,3	21,9	4,4	0
I found the intensity of the game too high	36,8	29,8	26,3	4,4	1,8	0,9
I found the level of difficulty suitable	1,8	4,4	5,2	32,5	56,1	0
I feel like I got to use my body	0,9	0,9	1,8	28	68,4	0
I would categorize this game as play	0,9	1,8	2,6	21,9	71,9	0,9
The sound effects made the game easier to understand	14	15,8	35,1	16,7	12,3	6,1
The lights made the game easier to understand	1,8	0,9	5,2	18,4	72,8	0,9
I consider this activity fun	0,9	0	0	15,8	83,3	0
I would recommend this to friends	0,9	0	5,3	22,8	71	0

Table 7.2: The distribution of answers to statements in percentage

Overall, the participants' opinions were positive, and almost every factor had a high mean, indicating that the participants were enjoying themselves while playing. Despite this, the participants' answers regarding the sound effects were more contradicting. This could be due to some of the participants having to play without sound because of technical problems with the prototype. However, it was apparent that most of the participants were too focused on the game to notice the sounds while playing. During the interviews it was stated:

(ID 1, 008) *"Like, there was some sound, but it zoned out"* and

(ID 2, 018) *"I really did not notice that much sound effects, but I guess it would have made me understand that I lost a life, but I do not feel it had that much effect on me."*

Thus, the participants seemed to forget their surroundings while playing and therefore did not notice the sound effects. This could however also be due to lacking sound effects for important events like losing a life.

7.2 Motivation to Start Playing

7.2.1 The Availability of a Physical Break Activity

Table 7.1 shows that "unordinary activity" has a high mean and is contributing to the participants' enjoyment. This was also apparent when looking at the students taking a break from the lectures. Because the prototype was placed right outside their lecture hall, it was noticeable and available, making them interested in trying to get a break from studying. A participant talked about the importance of getting a break from the sedentary lectures and described the area as a place where usually no activities were available:

(ID 3, 016) *"The breaks are often used to do something, to avoid being sedentary. I usually go for a walk because normally nothing is happening here."*

Thus, the motivation to play was to get a break, and the participant was motivated by the availability of an activity it usually could not perform. The motivation to get a break by doing something physical was also highlighted by several other participants when asked about their opinions on the prototype, or what motivated them to try:

(ID 4, 008) *"Between lectures it would have been super fun!"*

(ID 5, 016) *"That it included a lot of body movement and it looked fun."*

(ID 6, 018) *"I think it might be that it is physical play"*

However, the motivation to get a break by being able to do something fun, is dependent on the availability:

(ID 7, 020) *"At least it must be available, but at this time one have lectures at several places, so if it was just standing one place it would have been.. I would not have walked over there just to use it, kind of."*

(ID 8, 002) *"No, just available in some way, then I believe I could have used it when I take a trip in the area"*

These statements indicated positive attitudes towards usage, but the motivation seemed to fade if the user had to spend time walking to the installation.

7.2.2 Curiosity by Inviting Design and Competitive Concept

How curiosity was triggered by the looks of the prototype, particularly the scoreboard that indicated a competitive element, was especially obvious when a big amount of people arrived at the same time. Students could state "Oh, is it a competition?", obviously triggered by the thought of beating their friends. This was also highlighted in an interview where a participant talked about the possibility to compete as the motivation to try:

(ID 9, 002) *"It was really fun, like, a quick game between two players which is like.., competition is always fun, and you can do it in the break"*

In addition, the look of the prototype was remarked:

(ID 10, 014) *"The design is cool and it seemed really proper and complete. And i considered the concept really fun."*

(ID 11, 016) *"It looks proper and complete, it looks professional in a way."*

Thus, the professional look, making the prototype seem safe and proper, in combination with a triggering concept made several become curious and eager to try.

7.2.3 Social Surroundings

Audience

The effect of the presence of an audience was discovered in the observations and the interviews. Especially when playing in competitive mode, an audience was present to cheer for the participants. However, the participants' opinions on having an audience present were contradicting. While some did not care and were completely focused on the game, some hesitated to play when an audience was present. The

difference between male and female participants, were especially explicit. While most of the male participants had a relaxed attitude to the audience, a lower number of the female participants chose to play when an audience was present and several pointed out that the audience made them less comfortable. An interviewed female participant stated:

(ID 12, 021) *"I am maybe not the type to point my nose out and play, so it [an audience] would probably have had effect on my willingness to play."*

and when asked if she meant negatively effected

(ID 13, 021) *"Yes, if a lot of people were present."*

On the other hand, a male participant stated

(ID 14, 018) *"It would have been uncomfortable if I was really bad at it. And therefore, I would have been more focused. Thus, there is most definitely an audience factor, meaning you do not want to make a fool out of yourself."*

Thus, one can argue that the influence of the audience in several cases was dependent on whether the participant was a male or a female. While the female participants felt uncomfortable and considered the audience intimidating, the male participants felt an increased focus and a more competitive behavior. Despite this, there were male participants considering the audience uncomfortable as well. Nonetheless, it was a minor group compared to the number of male participants triggered positively by it.

However, both the male and female participants feeling the audience was uncomfortable pointed out that the degree to which it was uncomfortable was dependent on the type of audience. For example, a male participant stated:

(ID 15, 009) *"If they are random people at an airport, I would not bother too much, but if it is a crowd of people I know hanging around, it could have been different."*

Similarly, a female stated:

(ID 16, 021) *"If it had been placed at Stripa [Busy hall at campus] where people pass by and are going somewhere, it does not affect me."*

Thus, both participants were less affected by an audience consisting of strangers than an audience with familiar faces. This can be due to the competitive aspect, and a lower degree of performance anxiety when the audience is unknown.

Playing with Strangers

In most of the cases where the competitive mode was evaluated, both participants knew each other and showed up together as team. When observing passing students looking at the installation, it was also apparent that people were less comfortable showing up alone. Comparing the competitive mode, with the single player mode, less of the participants playing single player showed up in groups, thus indicating that people were less insecure when they could play alone instead of playing with a stranger. However, the participants' attitudes towards playing with strangers were contradicting. While some were positive to the possibility:

(ID 17, 002) *"I think it could have been completely fine. I don't think I would mind considering it is not a personal game, kind of, other than you being aware of that there is another person standing there trying to catch these lights before you."*

(ID 18, 009) *"I do not think it would have changed too much, considering I really only focused on my own game."*

(ID 19, 002) *"To be fair, to compete or play games is always fun, it would have been like playing online PlayStation against a stranger, so I do not think I would mind playing against a stranger."*

Others found the idea of playing against a stranger less appealing:

(ID 20, 008) *"I would possibly not be able to let myself go to the same degree. Like, I would have to hide my competitive instinct a bit."*

(ID 21, 009) *"I don't feel the need to compete against people I don't know."*

Thus, it was apparent that to make people play against a stranger, they had to be confident enough and be sure that is was accepted. It was also suggested that this had to be the normal behavior to make people to do it:

(ID 22, 012) *"Then I think something must be done in order to make it clear that this is the thing kind of. Maybe like try this game against a stranger, but yes, because, I could have done it, but then it has be someone else who are willing as well"*

This corresponds with the statements of the more skeptical participants stating they did not feel the need to do it because they had the option of playing with a friend.

The Honey Pot Effect

In addition to curiosity and availability, seeing other people play had impact on the participants' motivation. The amount of people showing up varied with the time of the day, but also on a day to day basis. However, it became apparent that people were more likely to try when they had seen someone do it. As mentioned in Section 3.2, the honey pot effect is defined as how people easier interact with an installation after passively looking at people using it. An interviewed participant stated:

(ID 23, 013) *"Yes, one can see that there is a big amount of people here that are eager to try it in the break. Like everyone, we watched it in a group and all my friends stated they were eager to try, and I said, do it!"*

In addition, Figure 7.1 illustrates a person in the audience that watched a game passively. A few minutes later she was the next participant. This indicates that the threshold is lowered if the participant is aware of what he or she should be expecting.

Figure 7.1: Person in the audience passively looking at a game

7.3 Motivation to Stay in Game

7.3.1 A Mental Focus Caused by a Varied Game

As described in Chapter 5, different buttons were used, and the game varied in speed and amount of buttons at the same time. This stimulated a mental focus, because most of the buttons needed to be pressed within a short time frame, while some buttons had to be avoided. In Table 7.1 one can see that the requirement for concentration had a high mean and was an important contributor to the participants' enjoyment.

The concentration and mental focus among participants were visible during the play sessions. Table 7.3 shows a focused participant that was on his way to press the red button, but halfway up realized it was red and pulled back his hand quickly before leaning towards reaching the green button instead. This led to laughter and a "oooh close" to indicate he almost made a mistake.

	When a red button illuminates, the participant quickly reacts and are on his way to press it. However, he realizes that he should avoid it, withdraws the hand and move to reach the green button.

Table 7.3: A mental focus enabling the participant to quickly react when realizing he is about to press a red button

The focus in the situation described was also discussed in the interviews. It was remarked that the responsiveness, needed to handle the variation in the game, led to a mental focus that was appreciated:

(ID 24, 016) *"It [the game] is testing your responsiveness, so it was challenging, especially when the number of buttons started to increase."*

(ID 25, 019) *"I liked that one had to focus or.. that it is one thing you are focusing on, and that is where the green buttons are."*

(ID 26, 017) *"You get to use the body and the mind at the same time."*

(ID 27, 014) *"The fact that there is a countdown on the buttons, or the time you have, that was fun. Because it gave an impression of the short amount of time you had left."*

(ID 28, 020) *"Fun with the intro, I liked it. And that the game is gradually becoming more and more difficult, that is cool."*

7.3.2 Competition

Competition as a motivational factor was mentioned in every interview and was a clear contributor to enjoyment by its mean of 4,53. Especially before a game, and in between sets, one could see participants focusing on the competitive aspect and preparing their opponent to lose, as seen in Figure 7.2.

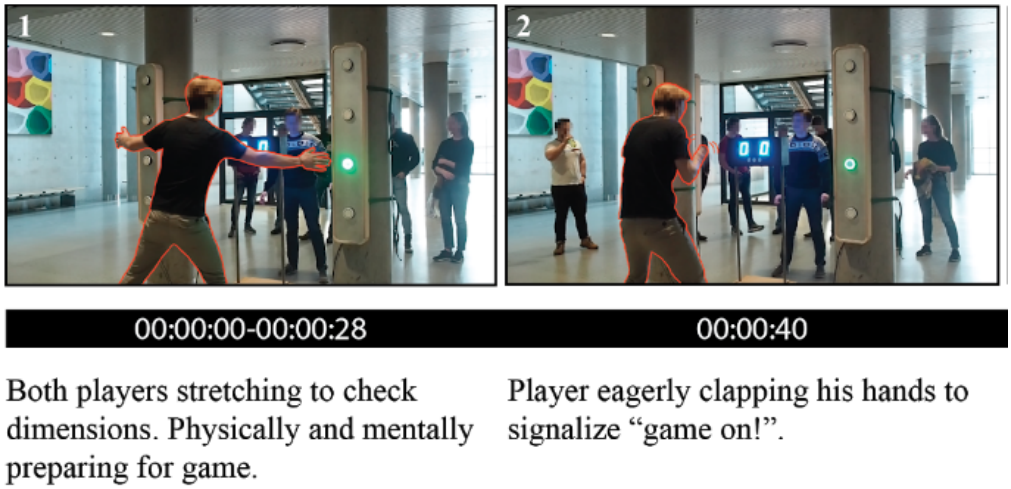


Figure 7.2: Participant preparing the opponent to lose

The participants were also highlighting the importance of competition in various ways:

(ID 29, 016) *“I guess it was to win, to beat the person I was playing against. I don’t really know, when you have some competitive instinct you focus on taking the buttons before him/her”*

(ID 30, 013) *“High high [value of having a score], really, the competitive instinct is always important.”*

(ID 31, 013) *“You are rewarded for your work, it is like painting a wall and see the color change, when you play you are awarded with points.”*

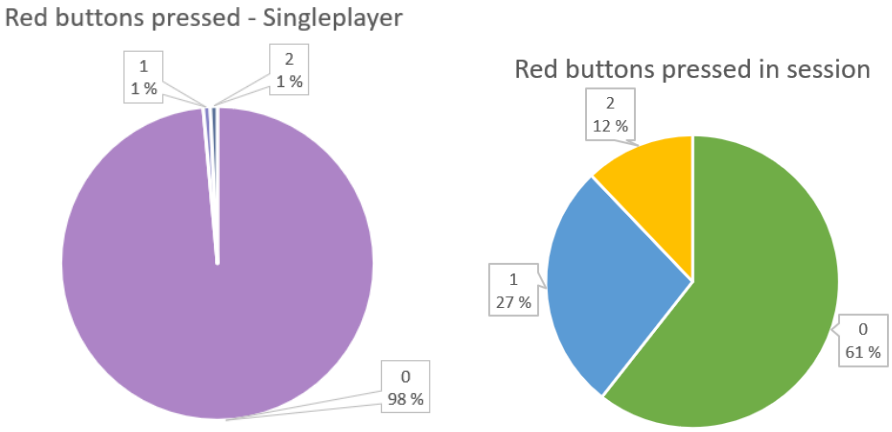
(ID 32, 019) *“That[competition] is a motivation.”*

(ID 33, 010) *“Because I want to win. Very simple!”*

Therefore, it is apparent that competition was an important element for the participants during the use of the prototype, and a motivation to try again to beat their friends or their score. Some of the participants that used the installation in a break, came back in the next break to beat their own score or their friends once more. Thus, they were motivated by the competitive aspect of the game.

7.3.3 Differences Between Game Modes

Figure 7.4 illustrates the calculated mean for each of the factors contributing to enjoyment for single player and competitive mode respectively. Most of the answers provided were similar or very close. This indicates that the participants were satisfied with the perceived level of difficulty and the intensity regardless of game mode and thus that the motivation to play was less influenced by the game mode. The biggest difference in values were found for collaboration and competition. Collaboration was, as expected, very low for the single player mode, as the excepted level of collaboration was low for a one-player game. However, the enjoyment of competition was higher for the competitive mode. In addition, 50% of the participants playing single player answered “very much” to the effect of competition on enjoyment, compared to the 72.5% for competitive mode. The slightly higher competitive instinct was also visible in the log data, where it was found that the number of participants pressing one or two red buttons was remarkably higher for competitive mode compared to the single player mode, as shown in Figure 7.3a and 7.3b. This could indicate that the participants were equally motivated to play, but that competition was a higher contributor to the motivation among the participants playing in competitive mode.



(a) Distribution of amount of times red buttons are pressed- Single Player Mode

(b) Distribution of amount of times red buttons are pressed- Competitive Mode

Figure 7.3: Comparison of the amount of pressed red buttons between the game modes

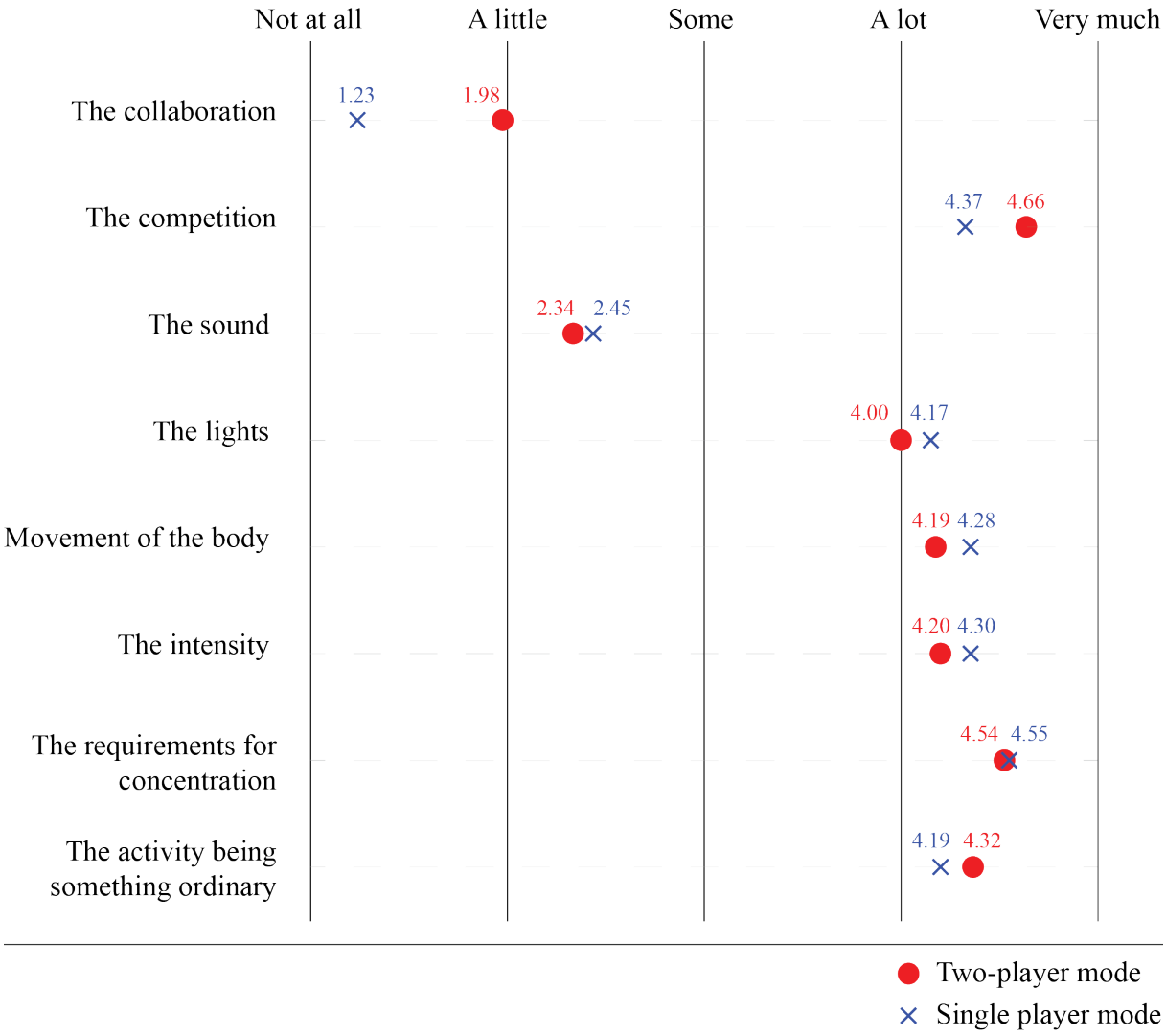


Figure 7.4: The distribution of answers to factors contributing to enjoyment based on game mode

7.4 Motivation to Re-Play

7.4.1 Playfulness

The results indicated that most of the participants categorized the game as play and a fun activity to perform. This was also apparent in the interviews where it was stated: (ID 34, 009) *"I considered these types of games were fun. I become really enganged"* and (ID 35, 016) *"It was really fun"* .

Also, the amount of laughter and joking while playing, as shown in Figure 7.5, clearly indicated that the participants had fun. Furthermore, participants that considered the game as play and fun often recommended the activity to their friends, as well as returning to try again. Thus, one can say the experienced playfulness led to positive feelings, which contributed to a willingness to play again.

Figure 7.5: Two Participants clearly enjoyed while playing

7.4.2 Perception of Physical Activity

Finding the right intensity for the game was a challenge. The different play styles, heights, and the length of the participants' arms led to different levels of physical activity. The taller participants often stayed longer in the game, thus leading to a less intense, but longer period of time with physical activity compared to the intense, but shorter experience for shorter participants, that had to jump and run more. As seen in Figure 7.6, the effort needed to reach the highest buttons was remarkably higher for the shorter girl. Despite this, a high amount of the participants answered "totally agree" or "somewhat agree" to the statement of the difficulty level being suitable. In addition, it did not seem like the shorter participants were affected by it. However, it was pointed out by the taller participants that height difference could give an unfair advantage:

(ID 36, 010) *"It is maybe unfair when there is a height difference"*

Thus, it seemed to be noticed by the taller participants, feeling they had an advantage, rather than the shorter participants feeling it was unfair.

Looking at the answers to the statement "I felt like I got to use my body" in Figure 7.2, 96.4% of the participants answered "totally agree" or "somewhat agree". In addition, Figure 7.1 describes body movement and intensity as very important factors for the enjoyment in the game, with means of 4,23 and 4,25. This clearly indicates that the physical activity contributed positively to the experience.

Figure 7.6: A short girl playing against a taller boy

This was also apparent in the observations. The most intense battles between two opponents, or against a previous score, led to the most laughter, celebration and obvious positive experiences, despite having the highest level of physical activity. Figure 7.7a and 7.7b shows a celebration and an intense reaction after two tight battles. In addition, the shorter participants smiled even more when they were able to jump, as shown in Figure 7.7c.

(a) An angry participant kicking in frustration after being very close to record

(b) A participant celebrating the victory after an intense battle

(c) A participant jumping voluntarily and laughing

Figure 7.7: Intense reactions during play sessions

The positive experiences of the pace and the required focus was also highlighted in the interviews:

(ID 37, 017) *"I do think it's fun and yes, you can feel it pumping a bit and become a bit more vigilant."*

(ID 38, 008) *"Since I was active I... got to use my energy and then I got more energy from being active as well. So a positive affect!"*

(ID 39, 010) *"It was fun with those.. If you're not tall enough and need to jump a bit, that was fun!"*

(ID 40, 016) *"You don't notice that you are being active, but afterwards you suddenly realize that wow I actually had to catch my breath."*

However, it was pointed out that if the game had required more physical activity it would have been less appealing, as one want to avoid to sweat when going back to class. With the amount of physical activity already being diverse, considering shorter participants jumping on purpose, and participants choosing to have less intense battles, this opinion would vary from participant to participant. Thus, one can find indications that the possibility to choose to move a lot, but also be able to move less, was successful.

7.4.3 Game Strategies

The participants had several different game strategies in order to perform as good as possible. Table 7.4 and 7.5, and Figure 7.8 illustrates three different strategies. One can see that the height of the participant to some degree was influencing the chosen strategy. However, most of the of the participants could not stretch their arms and reach both sides, thus the strategy of standing in the middle with bent knees in order to quickly move sideways was used a lot.

Figure 7.8: The strategy of a tall boy using side sight and stretched arms to reach buttons

	A short participant is jumping a lot from the beginning, this leads to a high level of activity early in the game.
	The jumping gives the participant an active tactic where the whole body is continuously used to move quickly from side to side in order to discover new buttons.
	Because of the height of the participant, even button number two from the top requires a small jump and a stretch.

Table 7.4: The jumping strategy of a shorter girl

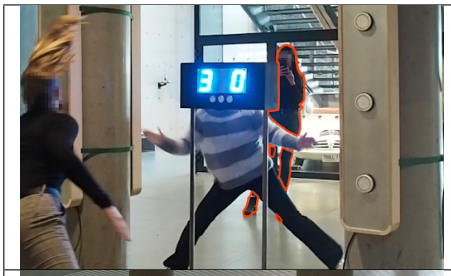
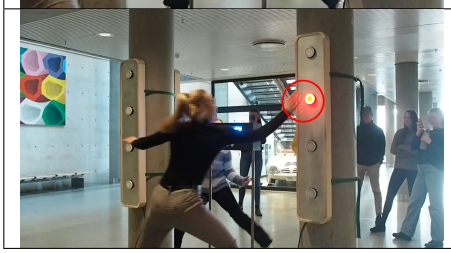
	A tall girl chooses another strategy where she uses the space between the columns as a base area and continuously bend her knees to move from side to side in a squat position.
	She uses the speed from the last squat to quickly move to the other side, however this leads to less focus on the actual color of the button, and red is pressed.

Table 7.5: The strategy of a tall girl using squats to balance quick movement from side to side

The strategic development was visible among the participants that had enough time to try the game several times. Between games, one could see them discuss what to do to achieve a higher score next time. In addition, the audience of a game often discussed tactics as shown in Figure 7.9.

Figure 7.9: Passerby discussing game strategics when seeing installation

Strategic development was highlighted as an interesting aspect of the game making the participants think and feel less limited. Participants stated:

(ID 41, 013) *"I think it was, it was on me, but I didn't get which strategy to go for before I started, but I discovered it gradually."*

(ID 42, 017) *"If your goal is to perform as best as possible, there exist several strategies you can go for."*

(ID 43, 018) *"That one starts with a simple technique and there are no rules set by the game. Your only job is to press the buttons. I discovered that it was a lot better to take a step back, in distance from the wall to improve the side sight, to discover the green signals instead of moving the head to improve the sight. And that is.. Showing that you can develop a technique while you are doing it and that.. You are developing a technique, you get the game. You are not limited by a keyboard. And I think that is cool "*

7.5 Demotivating Aspects

7.5.1 Confusion When Experiencing a New Event

Despite good feedback, some participants experienced confusion while playing. Most of the reported confusion was repetitive and could be seen in relation to specific events such as confusion at beginning of game, when a new set started, or when the red button appeared for the first time. Table 7.6 describes the two most common events of confusion.

These events were also mentioned during the interviews, where participants stated:

(ID 44, 002) *"We were informed that the level of difficulty would increase, but the fact that two buttons illuminated at the same time, I was not ready for that. "*

(ID 45, 010) *"I guess, in the heat of the moment, you don not think that minus points are an option, when you haven't been informed."*

Thus, the participants were confused because of what they described as lacking information and a heat of the moment experience. In addition, some participants playing single player pointed at losing a life as a confusing event:

(ID 46, 018) *"So I guess it wasn't that easy to understand that the three LEDs symbolized lives. Really, I did not understand it before I started to talk about it now."*

	Stretches to check dimensions before the game starts.
	Confusion when starting second set: “Åja hæ, skal vi trykke på to samtidig?” “Oh, are we pressing two at the same time?”
	Red button: “Hva er rød og grønn, hva er forskjellen?” “What is red and green and what is the difference?”

Table 7.6: Confusion in play session

(ID 47, 013) *“But, then I didn’t understand how one lost lives, because I believed I had taken all the green buttons, but they went.., like I saw the amount of lights decreasing , but I understood that they were counting down a bit too late.”*

7.5.2 Color Blindness

Another exception from the overall trend of positive feedback was the experience for colorblind participants. When asked if there where anything they liked less, a participant stated:

(ID 48, 007) *“Yes, that is was different colors”*

The colorblind participants were a minority, but had issues spotting the difference between the red and the green buttons. This was especially apparent in the competitive mode were pressing the buttons before the other participant led to less focus, than when playing single player. A colorblind participant playing single player mode said it was difficult, but that the fact that the red button did not count down made it easier, especially since the speed was lower in the beginning. Thus, when the speed and competitive instinct was high, the difference between the red and the green button was less explicit than the research team had planned for.

Chapter 8

Discussion

The results presented in Chapter 7 indicated that several factors influenced the perceived playfulness and the users' willingness to visit an installation promoting physical activity. These results will be discussed in relation to the background literature and related work, in order to answer the research question presented in Chapter 1.

At the end of each section, a design guideline is presented based on the discussed theme. When the guidelines are presented, a structure created based on the guidelines by Mueller and Isbister (2014) is used. The following design guidelines will be presented: (1) Consider the value of competitive elements, (2) Develop less predictable events to ensure variation and strategic development, (3) Ensure the solution is physically robust, (4) Enable users to adjust the pace, (5) Mind the social context when placing the installation.

8.1 Consider the Value of Competitive Elements

The competition highly contributed to the enjoyment of the participants in both competitive mode and single player mode. Using the definition of play and playfulness, the perceived enjoyment can be seen as an important indicator of playfulness, due to the enjoyment contributing to a positive mood and the well-being of the user. The competition was a definitive motivator for both starting to play and keep playing to beat a score or a friend. This can be linked to the intense reactions to winning or losing in games where the competitive instinct was high. To win, or gain a high score, meant something to the participants, and it affected their mood despite the reward being nothing else than honor. The feeling of being rewarded can be seen in relation to the the principle motivating feedback, developed by Bekker et al. (2010). In this case, the score given when reaching a button first, or within time, was motivating the participants to stay in the game and was increasing their perceived playfulness.

In addition, when asked about their opinions on the game, the participants often mentioned the words fun and competition together. Several of the participants also focused on the competition as a challenge they enjoyed. This corresponds with the PLEX framework, presenting competition and challenge as categories that enable playfulness in users (Korhonen et al., 2009). However, the type of challenge or competition seemed to be less important. The comparison of the two game modes indicated that the single player mode had a lower amount of participants perceiving the competition as the most important motivation, but the mean was still high. Furthermore, the interviews and observations made it apparent that the score was a strong motivation for several participants, because it allowed them to compete against themselves or against friends by knowing their score. This indicates that the positive attitudes towards

competition differed between the game modes, but that both types made the participants experience playfulness. While the competitive mode made the participant playful by giving an eager to win or beat the opponent, playing with a score motivated the participant to continuous improvement and new records, and whenever a goal was reached, a good feeling was experienced. The playful experiences also differed in the case of a losing a game. While the perceived enjoyment was higher when beating a friend, the effect of losing against a friend could contribute more negatively to the playfulness, compared to not reaching a high score. Thus, the single player mode seemed to have fewer extreme differences, and thus a more consistent feeling of playfulness.

Design guideline 1: *Consider the value of competitive elements*

Rationale

The participants of this study highlighted the competitive aspect as the most important contributor to playfulness. The competitive aspect was stimulated through several elements like a score, two-player and challenges in the gameplay. Thus, given this context of use, the playfulness was highly influenced by the competitive element of the prototype and it was a clear contributor to positive emotions and feelings given a win or a tight game. In addition, the competitive aspect was central for making the participants return to use the prototype again. However, the traits of the interactive installation and the chosen concept will influence whether or not it is suitable to include a competitive element. Therefore, the value of a competitive aspect should be considered given the context where the installation should be used.

Strategies for Designers

- Use the context of use and the end users to consider how the users will be influenced by a competitive element.
- If competition is suitable: Make the users able to compete against friends or a score, by designing either a two-player game or a game including competition against a score.
- Challenge the user in order to give them a reason to beat themselves to stimulate a need for assertion.

8.2 Develop Less Predictable Events to Ensure Variation and Strategic Development

In the findings, several game strategies were presented. Strategic development was highlighted as a positive and fun aspect because the game had few limitations and thus, finding a suitable strategy was considered a positive challenge. This can be seen as exploration and discovery as included in the Pleasures of Play by Costello and Edmonds (2007) and the PLEX framework by Korhonen et al. (2009). Despite that the authors define the two concepts a bit different, the essence is the same: discovering something new or unfamiliar, and exploring a new situation can stimulate playful experiences. Thus, when the participants were provided with a prototype where strategic development was possible, they could discover the possibilities and explore different strategies, trying to find the best way to reach a high score. The eager to find the best strategy was a central contributor to the motivation to re-play, which was considered an advantage. Furthermore, different strategies can allow for supporting different movement patterns depending on the user's abilities when seen in relation to the moving body lens, as described by Mueller et al. (2011). This was apparent in the results of this research, like when taller players chose to squat to reach buttons fast. In addition, strategic development and exploration can be compared to the concept of open-ended play, developed by Bekker et al. (2010). Despite that the game had a clear goal,

either to beat an opponent or to get a high score, the way of reaching it was left to the participants to decide. Thus, the few limitations served as an enabler for strategic development and could be seen as a kind of open-ended play that was stimulating playfulness in participants.

The discovery and exploration were further emphasized in the findings indicating the importance of a varied game, making the participants gain a mental focus to face challenges. This could for example be when experiencing a new event such as a red button or two buttons at the same time, both stimulating quick reactions in the user. However, the experience of new events and different types of buttons were making some participants confused and demotivated, as described in Section 7.5. While some participants found the experience of new events challenging and considered it a positive impact on their playfulness, others found it frustrating, thus not stimulating the playfulness. The principles difficulty (Costello and Edmonds, 2007) and challenge (Korhonen et al., 2009) can be seen in relation to the experience of a new event. For the participants enjoying the challenge, a skill to handle it may have been developed in time to succeed in the challenging situation. On the other hand, the participants that did not manage to develop the skills to face the challenge, pointed at it as something negative. Thus, it can be seen both as a contributor to playfulness, and as an element that decreased the playfulness. This can be compared to the study on Flow Steps by De Valk et al. (2012) where the principles from the PLEX framework were found to be very useful in some stages of play, while being less useful in other stages. The stages are not directly relevant here, but the effect of principles in different situations is. How the participants faced the challenge, and their ability to develop skills created two different scenarios, where challenge either contributed to a playful experience, or a frustrating one. However, the amount of participants finding the challenge demotivating were outnumbered by the participants finding it motivating and fun.

Design guideline 2: *Develop less predictable events to ensure variation and strategic development*

Rationale

When less predictable events were included, the participants faced challenges that contributed to a mental focus. This positively impacted the perceived playfulness. Furthermore, the possibilities for diversity in movement patterns led to several strategies and enabled discovery and exploration. However, the amount of challenge must be considered to ensure most of the users are able to face the challenge and are motivated by it.

Strategies for Designers

- Create variation by introducing new elements gradually.
- Enable several ways to interact with the installation, to ensure that strategic development and diversity in movements are possible.
- Ensure the challenge is simple enough for most types of users to be able to handle it. If making the challenge too complex, it can decrease the motivation, and thus influence the playfulness negatively.

8.3 Ensure the Solution is Physically Robust

While most of the participants were enjoyed and had a playful experience, some experienced crashes and technical issues during the use of the prototype. The findings indicated that this had minor influence on the results. However, the observations made it apparent that for some, this highly influenced the playfulness. In general, the people that experienced a crash laughed less and seemed less enjoyed compared to those without technical issues. Furthermore a participant that experienced a crash stated:

(ID 49, 010) *"that it doesn't crash"* when asked about contributing factors to continued use of the prototype. Based on the definitions on play and playfulness presented in Chapter 2, avoiding crashes can be essential to ensure a positive mood and provide a feeling of doing something fun. When the system crashes, users can become frustrated, thus ruining the playfulness. Therefore, ensuring the robustness of the interactive installations is necessary to stimulate continuous playfulness in users and avoid negative feelings.

Design guideline 3: *Ensure the solution is physically robust*

Rationale

Playfulness is highly influenced by the mood of the user. Whenever a crash or an unforeseen event interrupts the user's experience, the playfulness is affected. When designing interactive installations aimed at promoting playfulness, errors frustrating the users should be avoided when possible. In addition, the installation should be easy to get started with, to avoid frustrated users trying to figure out how to get started. Additionally, this can lower the threshold for users to try the installation. However, the effort put into ensuring physical robustness should reflect how rough the treatment of the installation will be. An installation aiming at the users punching its elements will require more robustness than an installation that will not be touched. On the other hand, the robustness of digital components can be just as important regardless of treatment.

Strategies for Designers

- Consider the use of the installation, and choose materials that suits the treatment from users
- Ensure the digital components are protected and stand alone to enable quick changes without affecting the complete installation.
- Create possibilities for error detection, enabling the installation to reboot when an error occurs.

8.4 Enable Users to Adjust the Pace

The positive reactions to the level of physical activity and the findings of movement contributing to enjoyment among the participants indicated that the playfulness was stimulated by the ability to move. This correlates with the findings of Byrne et al. (2016) that found users to be playful when they could control the opponents balance by being active. In addition, the good mood of the participants that wanted to use the prototype one more time was described as a result of being active and doing something out of the ordinary. This corresponds with the research on physical activity and playfulness indicating that being playful makes the user perform an activity longer (Proyer et al., 2018). However, the observations indicated diverse levels of physical activity that was dependent on factors such as the choice of strategy or the height of the participant. Despite this, the participants found the amount of physical activity suitable. Thus, the prototype made it possible for the participants to control the pace and choose a level they were comfortable with. In other words, the participants that wanted to avoid getting sweaty could do that, while those who needed to jump around and laugh, could choose that option. This correlates with the responding body lens described by Mueller et al. (2011). When designing for different levels of physical activity, the lens can be supported by making the users adjust their movements according to their body's response. Considering the context of use and the personas presented in Section 5.1, this can be seen as an important aspect because it allows for supporting a diversity of moods and attitudes in users as well as triggering playfulness in those who are less energetic.

The optional level of physical activity can be discussed in relation to the concept of experiencing the body as play. Mueller et al. (2018) consider the body from two perspectives, studying the connection between

emotions and feelings in users. Using this in the context of performing physical activity, one can say that the perception of the experience will be dependent on the user's feelings and emotions towards the activity. Therefore, when the participants of this research were provided with a prototype that allowed for several types of movement and interaction patterns, the chances of stimulating experiences that triggered the feeling of using the body as play, in several types of users, were increased. Furthermore, this can be compared to the findings of Garner et al. (2013), describing how an increased level of movement and enjoyment was achieved when the user felt less restricted. When the participants of this research found the limitations to be few, several movement patterns were discovered, and playfulness was stimulated. This indicates that the reason the participants had different levels of activity, yet being equally satisfied, were due to their experience of the body as play and an increased enjoyment caused by a less restricted experience.

Design guideline 4: *Enable users to adjust the pace*

Rationale

When promoting spontaneous physical activity, the users must perceive the effort as a valuable use of time. Depending on the mood, the required effort can be perceived as either simple or exhausting. Thus, by making the users able to choose their movement patterns and adjust the pace by choosing to jump or stretch, a higher amount of users can perceive the effort needed to interact with the installation as suitable. Furthermore, those wanting to jump and get a bit exhausted will have the possibility because several movement patterns are supported.

Strategies for Designers

- Create interaction patterns allowing for several ways to solve a task depending on the amount of effort the participant is willing to give, thus allowing for different movement patterns and efforts.
- Increase the pace gradually to let the users control the length of the game by adjusting their effort during the session.

8.5 Mind the Social Context When Placing the Installation

In Chapter 2, the findings of Consolvo et al. (2006) and Ståhl et al. (2001) on the bond between physical activity and social interaction were presented. When comparing these findings to the findings of this research one can see similar connections. The participants were highly influenced by the ability to play together, or against each other, and several were influenced by the social context. However, the opinions on how the social context influenced the decision to interact with the installation were contradicting. This indicated that finding a suitable social context is essential for promoting spontaneous physical activity. Akpan et al. (2013) found that maximizing the visibility of the installation and the ability to watch someone use it, were essential elements for making people use an interactive installation. This correlates with this research's findings on the honey pot effect which made several participants try the prototype, and the statements on how the availability of the prototype influenced the willingness to use it. Furthermore, the audience discussed strategies and pushed some participants to perform even better. This can be compared to the findings of Garner et al. (2014) which found the players enjoyment to increase with an active audience. However, while some of the participants in this study found the audience triggering, others refused to try if a big audience was present. This indicates that finding an area where both situations can be supported is important. Several of the participants that hesitated to use the installation with an audience, highlighted that people passing by were less frightening than an audience consisting of people focusing on the prototype. In addition, it was mentioned that the movement patterns of the prototype made it less frightening to perform in front of people. Thus, promoting physical activity in this context

of use, requires movements that are experienced as safe, decreasing the possibility for users to feel they are making a fool of themselves.

Design guideline 5: *Mind the social context when placing the installation*

Rationale

It is evident that the bond between social interaction and physical activity should be supported in order promote physical activity in users. When finding an area that is suitable for an interactive installation where physical activity is involved, several social contexts should be supported to allow for an audience, as well as a shielded experience for the shy users. Finally, allowing for movements that makes the user safe, can contribute to an increased number of users, due to the expectations of failing being lowered.

Strategies for Designers

- Select an area where the installation is visible to ensure the users are aware of the availability of the installation.
- Select a placement that allows for an audience, to ensure the honey pot effect can be stimulated.
- Consider an area where a less visible session is possible if the users are frightened by the audience
- Design for well known movement patterns to lower the expectations of failure.

8.6 Methodological Reflections

The work with this thesis has provided an understanding of the factors influencing playfulness in users and how interactive installations can be designed to promote spontaneous physical activity. This has been achieved by utilizing user-centered design and a method triangulation. Assessing the objectivity, reliability and transferability of research can give indications of the quality of the conducted research (Tjora, 2012). Thus, the three aspects will be assessed to discuss the quality of the research conducted in this thesis.

8.6.1 Objectivity

The design of the prototype and the data collection for the summative assessment of the prototype was conducted as a research team. Most parts of the analysis and interpretation of the findings were conducted alone. As the researchers are part of every step of the research process, it is hard to avoid influencing the results to some degree. However, one can argue that the combination of three different researchers has limited the personal influence as the decisions were formed collaboratively. In addition, the observations were conducted by several researchers, ensuring that situations could be discussed from different point of views. However, in the analysis of the interviews, the researchers' perception of the meaning of the statements highly influenced the assigned codes, and the further analysis resulting in the findings. Thus, it is difficult to maintain the objectivity when conducting this type of work. However, the coding was performed by two different researchers and then combined, thus reducing the possibility of one researcher interpreting the meaning completely different than the intended meaning of the participant. Despite this, different researchers will focus on different aspects, and as the research team worked together over a longer period of time, it is likely to think that the opinions would gradually become similar, reducing the objectivity to a certain extent.

8.6.2 Reliability and Validity

The data in this research was collected using a method triangulation to ensure that the validity of the research increased. In addition, 114 people participated in the study which strengthens the reliability due to the amount of different opinions in the data set. However, there are some aspects that that should be considered:

Twenty interviews were conducted, and despite the research team focusing on including participants with different experiences, one cannot be sure that the amount was sufficient. In addition, the research team is inexperienced, and despite planning for open-ended questions, some closed questions were asked during the interviews. This could have influenced the participants' answers and thus decreased the reliability of some of the statements. Another aspect is that the participants in the research were students studying at the same campus, thus specializing in science subjects. This could potentially have influenced the results as students specializing in other fields were not examined. Furthermore, the researchers were present the whole time and the participants had to give their consent to data collection before trying the prototype. This was a necessary precaution, but could have influenced the way the participants interacted with the prototype, and the amount of people bothering to sign the consent form before trying.

Lastly, the research team experienced some technical issues during the final evaluation. This led to some participants being interrupted while playing, and some played without sound. For most of the participants, the errors were corrected on the spot, and a new game session was initiated and conducted without issues. However, at one point, the sound issues were not possible to fix on the spot, and some participants had to play without sound. Thus, the validity of the findings on the influence of sound when playing was decreased, as it was unavailable for some participants.

8.6.3 Transferability

The conducted research focused on students as the end users and the use of an interactive installation on campus. However, several of the results are compared to previous studies in different settings, indicating that the findings of this research could be generalized and transferred to other contexts. The findings on the influence of the social context on playfulness can be relevant for other projects where attracting people is important. Furthermore, the findings on playfulness and physical activity can be used to develop both applications and interactive installations focusing on promoting physical activity through playfulness.

Chapter 9

Conclusion

This thesis investigated *how we can design playful interactive installations intended to promote spontaneous physical activity*. The aim was to consider interactive installations from a holistic approach, allowing for a discussion of several aspects of playful experiences promoting spontaneous physical activity. By utilizing user-centered design, it was possible to iteratively develop a prototype of an interactive installation and investigate several possible solutions, before choosing the most successful elements. This allowed for a summative assessment, investigating the contributing elements to playfulness and spontaneous physical activity.

The conducted observations and interviews made it apparent that experienced playfulness is individual and that users will value different aspects of an interactive installation. However, when giving the participants the possibility to discover elements and take control of their own experience, support for individual playfulness was achieved. Furthermore, to engage users to utilize an installation, motivation is required. This motivation was found to be separated into three types of motivation: motivation to start playing, motivation to stay in game, and motivation to re-use the installation. The participants' enjoyment of bodily effort and descriptions of a funny experience illustrated that stimulating the participants' playfulness contributed to a positive experience when performing physical activity. Thus, one can conclude that when users perceive the use of an interactive installation as fun, their willingness to spontaneous activity in breaks increase and the need for bodily effort seems to be forgotten.

The results of this research can be summarized in five design guidelines for design of playful interactive installations intended to promote spontaneous physical activity in users:

- Consider the value of competitive elements
- Develop less predictable events to ensure variation and strategic development
- Ensure the solution is physically robust
- Enable users to adjust the pace
- Mind the social context when placing the installation

Further work should aim at examining the guidelines to achieve a higher level of detail in the recommendations. Furthermore, the guidelines were created based on a summative assessment of one prototype conducted within a short time frame. Thus, one cannot be sure whether the findings apply to other installations or how long the found motivational factors to re-play are relevant. The use of the guidelines to develop several types of interactive installations is required to verify the effect and usefulness.

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Appendices

Appendix A

Consent form

Forespørsel om deltakelse i forskningsprosjektet

«DigiPlay: Fysisk aktivitet gjennom lekne interaktive installasjoner»

Bakgrunn og formål Formålet med prosjektet er å få tilbakemelding fra brukere (i hovedsak studenter) på en konkret interaktiv installasjon som har til hensikt å oppmuntre til spontan fysisk aktivitet.

Prosjektet er del av et mastergradsprosjekt ved Institutt for datateknologi og informatikk og Institutt for interaksjonsdesign, NTNU. I studien vil vi ikke evaluere helsegevinst, men kun samle inn tilbakemeldinger fra friske brukere om deres bruksopplevelse av installasjonen, i tillegg til data om ulike måter/strategier å interagere med i installasjonen på.

Du er forespurt om å delta fordi du er i målgruppen.

Hva innebærer deltakelse i studien? Hvis du velger å delta i prosjektet betyr det at du er med på en brukertest av installasjonen som innebærer både en utprøving og et etterfølgende intervju og spørreskjema.

Dine svar fra spørreskjemaet blir registrert på papir og senere elektronisk.

Vi ønsker å kunne gjøre videoopptak av utprøvingen av installasjonen og lydopptak av intervjuet.

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

Hva skjer med informasjonen om deg? Vi vil bare bruke opplysningene om deg til

formålene vi har fortalt om i dette skrivet. Vi behandler opplysningene konfidensielt og i samsvar med personvernregelverket.

Det vil kun være forskere tilknyttet prosjektet som har tilgang til dataene, og ikke noen utover dette, f.eks. din arbeidsgiver.

Navnet og kontaktopplysningene dine vil vi erstatte med en kode som lagres på egen navneliste adskilt fra øvrige data. Datamaterialet (video og lydopptak) vil bli lagret på en forskningsserver på et innelåst rom.

Deltakere i prosjektet vil ikke kunne gjenkjennes i publikasjoner. Her publiseres kun anonymiserte data.

Hva skjer med opplysningene dine når vi avslutter forskningsprosjektet? Prosjektet skal etter planen avsluttes 01.09.2021. Ved prosjektslutt vil datamaterialet bli anonymisert slik at du ikke kan gjenkjennes. Dette gjøres for etterprøvbarhet og eventuell senere forskning.

Studien er meldt til Personvernombudet for forskning, Norsk samfunnsvitenskapelig datatjeneste AS.

Dine rettigheter

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

- innsyn i hvilke personopplysninger som er registrert om deg,
- å få rettet personopplysninger om deg,
- få slettet personopplysninger om deg,
- få utlevert en kopi av dine personopplysninger (dataportabilitet), og
- å sende klage til personvernombudet eller Datatilsynet om behandlingen av dine personopplysninger.

Hva gir oss rett til å behandle personopplysninger om deg?

Vi behandler opplysninger om deg basert på ditt samtykke.

På oppdrag fra NTNU har NSD – Norsk senter for forskningsdata AS vurdert at behandlingen av personopplysninger i dette prosjektet er i samsvar med personvernregelverket. (Ref. Meldeskjema 290860).

Hvor kan jeg finne ut mer? Hvis du har spørsmål til studien, eller ønsker å benytte deg av dine rettigheter til å trekke ditt samtykke, ta kontakt med:

- NTNU ved førsteamanuensis Yngve Dahl ved Institutt for datateknologi og informatikk (yngveda@ntnu.no, mob.: 905 27 892)
- Vårt personvernombud: Thomas Helgesen (thomas.helgesen@ntnu.no)
- NSD – Norsk senter for forskningsdata AS, på epost (personverntjenester@nsd.no) eller telefon: 55 58 21 17.

Med vennlig hilsen

Yngve Dahl (Prosjektansvarlig)

Samtykke til deltakelse i studien

Jeg har mottatt informasjon om studien, og er villig til å delta

---

(Signert av prosjektdeltaker, dato)

Jeg samtykker til å delta i studiet. Jeg samtykker til at personopplysninger kan publiseres/ lagres etter prosjektslutt.

Appendix B

Interview Guide

05.02.2020

Capturing answers: Recording of answers will be done through taking notes and audio recording. This is chosen in order for the interviewer to keep track of highlights rather than the details to capture all relevant aspects. The transcription will make sure all information given is present in the data analysis.

Create a bond with the respondent: The interviewer relies on obtaining useful information form the respondents. However, this will be easier if the respondent is comfortable and feels safe opening up to the interviewer. Making the respondent comfortable will be done by talking to them about casual themes a few minutes before the interview.

Ask questions that lead detailed answers: It is important that you phrase questions in a way that makes the respondents provide detailed answers, rather than simple “Yes” or “No” answers.

Prepare the respondent for the next activity. When finishing a section of the user test, in this case an observation session, and transitioning into the interview, it is important that the interviewer clearly communicates the end of one section and the start of another. This can be done by e.g. thanking the respondent for their efforts in the test, followed by asking if they are ready to answer a few questions about what he/she just experienced.

INTERVIEW
The questions should be phrased in norwegian considering the interviews are conducted with norwegian students. This can ensure that the participants are comfortable during the interview.

1. **Impression of the game/ Inntrykk av spillet:**
   Kan du fortelle litt om førsteinntrykket ditt av spillet?
   Hva syns du om spillet etter å ha spilt det?
   Var det noen ting du likte spesielt godt ved spillet? Hva? Hvilken påvirkning?
   Var det noen ting du ikke likte så godt ved spillet? Hva? Hvilken påvirkning?

2. **Comprehension/ Forståelse.**
   Hvordan syns du det gikk å forstå hvordan spillet fungerer?
   Var det noen spesielle elementer som bidro til at du forstod spillet?
   Var det noe som forvirret deg? Hvis forvirring - effekt på innsats/motivasjon?

3. **Experience/ Erfaring.**
   Har du prøvd noe som ligner på dette før? Hva var det?
   I hvilken grad anser du deg selv som en leken person?

4. **Feelings- Playfulness/ Følelser- Playfulness.**
   Da du kom hit tidligere, før du spilte, hvordan følte du deg da? Hvordan var humøret?
   Hvordan følte du deg når du spilte?
   Kan du si noe om humøret ditt nå i etterkant?
   Bidro spillet til noen endring i humør (eller motivasjon for det du skal etterpå)? Hva kommer det av, tror du?

5. **Physical activity/ Fysisk aktivitet.**
   Hva synes du om mengden bevegelse spillet ga deg?
   Kunne/burde det vært høyere krav om fysisk bevegelse?

6. **Motivation /Motivasjon.**
7. Da du kom hit i sta, fikk du lyst til å spille da du så installasjonen?
   Hva fikk deg til å ønske å spille?
   Når du kom i gang, hva var motiverende i spillet?
   Hva skal til for at du ville brukt denne i hverdagen?
   Evt hva kan gjøre at du ikke har lyst til å bruke den?

   (If competitive/ Hvis competitive)
8. **Collaboration/ Samspill.**
   Hvilken verdi har det for deg å spille sammen med andre?
   Fulgte du mye med på hva den andre spilleren gjorde? Hadde det noen påvirkning på din innsats i spillet?
   Kjenner du personen du spilte mot? Hvis ja, hvordan tror du det ville vært å spille mot en fremmed?
   Tror du spillet kunne fungert som en type icebreaker for å gjøre det lettere å bli kjent med fremmede?

   (If single player/ Hvis single)
9. **Score.**
   Hva tenker du om score i denne typen spill?
   Hadde scoren noen påvirkning på motivasjonen din i spillet?

10. **Social surroundings/ Sosiale omgivelser.**
    Hvilke steder tenker du at denne typen installasjon er egnet for? I hvilke situasjoner ville det være naturlig for deg å oppsøke denne typen installasjon.
    Hvordan tror du kø/ventetid ville påvirket din motivasjon for å bruke spillet?
    Hvordan ville et eventuelt publikum påvirket hvordan du føler deg i spillsituasjoner?

    Give the object a summary of your impressions of their opinions during the interview.

It is useful to have a set of questions on hand, but the interviewer must also be prepared to expand on, or probe, the predetermined questions if needed. This is the essence of qualitative interviews.

End the interview: Deciding when to end an interview may depend on a number of factors. E.g. interviewers may feel that they have exhausted their questions, and that they are no longer getting new information or if the respondent seems tired or has other commitments to attend to. It is good practice for interviewers to summarize the key points that they feel the respondent has provided, because this gives the respondent a final chance to expand or clarify any points. Finally, it is important to thank the respondent for their time and to provide

them with the interviewer's contact details. Depending on circumstances, it may also be worth letting respondents know how they can obtain the project reports because this provides them with a sense of ownership of the material that they have shared.

Appendix C

Observation schemes

C.1 Competitive Mode

Dato: _____

Test nr:	
Player 1 ID:	
Player 2 ID:	

Player	**Attitude/mood** Player 1	Uninterested	☐	Insecure	☐	Little energy	☐	Curious	☐	Excited	☐	**Other:**
	Attitude/mood Player 2	Uninterested	☐	Insecure	☐	Little energy	☐	Curious	☐	Excited	☐	**Other:**
	Communication between players	Yes	☐	No	☐	**Topic:**						
	Laughter	Yes	☐	No	☐	**Why?**						
Movement	**Whole body movement**	Yes	☐	No	☐	**If No, how?**						
	Green buttons intentionally not pressed?	Yes	☐	No	☐							
	Game pole placement Player 1	OK	☐	Too high	☐	Too low	☐					
	Game pole placement Player 2	OK	☐	Too high	☐	Too low	☐					
	Jumping	Yes	☐	Sometimes	☐	No	☐					
	Squats	Yes	☐	Sometimes	☐	No	☐					
	Effort to reach difficult button combinations	Yes	☐	Sometimes	☐	No	☐					
System usability	**Game-related questions?**	Yes	☐	No	☐	**If Yes, what?**						
	Confusion?	Yes	☐	No	☐	**If Yes, what?**						
	Asks for explanation?	Yes	☐	No	☐	**If Yes, what?**						

Sluttkommentar: _____

C.2 Single Player

Dato: _____

Test nr:	
Player ID:	

Player	**Attitude/mood**	Uninterested ☐	Insecure ☐	Little energy ☐	Curious ☐	Excited ☐	**Other:**			
	Laughter	Yes ☐	No ☐	**Why?**						
Movement	**Whole body movement**	Yes ☐	No ☐	**If No, how?**						
	Green buttons intentionally not pressed?	Yes ☐	No ☐							
	Game pole placement	OK ☐	Too high ☐	Too low ☐						
	Jumping	Yes ☐	Sometimes ☐	No ☐						
	Squats	Yes ☐	Sometimes ☐	No ☐						
	Effort to reach difficult button combinations	Yes ☐	Sometimes ☐	No ☐						
System usability	**Game-related questions?**	Yes ☐	No ☐	**If Yes, what?**						
	Confusion?	Yes ☐	No ☐	**If Yes, what?**						
	Asks for explanation?	Yes ☐	No ☐	**If Yes, what?**						

Sluttkommentar: _____

Appendix D

Questionnaire

Dato:_____

Spørreundersøkelse om lekne installasjoner

Kjønn: Mann ☐
Kvinne ☐
Annet ☐

Alder:_____

Kryss av for hvorvidt du er helt uenig, litt enig, verken eller, litt enig eller helt enig i følgende påstander.

		Helt uenig	Litt uenig	Verken eller	Litt enig	Helt enig
1.	Jeg syns varigheten på spillet var for kort	☐	☐	☐	☐	☐
2.	Jeg syns intensiteten på spillet var for høy	☐	☐	☐	☐	☐
3.	Jeg syns vanskelighetsgraden på spillet var passelig	☐	☐	☐	☐	☐
4.	Jeg føler at jeg fikk brukt kroppen i spillet	☐	☐	☐	☐	☐
5.	Jeg ville kategorisert dette spillet som lek	☐	☐	☐	☐	☐
6.	Lydeffektene gjorde det lettere å forstå spillet	☐	☐	☐	☐	☐
7.	Lysene i spillet gjorde det lettere å forstå spillet	☐	☐	☐	☐	☐
8.	Jeg syns at spillet var gøy	☐	☐	☐	☐	☐
9.	Jeg ville anbefalt dette spillet til venner	☐	☐	☐	☐	☐

Kryss av for hvorvidt følgende aspekter bidro til din fornøyelse i spillet?

		Ingenting	Litt	En del	Mye	Svært mye
1.	Samarbeidet (hvis aktuelt)	☐	☐	☐	☐	☐
2.	Konkurransen (mot deg selv eller andre)	☐	☐	☐	☐	☐
3.	Lyden	☐	☐	☐	☐	☐
4.	Lyset	☐	☐	☐	☐	☐
5.	Bevegelsen av kroppen	☐	☐	☐	☐	☐
6.	Intensiteten	☐	☐	☐	☐	☐
7.	Kravet om konsentrasjon	☐	☐	☐	☐	☐
8.	At det er en aktivitet utenom det vanlige	☐	☐	☐	☐	☐

Appendix E

Transcribed files

Transcript 008

I: Okay! Hvordan syns du det var?
T: Det var veldig gøy!
I: Ja?
T: Veldig.. jeg liker konkurranse, så det var gøy.
I: Så bra! Hvordan var på en måte førsteinntrykket ditt av spillet?
T: At det var vanskelig å vite hvor langt unna man skulle stå, og samtidig se lysene, og ja..
I: Så du begynte å tenke taktikk, på en måte, med én gang?
T: Ja
I: Ja, skjønner. Var det noe du likte spesielt godt ved spillet?
T: At det ble oppgradert, sånn først var det ett lys her, ett lys der, og så var det flere, og så var det rødt og grønt, og flere aspekter.
I: At det bygde seg opp, liksom?
T: Ja.
I: Var det noe du ikke likte like godt?
T: Ehm. Næ. At jeg tapte da.
I: Ja skjønner! Hvordan syns du det gikk å forstå hvordan spillet fungerte?
T: Eh. Det gikk bra, man skjønte det ganske fort, ja.
I: Hva det noe som hjalp deg spesielt, eller var det på en måte noe spesielt som gjorde at det var lett å forstå?
T: Det var jo lysene, kanskje? Sånn, det var jo litt lyd, men det sonet litt ut. (ID 1)
I: Ja, skjønner.
T: ja...
I: Så lysene...
T: Lysene.. Da forsto jeg hva jeg måtte gjøre.
I: Så bra! Var det noe som var forvirrende?
T: Nei
I: Nei?
T: Kanskje når det ble neste level..
I: Ja?
T: Kanskje?
I: Hadde det noe å si for, på en måte, motivasjonen din til å spille?
T: Eller, det var kanskje at det ble oppgradert når det var nytt sett, ja, og da fikk jeg jo mer motivasjon. Sånn «Okey, nytt sett!»
I: Ja, en ny start liksom?
T: Så kanskje jeg egentlig ikke ble så forvirret, likevel.
I: Det kan være motiverende også da, for så vidt. Har du prøvd noe sånt som det her før?
T: Nei, bare sett det på Mesternes Mester, omtrent. Litt sånn reaksjonsgreier.
I: Ja, skjønner! Er du en person som, som lett oppsøker aktiviteter i pausene, eller.. ja?
T: Ja, aktiviteter er gøy!
I: Er det noe spesielt du pleier å gjøre i pausene på skolen?
T: Mellom forelesningene?
I: Mm.
T: Går runder, det er liksom ikke så mye å gjøre, nei.
I: Syns du det, på en måte, er mangel på ting å gjøre her?

T: Det hadde jo vært gøy om det hadde vært mer sånne aktiviteter å gjøre i pausene, absolutt
I: Så bra. Da du kom hit i sta, da jeg var der borte og henta dere, hvordan følte du deg da? Hvordan var humøret?
T: Bra humør. Jeg håpet du skulle spørre, fordi jeg hadde hørt noen andre hadde spilt det, og det hørtes gøy ut.
I: Hva sa du at..?
T: Jeg hadde hørt noen andre som hadde vært med på det her..
I: Åja, noen venner av deg?
T: Ja!
I: Åja, så gøy! Ryktet sprer seg! Syns du, eller hvordan er humøret ditt nå i etterkant av å ha spilt?
T: Eh, det er bra! Energi!
I: Vil du beskrive om spillet hadde noen innvirkning på hvordan du på en måte...
T: Siden jeg var i aktivitet, så fikk jeg jo brukt energien, og så fikk jeg mer energi av å røre meg mer også. Så positiv innvirkning! (ID 38)
I: Det er veldig gøy å høre. Denne mengden fysisk bevegelse i spillet da, hva syns du om den?
T: Det er jo ikke for masse..
I: Nei?
T: Så, ja. Passe, sånn for eksempel mellom forelesninger, sånn man blir jo ikke svett, så det er jo fint.
I: Ja? Syns du spillet kunne krevd mer fysisk bevegelse?
T: Ja, Det hadde ikke vært noe problem hvis det hadde krevd mer. Men hadde kanskje, kanskje noen hadde ikke likt det.
I: Tror du det ville gjort noe med terskelen til å prøve, kanskje?
T: Ja, det hadde nok vært litt høyere terskel da.
I: Eh. Ja, du sa jo at det var noen venner av deg som hadde spilt det, så du hadde hørt om det. Var det noe annet som motiverte deg til å ville prøve?
T: Det så jo gøy ut! Oppsettet, og ja, noe som skjer!
I: Ja, så bra! Når du først kom i gang og spilte da, hva var det som var motiverende i spillet?
T: Eh. Å slå hun jeg spilte mot.
I: Konkurransen?
T: Ja.
I: Hva skulle, er det noe som.. eller. Eh vanskelig formulert spørsmål. Altså, hva skal til for at du ville brukt denne i hverdagen din? I.. på skolen?
T: Jeg liker jo å være i aktivitet, så hvis det hadde vært tilgjengelig og ikke kø, for eksempel, så kunne jeg godt tenkt meg og gjort det flere ganger.
I: Ja, så bra! Nå har vi snakket litt om at konkurransen som var motivasjon for deg. Hvilken verdi har det for deg å spille sammen med andre?
T: Jeg liker lagspill, veldig godt. Har spilt håndball i mange år, så det.. Ja, lag er veldig bra. Så å spille sammen gjør jo ting gøyere. Ja.
I: Hva er det med lagspill som gjør det mer gøy?
T: At man vinner og taper sammen, egentlig. Så nå var vi jo motstandere, men ja, hvis man er to og to på lag, for eksempel, så blir det jo ekstra gøy å klare det, når man klarer det sammen. Og det er ikke så kjipt å, på en måte, hvis man taper sammen heller. Da har man gjort noe sammen også.
I: Ja? Jeg regner med at du kjente hun du spilte mot?

T: Ja.
I: Hvordan tror du det ville vært å spille mot en fremmed?
T: Jeg kunne nok ikke sluppet meg så mye løs, kanskje. Sånn, måtte ha skjult litt konkurranseinstinktet. (ID 20)
I: Vært litt høfligere, liksom?
T: Ja, vært litt høfligere.
I: Skjønner! Fulgte du mye med på hva hun andre gjorde underveis?
T: Eh, jeg så litt bort på henne, ja. Så når hun klarte å slå lysene, så var det sånn: «Å søren!»
I: Ja, skjønner! Eh. Hvilke steder kan du se for deg at en sånn installasjon kan stå?
T: Her er det jo veldig stor plass, men her er det jo ofte sånne karrieredager, så kanskje U2?
I: Eh ja, altså under...
T: Så ned to etasjer.
I: Ja, ikke sant.
T: Eller nei, ned én etasje herfra. Fordi ja, der er det bare rom nedi.. og, ja
I: Men sånn at den kunne på en måte stått på campus? Du ser for deg at det hadde vært naturlig?
T: Ja, som du snakket om i sta, mellom forelesninger hadde det jo vært kjempegøy!(ID 4)
I: Ja, så bra! Du nevnte jo det med at kø ville vært noe som gjør at du ikke ble så gira?
T: Ja, for det er jo bare 15 minutters pause.
I: Ja, men publikum da, hvilken påvirkning har det på deg?
T: Det kan jo være litt skummelt hvis man ikke kjenner publikum.
I: Ja?
T: Så hvis det er mange som står og ser på, så er det jo litt skummelt, kanskje?
I: Okay, ja.
T: ja, men.. Det kan jo også være motiverende hvis det er litt sånn god stemning rundt det, og ja..
I: Hvis man heier på hverandre..?
T: Ja, så kan det jo være litt gøy.
I: Så bra! Jeg har fått inntrykket av at du syns det her var ålreit å spille..
T: Ja!
I: ... og at konkurranse er litt viktig for deg?
T: Ja!
I: Tusen takk for at du ville være med!
T: Jo, bare hyggelig!

Transcript 018

I: Hvordan syns du at dette her var?
T: Jeg syns det var intenst. Det fikk på en måte vekket et mye større konkurranseinstinkt enn det man.. Jeg føler liksom at når du er mye mer i bevegelse, litt sånt, en litt sånn fysisk, men samtidig ikke en sånn utrolig anstrengende oppgave. Som fikk meg til å få litt den der 3000-meterfølelsen. At du står der og tenker sånn, i hvert fall sånn i retrospekt, at det er litt sånn «Søren, jeg får lyst til å prestere bra», men samtidig så var det ikke sånn at det var halvhjerta da, på noe vis.
I: Var det noe du likte spesielt godt ved spillet?
T: Jeg likte på en måte måten du blir utfordret på.
I: Ja?
T: At du.. at man kanskje starter med en veldig enkel teknikk, det er liksom ingen regler som settes av spillet. Du skal bare trykke på knappen. Jeg fant jo fort ut, egentlig, at det var mye bedre å gå litt.. ta litt avstand fra veggen, for å få liksom sidesynet til å funke, til å plukke opp de grønne lyssignalene i stedet for å bare flakke med blikket. Og det er på en måte en sånn.. vise at du kan liksom utvikle en egen teknikk da, mens man holder på det, og det syns jeg ofte.. (ID 43)
T: Ja, det er.. hva var jeg inne på? Nei, altså, du utvikler en teknikk og da på en måte sånn at du skjønner konseptet med én gang. Du blir ikke begrenset av piltaster på et tastatur da. Det syns jeg er kult.
I: Ja. Var det noe du ikke likte så godt?
T: Nå fant jeg plutselig ut at de tre punktene under der er kanskje betegnelsen på liv?
I: Ja!
T: Så det er kanskje ikke så veldig innlysende, og jeg følger heller ikke så mye med på scoren, og blikket mitt er helt tiden festet på et annet punkt enn å følge med der. Så men én gang jeg ser på hvor mange liv jeg har, så har jeg tapt.
I: Ja, så da, siden du ikke fulgte med på scoren, da hadde... Hva slags påvirkning hadde det på deg underveis da, egentlig?
T: Nei, det hadde egentlig null...
I: Null?
T: Mer egentlig et punkt jeg så på mens jeg ventet på å finne de grønne, men jeg fikk ikke registrert hva som sto der. Så det var kanskje ikke så veldig innlysende heller å skjønne at de tre punktene var liv. Jeg skjønte det egentlig ikke før nå når jeg begynte å snakke om det. Men hadde jeg spilt det mer, så hadde jeg jo skjønt det da. Så kanskje litt mer sånn.. en tydeligere respons når jeg faktisk mistet et liv. Nå var jeg så heldig at jeg fikk spille med lyd, men jeg syns likevel ikke at jeg fikk liksom den.. (ID 46)
I: Nei..
T: Også var det kanskje litt frustrerende at jeg følte at jeg trykket på noen uten at det liksom registrerte det da. Og det syns jeg er teit.
I: Ja, det er lov. Men du nevnte lyd. Hva.. hvordan påvirket lyden deg underveis?
T: Jeg la egentlig ikke så veldig mye merke til lyd, men jeg vil tro at lyd ville fått meg til å forstå at jeg mista liv da, men... men jeg føler ikke at det hadde så veldig påvirkning på meg her nå. (ID 2)
I: Nei. Hvordan.. du nevnte jo litt det der med knappene og at det var.. du måtte se litt i sidesynet. Hvordan syns du det gikk å forstå spillet?

T: Det var kjempeenkelt. Det var jo ganske intuitivt å skjønne hvordan du skal trykke på grønne knapper og unngå de røde. Det er liksom ganske... Oppfyller de fleste sånne prinsipper for at det er ganske innlysende. Og også det at den roterer [teller ned] da, det er også ganske fint å se. Du ser at det var nære på, eller at du har god margin...

(Avbrutt av annen spiller)
I: Du sa at scoren ikke hadde så mye å si underveis. Men tenkte du noe på scoren i ettertid?
T: Ja, altså. Jeg trodde jo at når spillet var over, så trodde jeg at jeg hadde mistet ett liv. Og fikk meg til å skyndte meg å trykke på nytt, men egentlig så burde scoren være noe som åpenbares til deg etter at du er ferdig med spillet, fordi... underveis i spillet, så har du fokus et helt annet sted enn på scoren, så hele det displayet der kunne man kanskje... man kunne kanskje tenkt mer på knappene da. Altså få til noe der hvor du faktisk fester blikket, det du bryr deg om da. Der kunne man kanskje fått en oppdatering på hvordan du ligger an da.
I: Ja, ikke sant. Når du kom hit i sta, var det noe spesielt som fikk deg til å ønske å spille?
T: Som fikk meg til å få lyst til å spille?
I: Ja.
T: Ja, altså. Hvis det sånn sett i lys av at dere holder på her, eller?
I: Om det var noe ved installasjonen som fikk det til å... spille?
T: Det er kanskje det at det er en fysisk lek da. Det er kanskje det at det skiller seg ut litt sånn, at det er litt annerledes. Men sånn i utgangspunktet så syns jeg ikke at det var så veldig mye som... (ID 6)
I: som dro deg til det?
T: Nei.
I: Var det noe spesielt som du syns var motiverendeunderveis da?
T: Motiverende underveis? Jeg har jo lyst til å gjøre mitt beste da, når jeg først blir utfordret på noe sånt som det her. Så det er jo egentlig det som er drivkraften da, det er jo ikke sånn at jeg fikk en kaffe hvis jeg hadde klart over 50. Og heller ikke er det en sånn sum-highscore over alle de andre som har prøvd tidligere. Jeg hadde bare noen andre holdepunkter å.. altså hva deres highscore var, det var det eneste jeg visste fra før av.
I: Når du spilte nå, så var det ikke så mange mennesker rundt her. Hvordan tror du det ville vært mange som sto og så på deg mens du spilte?
T: Å! Da tror jeg at jeg hadde skjerpet meg mer, egentlig.
I: Du hadde ikke syns at det var ubehagelig?
T: Det hadde vært ubehagelig hvis jeg var skikkelig dårlig på det. Og derfor hadde jeg skjerpet meg mer. Sånn at, det er jo absolutt en publikumsfaktor da, med at du liksom, at du ikke har lyst til å drite deg ut. (ID 14)
I: Ja, ikke sant. Hvis det hadde vært noe ventetid. Hvordan tror du det ville påvirket ønsket ditt om å prøve?
T: Da må det være litt sånn «hva er det som gjør at jeg har lyst til å prøve da?» og det må jo være den ene tingen at jeg syns det ser gøy ut da.
I: Ja.
T: Men uten en highscore eller noen sånt, så føler jeg på en måte ikke det at, jeg hadde tenkt sånn «Ja, det er kult konsept, jeg har sett noen sånne reaksjonsgreier tidligere, hadde sikkert vært kult å prøve, men jeg gidder ikke å stå i kø her som i en skiheis for å stå ned en bakke». For det er jo ikke noe spesielt nytt som skjer... Å, dæven, hun var god [om annen spiller].
(Distraheres av pågående spill)
I: Helt tilslutt, kan du si noe om humøret ditt ble påvirket av spillet?

T: Ja, du har kanskje kjent litt sånn dalende energinivå siden intervjuet startet til nå, og det er litt den ... den 3000-meterfølelsen den har jeg ikke nå lenger, men den hadde jeg veldig mye. Litt sånn adrenalinfølelse, litt sånn «woo!», jeg har lyst til å prøve mer.
I: Ja, kult. Men da tror jeg vi er ferdig. Tusen takk!

Transcript 016

I: Supert! Hva syns du om det her?
T: Det var interessant. Det tester jo reaksjonsevnen, så det var utfordrende, spesielt når det begynte å komme flere og flere knapper. Hadde vært gøy å prøve igjen på et senere tidspunkt, bare for å se når.. når man vet litt mer hvordan det bygges opp, hvordan det blir da senere. Ja. (ID 24)
I: Var det noe du likte spesielt godt ved spillet? Noen spesielle elementer som stakk seg ut som positive?
T: Jeg syns det var bra at det var timer på selve knappene, fordi det hjalp .. Og da var det plutselig: «Åja, shit, der holder jeg på å.. den holder på å dø» liksom, så da må jeg være kjappere på den enn den. Det var varierende tid på, når det kom to knapper, kunne det være varierende tid?
I: Hvis det kommer to samtidig, har de på en måte samme, men de får kortere og kortere tid utover i spillet.
T: Ja, sant. Og avstanden på de [søylene] har jo en del å si da. For hadde de vært nærmere hadde det vært lettere for å se, men de er akkurat langt nok fra hverandre til at det blir vanskelig å se også. Så det var utfordrende, faktisk.
I: Ja, på en god måte?
T: På en god måte! Det var gøy!
I: Var det noe du ikke likte så godt da?
T: Jeg tror knappene kunne vært litt bedre.
I: Litt?
T: Litt mer sensitive, fordi at jeg traff noen ganger, så var det sånn «Ah, nei, den gikk ikke». Ellers var det ikke noe spesielt jeg tenkte på. Tror jeg.
I: Nei, så bra. Hvordan syns du det gikk å forstå hvordan selve spillet fungerer?
T: Veldig lett. Veldig greit å forstå, det er: trykk på knappene når den lyser grønt, ikke trykk på de røde.
I: Du fikk.. Fikk du en forklaring på starten?
T: Mm.
I: Hvordan ville det vært uten den forklaringen, tror du?
T: Jeg tror det kunne vært ganske intuitivt med tanke på at de lyser, og de teller ned. Dermed så kunne det vært intuitivt. Men, ja.
I: Det blir jo på en måte bare spekulasjoner, men..
T: Ja, men det er mest fordi at du trykker på en grønn knapp og ser at du det er tre prikker [liv-indikator] foran deg, så du skjønner at etter hvert at hvis du trykker feil eller en av de går ut, så ser du at et liv går opp.
I: Mhm. Var det noe som forvirret deg?
T: Det hadde vært greit hvis, altså nå fungerer ikke høyttalerne denne gangen, men hvis det hadde vært sånn, først får du en knapp, så to knapper, så tre knapper, så fire knapper, følte jeg, eller det bygde seg opp sånn. Så hvis den hadde sagt ifra når den gikk opp en vanskelighetsgrad.
I: Ja, på en måte et tegn om ny level, eller..
T: Ja, for da skjønner du at «Å shit, nå må du være mer og mer på».
I: Ja, godt poeng. Har du prøvd noe som det her før?
T: Nei. Eller, jeg.. Kanskje, men det var mer sånn knapper på et bord, sånn.. som lyste. Men det var mye simplere.

I: Litt sånn Whack-a-mole-aktig?
T: Ja, litt mer sånn, ja.
I: Skjønner.
T: Det var ikke helt.. det var ikke så mye koordinasjon, for da var det bare seks knapper, tror jeg, sånn der, også skulle du trykke på de som lyste.
I: Hvor var det, eller hvilken..?
T: Sverige et sted, eller var det i Tyskland?
I: På et sånt type senter..?
T: Ja, på et vitensenter-aktig greie.
I: Sånn til vanlig i pausen og sånn, oppsøker du ofte aktiviteter på campus? Eller hva bruker du pausene dine på, vanligvis?
T: Pausene går ofte til å gjøre noe, fordi man blir litt stillesittende, så jeg pleier som regel å gå meg en tur, fordi her er det jo egentlig ingenting som skjer. Når jeg hadde forelesninger i Kjelbygget, så tok jeg og gikk opp og spilte pingpong, for eksempel. Så ja, jeg oppsøker jo litt annet. (ID 3)
I: Hvis det er tilgjengelig?
T: Ja.
I: Ja, så bra. Hvordan var humøret ditt da du kom hit sta? Hvordan følte du deg?
T: Jeg er veldig happy i dag, så det var egentlig godt humør. Fin i formen.
I: Og nå etterpå?
T: Jeg føler meg.. har litt mer energi faktisk. Det er fint!
I: Tenker du at.. for å stille et ledende spørsmål: har det noe med spillet å gjøre?
T: Jeg tror det har noe med litt sånn mestringsfølelse i spillet. Når man får det til så blir det gøy. Også var det litt utfordrende, og når man liker litt utfordringer så blir det gøy, da.
I: Kult! Hva syns du om mengden fysisk bevegelse i spillet?
T: Det var veldig passe. For det var ikke sånn at man blir svett av det, men man får beveget hele kroppen litt.
I: Syns du det burde vært mer eller mindre [fysisk bevegelse]?
T: Jeg syns det var passe for meg, men jeg kan skjønne folk som er litt kortere, at de vil kanskje ha litt mindre, for eksempel. Fordi det er jo, det har jo med armlengden å gjøre, holdt jeg på å si...
I: Ja, ikke sant. Da du var i gang og spilte, hva var det som var, på en måte, motiverende faktorer for å gjøre en innsats?
T: Eh.. Vinnerinstinktet.
I: Hva sa du?
T: Vinnerinstinktet.
I: Vinnerinstinktet, ja.
T: Nei, Når jeg begynte så var det egentlig mer sånn «Ey, trykk på knappen», så blir det bare at du kommer inn i den rytmen. Da bare går det av seg selv, på en måte.
I: Ja. Bare det å holde ut, på en måte?
T: Ja, bare å prøve... bare kjøre på «dette her greier du» liksom.
I: Ikke sant. Nice. Tror du du kunne brukt denne her i hverdagen, hvis du hadde den tilgjengelig på campus, for eksempel?
T: Hvis den hadde stått her, så kunne jeg brukt den, ja.
I: Hva var det som.. hva ville motivert deg til å bruke den da?
T: Slå meg selv eller slå vennene mine.
I: Ja? Laget high score-liste, liksom?

T: Ja, fordi da kunne man ha.. da kunne man liksom målt seg mot seg selv eller målt seg mot andre på... Ja, for eksempel, jeg spilte Tetris før. Så hver gang prøvde jeg alltid bare å slå min egen rekord, så til slutt så går jo ikke det, men jeg prøver jo fortsatt og én dag så går det jo. Det blir jo veldig sånn da.
I: Ja, kult! Fulgte du mye med på scoren din underveis?
T: Nei.
I: Nei, okay! Hvorfor ikke?
T: Fordi når det handler om koordinasjon og bare... trykke på mest mulig knapper, vil scoren.. Hvis du fokuserer på scoren så mister du tid.
I: Ja, ikke sant. Så en taktisk greie?
T: Ja, taktisk.
I: Antall liv da?
T: Nei.
I: Nei. Så du bare spilte til det stoppet?
T: Ja, fordi hvis man da ser på det, så kan det hende at man ikke får med seg knapper, eller ett eller annet, da mister man de uansett.
I: Ja, ikke sant. Nå var det jo ikke så mye publikum her. Tror du det ville hatt noen påvirkning på deg når du spilte hvis det var mange folk rundt?
T: Eh. Nei, det tror jeg faktisk ikke.
I: Ville det gjort noe med terskelen for å oppsøke spillet og sette i gang.
T: Kanskje. Men hvis det er mange rundt, er det nok mange som er i kø. Og hvis det er en lang kø, så gidder man jo liksom ikke. Da blir det sånn «Å, jeg må vente. Har jeg tid til det i denne pausen?». Da vil jeg heller gå og fylle vann, eller noe sånt.
I: Okay, så bra. Jeg har fått inntrykk av at du syns det her var ganske ålreit, og tusen takk for at du var med!
T: Bare hyggelig

Transcript 011

I: Kan du fortelle litt om førsteinntrykket ditt av spillet?
T: Det ser litt proft ut, ser mer proft ut enn jeg hadde forventet, at det var mye bevegelse, også så det gøy ut. (ID 5)
I: Ja
I: Hva synes du sånn etterpå da, etter at du har spilt det
T: Det var veldig gøy da, du tenker ikke over at du bruker kroppen så mye så litt etterpå så blir litt sånn "oi jeg ble litt andpusten faktisk". (ID 35) (ID 40)
I: Ja, så du synes det var, hva synes du aktivitetsnivå, var det..
T: Det var greit aktivitetsnivå det var det, men det var på en måte en fin måte å bruke kroppen sin uten å liksom bli sliten, hvis du skjønner hva jeg mener. SÅ det, det var veldig gøy.
I: Var det noen ting du likte spesielt godt?
T: Jeg likte at det var flere runder, det var, det var gøy, også likte jeg at det var litt sånn variasjon i hvordan de ulike rundene på en måte ble spilt da, eller reglene.
I: Hadde det noen sånn spesiell påvirkning på deg.
T: Det var greit å ha en sånn introrune hvor det på en måte ikke var noen røde knapper og sånt, bare for å komme litt i gang med spillet, så ja, det hjalp på liksom komme litt inn i spiriten.
I: Når du kom hit i stad, hvordan følte du deg da, sånn humørmessig?
T: trøtt, litt sliten, jeg var litt sånn ååh, lang dag holdt jeg på å si.
I: Nå i etterkant da?
T: Jeg fikk en liten oppkvikker av å hoppe rundt, det høres kanskje litt teit ut å si, men ja, jeg gjorde det. Du blir litt sånn wooo.
I: Føler du at det.. Var det noe som kom gradvis eller var det noe du bare...
T: Jeg følte det traff litt sånn med en gang spillet begynte, for at det ble det sånn oi, du blir så gira sant sånn så etter typ den første eller andre lys sutten da så, holdt jeg på å si, hehe, vet ikke hva jeg skal kalle det. Så kjente man at man ble litt sånn 'wooo'
I: Du nevnte litt i stad om dette med røde knapper, at det var greit å ha en sånn introrunde. Hvordan synes du det var å forstå hvordan spillet fungerte?
T: veldig greit, det var liksom, altså det var jo veldig straight forward, grønn knapp er bra og rød er dårlig liksom.
I: Ja, var det noen spesielle element som bidro til at du forstod spillet?
T: Ja, altså det er jo det at det lyser opp da, det kunne kanskje vært litt mer sånn lyd og sånn, for jeg merket at det var litt, men..
I: SÅ, du ville hatt mer lyd?
T: ja, tror det, enda mer litt sånn du duru du, typ om man hadde vunnet, eller ja, litt sånne ting da.
I: Ja
I: Når du kom hit i stad, hva var det som gjorde fikk lyst til å prøve?
T: Det ser jo veldig kult ut da, også det er jo litt sånn mye lys og farger og mennesker, det er jo spennende det, og ser det veldig sånn vel gjennomført ut, det ser litt proft ut på en måte da. (ID 11)
I: Når du kom i gang med spillet da, hva var det som var motiverende?
T: Nei, det var jo å vinne da, og slå han jeg spilte mot. Jeg vet ikke helt, altså når man har litt sånn konkurranseinstinkt så blir man litt sånn ja, skal greie å ta de først. (ID 29)

I: Er det noe spesielt som hadde skullet til for at du kunne brukt den her i hverdagen?
T: ikke egentlig, jeg satt egentlig å tenkte litt på det i stad, sånn vi burde hatt en sånn i hver etasje sånn at man kan gå å spille litt, ja typ sånn når du spiller beer pong, nei beer pong sier jeg, ping pong.
I: Ja, ikke sant
T: ja, sånn vi har oppe i A4 liksom, A3. SÅ det, jeg kunne lett hatt en sånn rett utenfor kontoret.
I: Ja ikke sant
I Okei, så nå så var det ikke noe kø rundt her. Hvordan tror du det at det var litt ventetid ville påvirket deg?
T: Hadde det vært veldig lang ventetid så hadde jeg nok gått og kommet tilbake igjen og sjekket senere, men spillet gikk på en måte ganske fort så det er litt sånn, når det er kø så spiller på en måte ikke folk flere runder, det er jo bare dårlig gjort så da hadde det nok gått ganske kjapt. Så det hadde ikke gjort noe å vente litt.
I: Men, mengde mennesker som ser på deg da, hvordan tror du, hadde det påvirket deg i noen grad?
T: Njaaa, kanskje litt, bittelitt ja, du blir litt mer sånn uuh, jeg vet ikke, når man fokuserer så mye eller blir så konset så jeg vet ikke, det kan være litt kleint for noen å stå foran, men jeg tror det hadde gått greit.
I: ikke sant.
I: Du sa litt at du hadde spilt litt sånn ping pong og sånn før, vil du anse deg selv som en leken person?
T: Ja, jeg tror det, jeg gjør det. Jeg er veldig glad i å gjøre morsomme ting og ha det gøy, rett og slett.
I: Har du prøvd noe som ligner på dette før?
T: ikke i så stor skala, da er det mer, jeg har liksom spilt typ reaksjonsspill og sånn, men det har ikke vært hvor du bruker hele kroppen. Det har vært mer sånn du sitter også skal du trykke på en knapp liksom, men nei, jeg likte det veldig godt.

Transcript 020

I: Vil du bare fortelle litt om hvordan du syns det her var?
T: Jeg syns det var gøy. Det var... hvert fall med avstanden ble det litt utfordrende også, så det var morsomt!
I: Var det noe ved spillet du likte spesielt godt? Som du la merke til underveis?
T: Gøy med introen, den likte jeg. Og at det blir vanskeligere og vanskeligere etterhvert, det er kult. (ID 28)
I: Ja? Hva gjorde de med motivasjonen din?
T: At man ble litt mere på, på en måte. At.. siden det lyste mer, så ble man litt mer på alerten, liksom. Mmm.
I: Var det noe du ikke likte så godt?
T: Ehm. Litt skarpe kanter på de greiene. Men bortsett fra det så syns jeg det var gøy!
I: Ja, så bra! Ehm. Hvordan syns dy det gikk å forstå hvordan spillet fungerte?
T: Det var ganske intuitivt. Veldig intuitivt.
I: Var det noen spesielle elementer som gjorde det intuitivt?
T: Grønn, de skal du trykke på. Rød, de skal du ikke trykke på. Det med fargene, så var det egentlig, ja, det skjønte man på en måte.
I: Så bra. Var det noe som var forvirrende?
T: Nei. Det syns jeg ikke.
I: Nei, ingenting? Okay. Har du prøvd noe sånt som du syns ligner på det her før?
T: Mmm. Ja, men jeg kommer ikke på nøyaktig hva, men altså, det har vært flere ganger man skal liksom trykke på knapper som lyser, sånn Whack-a-hole, liksom. Kjent konsept, men ja.
I: Sånn vanligvis i pausene, hva pleier du å bruke tiden din på, på skolen?
T: Jeg pleier enten å bare snakke, gå en runde eller kjøpe noe i kiosken.
I: Ja, så du oppsøker ikke noen sånne aktiviteter, eller?
T: Nei, som regel ikke.
I: Hvorfor ikke?
T: Pausene er ganske korte, så det er deilig å bare prate litt, på en måte. Bruke tiden til å prate litt.
I: Ja, skjønner. Da du kom hit i sta, før du begynte å spille. Hvordan følte du deg, hvordan var humøret?
T: Jeg var klar! (Latter) Hvert fall når man så at [Navn] spilte, da var det litt sånn «okay, dette her, jeg skal få det til!», ja.
I: Følte du at du fikk noen endring i humør av å spille spillet?
T: Eh. Fikk litt mer energi nå, ja. Fordi at man blir litt sånn gira. (Latter)
I: Spillet krever jo en viss mengde fysisk aktivitet. Hva syns du om den mengden?
T: Det.. veldig fint, det. Selv jeg som er litt lav, som måtte hoppe til de høyeste, det gikk jo helt fint. Gjorde ikke noe det!
I: Burde det vært mer eller mindre, syns du?
T: Nei, jeg syns det var fint, jeg.
I: Da du var i gang med å spille, hva var det som motiverte deg til å gjøre en innsats?
T: Ehm. Nei, det bare det at man vil klare å få det til da. På en måte. Det var ikke noen spesiell motivasjonsfaktor annet enn, det var gøy.
I: Så bra. Hva skulle til for at du skulle brukt den her i hverdagen på skolen?

T: Hvert fall det skulle vært lett tilgjengelig, men nå har man jo også forelesninger rundt om, så hvis det bare hadde vært et sted, for eksempel, så hadde det vært litt sånn.. jeg hadde ikke gått dit bare for å ta den, på en måte. Også skulle det ikke vært så mye kø. (ID 7)
I: Hva ville kø gjort med motivasjonen din til spillet?
T: Hvis det hadde vært litt kø, så kanskje motivasjonen hadde økt, fordi at «okay, ja vi kan teste». Hadde det vært for lang kø, hadde man ikke fått tid, på en måte. Jeg tror kanskje ikke det er verdt det hvis (Latter)... spille versus å komme litt for sent i forelesning. Jeg tror ikke jeg hadde giddet det, på en måte.
I: Nei, jeg ser den. Hvis det bare hadde vært publikum da, men ikke folk som sto i kø. Ville det hatt noen påvirkning på deg?
T: Da får man jo ofte litt sånn at man vil prestere litt, da.
I: Ja..
T: Ja, og ikke gjøre det dårlig.
I: Men du ville fortsatt gått bort og testet?
T: Hvis ikke det hadde vært kjempemange, ja (Latter).
I: Ja, skjønner. Ehm. Du får en score i mens du spiller. Fulgte du med på den underveis.
T: Nei.
I: Nei, hvorfor ikke det?
T: Fordi jeg fokuserte på de grønne knappene på siden.
I: Hva med antall liv da, så du på det?
T: Nei, det så jeg heller ikke.
I: Ehm.
T: Føler ikke at jeg hadde tid til det på en måte. Altså, jeg skulle bare fokusere på de grønne knappene, så det var sånn: Ha fokuset på siden i stedet for midten.
I: Så du spilte på en måte bare til du døde?
T: Ja.
I: Ja, okay! Så bra. Da tror jeg vi egentlig har vært igjennom det meste her. Jeg har fått inntrykk av at du syns det var en ganske ålreit aktivitet.
T: Ja, det var morsomt!
I: Tusen takk for at du var med!
T: Bare hyggelig!

Transcript 002

I: Jeg lurte på, kan du fortelle litt om førsteinntrykket ditt av spillet, når du så det?
T: Hva tenker du på da? Hvordan..?
I: Hva var det første du tenkte når du ble spurt om å delta i dette?
T: Jeg var først.. ville se hva det var da. Når jeg skjønte hva det var da, så var.. det var var artig! Det var litt sånn stilig spill.
I: Var det noe du likte spesielt godt ved spillet.
T: Jeg vet ikke. Altså, det at du spiller mot noen gjør det jo litt artigere. Tror ikke det hadde vært så artig hvis det hadde bare vært deg selv. Ja. Hvis hensikten er at det skal være gøy. Jeg vet ikke hva hensikten deres med spillet er. Om det er å måle noe.. eller noe sånt
I: Har du prøvd noe som ligner dette her før?
T: Nei, det vil jeg ikke si.
I: Du var litt forvirra når du skulle starte spillet. Var det noe spesielt som gjorde at du ble forvirra?
T: Det var kanskje forutsetningen hva som, altså, tydeliggjørende da, hva som skal, hva skal du trykke på og hvordan eventuelt, vi ble jo informert om at vanskelighetsgraden øker da, men at det kommer to [knapper] samtidig, for eksempel, det var ikke jeg klar for, liksom, men, ja. (ID 44)
I: Hvordan syns du det var å forstå hvordan det fungerte underveis da?
T: Det gikk egentlig ganske bra.
I: Ja?
T: Det gjorde det faktisk. Det var egentlig veldig intuitivt lagt opp, sånn som et spill
I: Ja! Så nå i etterkant, føler du, hvordan føler du deg? Har du noen endring i humør?
T: Ja, det var litt artig da. Humøret mitt, jeg blir glad av det! Det vil jeg påstå. Man våkner litt i hvertfall.
I: Når dere sto i midten der, så snakka dere om to forskjellige knapper på en gang og sånn. Hvordan syns du mengden fysisk aktivitet spillet ga deg var?
T: Det var sånn, det er ikke sånn at du blir sliten av det, direkte da. Men du får opp temperaturen. Jeg merket jo det at du blir varm.
I: Var det noe spesielt som fikk deg til å ønske å spille?
T: Eh. Det var motivasjonen for å slå motstanderen da. (Latter)
I: Er det på en måte noe spesielt som hadde skullet til for at dette var noe du ville faktisk oppsøkt i skolehverdagen din?
T: Tenker du hvis den hadde stått på skolen et sted, på en måte, montert?
I: Ja
T: Nei, bare tilgjengelig på en måte, så tipper jeg at jeg kunne brukt det sånn når man tar seg en tur rundt bygget da. (ID 8)
I: Ja, var det noe annet du syns var motiverende enn det å skulle slå vennen din?
T: Nei. (Latter)
I: Så det var på en måte det å spille sammen med ham var litt essensielt da?
T: Ja, det var det jo, det vil jeg påstå.
I: Fulgte du noe med på hva han gjorde underveis?
T: Ja, jeg gjorde litt det. Når det kom to stykker [knapper], hvis han, hvis de var på hver sin ende, hvis han gikk etter den ene gikk jeg gjerne etter det andre, du greier ikke å ta to. (Latter)
I: Nå kjenner jo dere hverandre. Hvordan tror du det ville vært å spille mot en fremmed?

T: Jeg tror det kunne gått helt fint. Jeg tror ikke det hadde vært noe, for det er jo ikke noe sånn personlig spill, på en måte, annet enn at du ser at det står en annen og prøver å hente disse lysene før deg da. (ID 17)
I: Ja, sånn nå står jo den her utenfor og vi snakket i sta om at du kunne gått bort og oppsøkt den hvis den sto på skolen. Hvordan tror det ville påvirket deg hvis det var mange mennesker som holdt på, i forhold til hvis det var ingen som er der?
T: Jeg tror jeg.. jeg vet ikke om jeg ville stilt meg i kø direkte. Det er jeg ikke sikker på. Jeg hadde nok blitt stående og sett på en stund, men jeg vet ikke om jeg hadde blitt stående å vente på å få en mulighet til å spille.
I: Hvordan hadde du følt det hvis, hvordan tror du du ville reagert hvis du spilte og det sto folk og så på deg? Er det noe du ville tenkt over?
T: Det kommer litt an på, hvis det er en veldig stor gjeng kan jeg nok sikkert føle litt ubehag rundt det, men hvis det er mer sånn normal mengde som det er her på skolen, tror jeg nok det hadde gått helt fint.
I: Tror du at dette spillet her kunne vært en sånn ice-breaker for å bli kjent med noen nye mennesker?
T: Ja, det vil jeg tro. Hadde sikkert gjort seg på en bar.
I: Så bare helt til slutt; er det noen ting som du ikke likte så godt ved spillet? Er det noe forbedringspotensial du ser noe sted?
T: Nei, ikke sånn direkte. Klargjøring av regler, kanskje. At du, rød må du ikke trykke på. Eller så ja, nei, vet ikke. Kommer an på hva hensikten er med spillet. Om man skal måle hva man lærer underveis, det vet ikke jeg.
I: Tusen takk!

Transcript 006

I: Okey! Dere kom jo bort hit uten oppfordring, på en måte..
T: Ja
I: Hva var det som gjorde at du hadde lyst til å spille?
T:Jeg gikk forbi her i pausen nettopp, også så det interessant ut at det er liksom, det er ikke en vanlig stand, men en stand som har noe mer spennende enn bare sjokolade, holdt jeg på å si, så jeg ble nysgjerrig
I: At det var en aktivitet?
T: Mhm.
I: Kan du fortelle litt om førsteinntrykket ditt av spillet?
T: Det var.. Det var veldig gøy, altså, sånt lite, raskt spill mellom to spillere, som er litt sånn, konkurranse er jo alltid gøy liksom, som du kan gjøre i pausen, liksom. (ID 9)
I: Var det noe du likte spesielt godt ved spillet?
T: Mm, ja, jeg likte at du får konkurrert mot en venn, også ja, jeg syns det er gøy. Også var det enkelt også.
I: Var det noe du ikke likte så godt?
T: Øhm, jeg fattet ikke helt hva den gule og den røde knappen, hva det betydde. Så skulle ønske jeg fikk litt mer forståelse av hva det var før jeg faktisk trykket på dem, og så at jeg fikk minuspoeng
I: Så du ville hatt en tydeligere forklaring eller?
T: Mhm!
I: Ja, skjønner. Hva gjorde det.. Gjorde det noe med motivasjonen din eller, sånn, det at du ikke forstod det helt?
T: Nei, altså, jeg vil jo prøve å gjøre det bedre til de andre knappene, så jeg kunne få tilbake poengene mine så...
I: Ja, skjønner. Men sånn utenom det, hvordan syns du det gikk å forstå spillet?
T: Jeg syns det var veldig selvforklarende hvordan det var, i alle fall at det er knapper på begge siden, og du spiller mot en annen person, og det er førstemann til mølla.
I: Så bra. Ehm. Har du prøvd noe sånt som det her før?
T: Ja, ehm, det har vært sånn stand hos DNB hvor de hadde sånn lignende opplegg, men dette var mye enklere å spille enn deres [DNB], da, så deres [DNB] knapper var litt vanskelige å trykke på, mens deres var.. registrerte hvor mange [knapper] jeg traff og sånt.
I: Vil du på en måte anse deg selv som en person som ofte tar i bruk sånn her type greie hvis det er tilgjengelig
T: At jeg har det hjemme, liksom?
I: Nei, at hvis du kommer til et sted hvor det finnes en type installasjon eller et spill, er det, skjer det ofte at du prøver det da?
T: Ja, mm, hvis jeg syns det ser gøy ut, liksom, kommer alltid bort og så.. mm
I: Ja, så kult. Da du kom hit i sta, før du spilte, hvordan følte du deg da, på en måte? Hvordan var humøret?
Humøret var litt drit, for vi kom jo rett ut fra en litt sånn kjip forelesning, holdt jeg på å si, så
I: Ja, hvordan føler du deg nå etterpå da?
T: Jeg har det gøy! Ja.
I: Er det på grunn av spillet? Eller bare fordi du har pause?
T: På grunn av spillet, og liksom at jeg spilte mot en venn. Nei, vi hadde konkurranse, og det var gøy syns jeg.

I: Så gøy å høre, herlighet. Hva syns du om mengden fysisk bevegelse i spillet?
T: Mmm. Den er jo ikke så stor, egentlig, for, altså jeg sto ganske nærme knappene, så jeg skulle kanskje stått litt lenger fra og kunne fått bedre overblikk over hvor lysene var og da løpt, da hadde jeg sikkert brukt kroppen litt mer, men jeg følte ikke det var helt nødvendig for jeg fikk på en måte ganske greit overblikk over hvor knappene var ved å bare se på siden og bare flytte litt på overkroppen, tenkte jeg.
I: Skulle du ønske at spille på en måte krevde mer fysisk bevegelse?
T: Ja, det hadde vel gjort det litt mer utfordrende, og det er jo alltid gøy, liksom.
I: Tror du det ville gjort noe, eller, for deg personlig, hadde det gjort noe med terskelen for å prøve, hvis det så mer utfordrende ut?
T: Nei, ikke for meg nei.
I: Nei, skal vi se. Ja, du sa, snakket om at å konkurrere var motiverende for deg. Er det noe annet ved spillet som gjør at du blir motivert?
T: Nei, ikke som jeg kommer på.
I: Nei, det er helt i orden. Fulgte du mye med på, på hva den andre spilleren gjorde?
T: Ja, altså, når ikke jeg så hvor knappene var, så så jeg jo at hun bevegde seg til den siden, for eksempel, og da fulgte jeg på en måte litt etter, eller bare sånn refleks, hvis du fatter hva jeg mener. Så det var litt sånt og jeg fulgte jo med på poengscoren, hvor mye hun hadde i forhold til meg og sånn.
I: Du kjente henne, regner jeg med?
T: Ja
I: Hvordan tror du det ville vært å spille mot en fremmed?
T: Altså, da tror jeg ikke at jeg hadde kommet hit og funnet en random person, akkurat, å spille mot.
I: Nei, men hvis du ble på en måte, plassert der sammen med en (latter) du ikke kjenner. Det er en litt unaturlig situasjon da, men, ja, hvis det var sånn på en måte. Hvordan tror du det hadde vært?
T: Altså det er alltid gøy å konkurrere eller spille spill, altså, det er jo som om hvis du skulle spilt play station mot fremmede på nettet, så jeg tror ikke jeg hadde hatt noe imot å spille mot noen andre. (ID 19)
I: Nei, så bra. Hvor kunne du sett for deg at denne installasjonen kunne vært plassert?
T: Ehm.
I: Eller hvor ville den vært passende, tenker du?
T: Jeg, ehm, jeg vet de har et sånt, det er noe som heter Vitenfabrikken i Sandnes i hvert fall. Da har de sånn mange sånn kunstneriske, men vitenskapelige installasjoner hvor du kan utforske ting, prøve ting.
I: Er det litt som Vitensenteret her i Trondheim, hvis du har vært der?
T: Jeg har ikke vært der, men de har i hvert fall ganske mange sånn.. du kan teste fysiske lover, altså, på forskjellige måter liksom. Og da har de sånn type lignende spill
I: Ja, skjønner.
T: Så jeg ser for meg sånn type senter.
I: Ja, på et senter, liksom. Tror du at, hvis den var plassert på campus, sånn som her da, tror du at du ville brukt den i skolehverdagen? I pauser og sånt?
T: Jeg hadde sett for meg å bare ta med meg en venn og spilt litt spill i pausen, ja.
I: Ja, så gøy! Nå sto det jo litt folk rundt her og så på. Påvirket det deg noe?
T: Nei, jeg tenkte ikke særlig på det.
I: Tenkte ikke over det?

T: Nei, altså, nå så lenge jeg ikke er alene, så føler jeg at når folk ser på er det ikke like skummelt fordi jeg spilte jo mot en annen person, og det var jo på en måte flere folk å se på..
I: Så at dere spiller jo på en måte sammen, selv om dere spiller mot hverandre
T: Mmm, så da følte jeg meg ikke like ukomfortabel hvis ikke, eller... som jeg hadde gjort alene, tror jeg. Men akkurat nå så følte jeg at...
I: Okey, så bra! Da var det egentlig det. Jeg har fått inntrykk av at du syns det var gøy, og at du er litt typen person som lett kan på en måte oppsøke sånne ting. Takk for din deltakelse.

Transcription 014

I: Jeg lurte på, kan du fortelle litt om førsteinntrykket ditt av spillet?
T: Jeg syns.. Altså fra jeg startet å spille, på en måte?
I: Ja, eller når du kom hit, eller ja.
T: Jeg syns det virket spennende.
I: Ja?
T: Eh. Veldig sånn, ja. Kult design og det virka veldig ordentlig, da. Så syns jeg konseptet var veldig gøy. Det var veldig enkelt å forstå, egentlig. Følte jeg bare kunne begynne med én gang. (ID 10)
I: Var det noen ting du likte spesielt godt?
T: Jeg likte litt det der at du måtte flytte blikket mye, da, fordi det var litt avstand mellom dem. Og du måtte være veldig aktiv og følge med. Eh. Også likte jeg bare at det var en fysisk aktivitet.
I: Ja, eh. Så.. Du hadde jo, du sa det var ideell, på en måte, plassering av søylene. Hva syns du om, på en måte, mengden fysisk bevegelse spillet ga deg?
T: Jeg syns det var veldig bra. Det var liksom ikke ubehagelig å bevege seg fra side til side, men det var fortsatt utfordrende, på en måte, liksom å være på da.
I: Ja! Hva.. Var det noe spesielt som fikk deg til å ønske å spille?
T: Mmm... Videre liksom? Å fortsette?
I: Nei, når du kom hit i dag, om det var noen spesielle ting som fikk deg til å ville..
T: Jeg syns jo lysene da. Fanger oppmerksomheten liksom. Og det at det er noe nytt, som man.. jeg hadde ikke sett det spesifikke designet før. Det var litt sånn «Oi, hva er det her?».
I: Ja. Når du fort.. Når du spilte, var det noe spesielt som du syns var motiverende? Noe element som bidro mer enn andre, for eksempel?
T: Det at det liksom teller ned, eller liksom den tiden du har, det var litt gøy. For da fikk du et inntrykk av hvordan du, altså, hvor dårlig tid du har da. (ID 27)

Transcript 021

I: Okei, vil du fortelle litt om hva du synes om spillet?
T: jeg synes det er bra, gjennomført og sånn det virker som det funker, og det er jo veldig kult, at prototypen deres funker såpass bra. Jeg synes det eneste jeg har av sånn feedback annet enn at kutta meg på knappen er at jeg synes de var litt harde å trykke på.
I: Ja, at de er for lite responsive eller?
T: ja, typ når jeg hadde type 10 i score ellerno sånt, så trykka jeg på en knapp også ble det ikke registret, så da, fordi jeg trykka for svakt eller what ever, men så måtte jeg liksom kjøre på litt og da... ja, det..
I: Hva gjorde det med, eller gjorde det noe med motivasjonen din i spiller, eller følelsen din eller?
T: nei, det var vel mer det at jeg var bevisst på at jeg måtte trykke hardt, og da på en måte tenkte jeg på det mens jeg spilte sånn nei nå må du trykke litt hardere enn det du tror, så..
I: Så en distraksjon eller?
T: det påvirka meg men jeg vet ikke om du kan kalle det en distraksjon, men det var jo en ekstra tanke da så på en måte, take that as you like.
I: ja, skjønner
I: Var det noe du likte spesielt godt å i spillet?
T: jeg synes måten lysene funker på er veldig, sånn, intuitivt, at du på en måte ser at den ene knappen lyser, trykk på knappen, det kommer sånt start signal, og så lyser det en knapp, med countdown, og da er det veldig intuitivt, trykk på denne og når det etterhvert kommer rød knapper, ikke trykk på rød, og den er statisk så det er på en måte ja, jeg synes det funker veldig bra og det kommer i tillegg da lydeffekter på countdown og sånt og du får lyd når du trykker på riktig og ja.. Så det virker veldig gjennomført og intuitivt.
I: Ja, så bra
T: Og det er lett å skjønne uten en bruksanvisning, eller instruksjonssett liksom ja
I: Er det noe du, utenom at knappene var skarpe og harde var det noe du ikke likte så godt?
T: Nei,
I: Nei
T: ikke egentlig
I: ikke noe som var forvirrende eller?
T: Nei, det var jo vanskelig å få høy score da, men det er jo på en måte en del av gamet.
I: hehe ja
T: det blir vanskeligere så, det var og ganske bra, adaptivt vanskeligere og vanskeligere etterhvert som det gikk, ja..
I: Så bra
T: Det likte jeg
I: Følte du at du fikk en utfordring på en måte?
T: Ja, tapte jo til slutt så da gjorde jeg jo det.
I: Ikke sant
I: Har du prøvd noe lignende som det her før
T. Ja, bå.. eller ja både ja og nei, det er jo sånn reaksjonstest, trening, men det er jo samme konsept, men det er jo på en måte ikke likt fordi det er ja, annerledes i guess.
I: Ja, men var det også en typ installasjon som var satt opp et sted?
T: ja, det er jo en type her er det jo en søyle med fire, men der er det en oppe til høyre, en oppe til venstre og en nede også en i midten.

I: Ja, ja okei
I: Hvor var det?
T: et eller annet idrettsarrangement.
I: Hva bruker du vanligvis pausene dine på, på campus?
T: hehe, spise og drikke kaffe.
I: okei, hehe så du oppsøker ikke noen aktivitet?
T: Nei
I: Nei, hvorfor ikke?
T: Nei fordi vi sitter på mastersal på gamle fysikk og det er stress å gå ned fra tredje etasje og opp igjen i en pause.
I: Ja, så det er for langt å gå rett og slett?
T: Ja, tja, det ja, føles ut som et tiltak
I: Ville du gjort hvis du hadde noen aktiviteter sånn i umiddelbar nærhet.
T: Ja, vi snakka når vi kom ned her at det hadde vært kult med et bordtennisbord eller et eller annet å gjøre, men det er ikke plass så på en måte, ja, pluss at det hadde vært forferdelig å sitte å jobbe ved siden av et bordtennis bord.
I: ja, haha, den ser jeg
I: Hvordan var humøret ditt i stad før du spilte? Da du kom hit
T: bra,
I: Nå etterpå
T: like bra, ja
I: så ingen endring?
T: Tjaa, ikke veldig mye endring, det har i hvertfall ikke blitt dårligere, også var det jo en morsom opplevelse også ja, påvirka er du jo, men ikke i negativ retning.
I: nei
T: Ja
I: Nei, så bra
I: Mengden fysisk aktivitet i spillet, hva synes du om den?
T: Nå er jo jeg over gjennomsnittet høy så det er på en måte, jeg beveget jo armene men ikke så mye mer enn det, men betydelig mye mer fysisk aktivitet enn å sitte stille og skrive på pcen.
I: Ja, Synes du det burde vært enda mer eller mindre enn det som er nå?
T: hvis det skal tilpasses min høyde så vil det jo være ikke spillbart for folk som er under 1.50 så da egentlig synes jeg det er fint som det er.
I: Mhm, men sånn for din del personlig. Ville du at det skulle vært større avstander for eksempel eller...
T: hvis jeg skulle hatt mye fysisk aktivitet og virkelig på en måte, så burde det kanskje vært litt større avstander?
T: Og kanskje mer sånn høydeavstand mellom knappene og. Men, ja, sett ut ifra en normal person, altså høydemessig så tror jeg det er fint sånn som det er nå da.
I: Ja
I: Da du var i gang med å spille, hva var det som motiverte deg til å gjøre en innsats i spillet?
T: Det var jo å prøve å få bedre enn den som spilte før meg da
I: Ja
T: Ja
I: så det var konkurranseinstinktet?
T: ja

I: ja
T: så har jeg ikke spilt det før da, så jeg hadde på en måte ikke noe å gå etter for min egen del.
I: Nei
I: Hva tror du ville vært, vært motiverende hvis du hadde brukt det her jevnlig?
T: Det hadde jo vært å få høyest mulig score, og hvis det hadde finnes noe scoreboard, prøve å komme på toppen av det.
I: ja
T: Ja, eller
I: type highscoreliste?
T: Ja, da har man en sammenligning da, og ja det er jo morsomt å være på toppen der.
I: sant ja, hehe
I: Fulgte du med på din egen score underveis?
T: Nei, det gjorde jeg ikke
I: Nei, hva med livene? Hvor mange liv du hadde igjen?
T: Ehh, ja, fordi jeg måtte sjekke det når knappen ikke reagerte så sjekka jeg bare sånn "aha okei, da mista jeg liv der", ja.
I: Ja, skjønner
T: så Ja, jeg fulgte med på det
I: Ja, men scoren også eller?
T: nei, fordi den regnet jeg bare med økte.
I: ja
T: ja, så sjekka jeg den til slutt.
I: Okei, mhm
I: Skal vi se
T: Jeg tror det hadde blitt litt mye å ta inn hvis du skal følge med til høyre og venstre og rett frem.
I: Ja
T: Så der var jeg mer fokus på å treffe knappen enn å se på scoren i guess.
I: Ja, skjønner.
I: Nå var det ikke så veldig mye folk her, da du spilte.
T: nei
I: men hvordan ville et eventuelt publikum ha påvirket deg?
T: Nei, det er klart det hadde jo blitt mer press da
I: ja
T: jeg vet ikke, jeg synes ikke det er sånn sykt kult å spille foran hvis det hadde stått liksom 20-30 stykk i ring rundt og sett så.
I: Nei
T: Jeg er kanskje ikke helt typen som stikker nesa frem og har lyst til å dra på, men ja. Så det hadde jo påvirka lysten til å spille kanskje. (ID 12)
I: I negativ.. grad eller?
T: Ja, hvis det hadde vært veldig mye folk (ID 13)
I: Ja
T: Men og sånn veldig mye folk som stod å så på, hvis det hadde vært satt opp på stripa hvor folk går frem og tilbake og bare skal et sted så, det har ikke noe påvirkning. (ID 16)
I: Nei, skjønner
T: Ja

I: Okei, Hva slags område eller sted kan du se for deg at denne installasjonen kan være egnet for?
T: Sted hvor folk er
I: Ja
T: type litt sånn som det er satt opp her hvor folk går mellom forelesninger og kanskje har en pause og det er ,rett bort det her med, jeg husker ikke hva de kaller det da, men...
I: Typ sånne vrimleområder?
T: at folk sitter og jobber ja
I: Ja
T: typ hvis du sitter her så er det ikke unaturlig å gå bort og ta et par runder og så gå å sette seg igjen. Da har du det du snakket om i stad, med en aktivitet til pause.
I: Ja
I: det tror jeg var det hele. Jeg har fått inntrykk av at du synes det her var ganske gøy.
T: Ja
I: At konkurranse er et lite motivasjonsaspekt.
T: Ja, det vil jeg si
I: For deg, mhm.

Transcript 009

I: Kan du fortelle litt om førsteinntrykket ditt av spillet?
T: Jeg starta det jo uten å mene det, jeg ville bare teste hvordan knappen var.
I: Ja
T: så jeg ble litt sånn.. visste ikke helt hva som skjedde
I: Nei
T: men ja, det var.. virka morsomt
I: Var det noe som du likte spesielt godt med spillet?
T: Det er jo konkurransen da, det sosiale aspektet.
I: Det sosiale aspektet ja.
I har det noen påvirkning på noe for deg når du spiller?
T: ja, altså det har jo en påvirkning at «navn på motspiller» knuste meg da, du blir jo litt sånn «faen», men jeg klarte faktisk ikke å se hva som skjedde på høyre siden.
I: Nei, var det så..lys var det noe du likte dårlig med det siden du sleit med å..
T: Nei, det tror jeg bare er sidesynet mitt
I: Ja
T: jeg har spilt lignende spill før der var tida foran meg, og da går det bra, men av en eller annen grunn så jeg ingenting på høyre sida. Jeg så bra på venstre side.
I: Ja, ikke sant, men hva, så du har vært borti ting som ligner på dette her før da?
T; Ja
I: Ja, hadde det noen effekt på motivasjonen din for å prøve dette her?
T: Ja altså, det kan hende det ja, for det var gøy, det var morsomt, men det var enda mere kompetitivt.
I: Ja, okei, så det konkurranseaspektet da det har veldig stor påvirkning på deg?
T: Ja [konkurranseaspektet har veldig stor påvirkning på meg]
I: Hvordan synes du det gikk å forstå hvordan spillet fungerer?
T: Det var ganske enkelt sånn å bare trykke så fikk du jo poeng, det var litt vanskelig å vite hvem som hadde hva av poeng. Selv de som arrangerte ikke forstod hvem som hadde poeng der, så ja.
I: Men da det scoreboardet var det noe du fulgte med på underveis.
T: Ja, det var rett foran meg da, så det var det jeg så på da.
I: I(latter) kke knappene men det?
T: ja, det var den, den så jeg lett da, mhm
I: Okei, du sa du så på scoreboardet og litt i midten, gjorde det da også at du så over på hva han du spilte mot gjorde?
T: Ja, det tror jeg faktisk, jeg reagerte jo nesten mer på at «motspillers navn» reagerte enn at jeg selv reagerte på at knappene var der.
I: Ja, ikke sant, så det å se han det hadde.. påvirket det deg i noen grad?
T: Ja, det gjør meg mer competitive og da, men samtidig så vet jeg ikke om det påvirket meg positivt eller negativt, det er jeg usikker på.
I: Ja, ikke sant. Da du kom hit så sa du at du følte deg litt slapp og sliten i dag, hvordan følte du deg underveis i spillet.
T: Mhm, jeg fikk jo påvist det enda mer, at jeg var slapp og sliten, jeg hadde ikke samme iveren som min motspiller hadde
I: Nei, hvordan.. hadde det noen påvirkning på motivasjonen din
T: Ja, underveis ja, mhm, jeg fikk ikke til det jeg ville få til, og da ble jeg demotivert

I: Ja, ikke sant. Hvordan føler du deg nå i etterkant, bidro spillet til noen endring i humør?
T: Nei, egentlig ikke, jo, jeg ble mere sliten.
I: Du ble enda mer sliten?
T: ja, for jeg fikk påvist at jeg var sliten, og da fikk jeg en sånn psykisk knekk som gjorde at jeg var enda mer sliten enn det jeg var.
I: Var det noe spesifikt element med spillet som du tror gjorde det, eller, var det bare formen du er i?
T: konkurranseaspektet
I: Ja, at du tapte?
T: ja, at jeg var så dårlig (latter)
I: Ikke sant, nå så står jo denne utenfor en forelesningssal, er det noen steder du tenker at en sånn type installasjon er spesielt godt egnet for?
T: kjøpesenter, flyplasser, steder der på en måte du kanskje bruker litt tid da, og må vente litt.
I: Ja,
T: Egentlig spesielt flyplasser. Når du har mye tid da så er det veldig gøy å kunne gjøre noe.
T: Jeg har sett fotballspill der tidligere og det har vært ganske morsomt sånn der det er sånn overhead eller ikke overhead, sånn prosjekter som viser så du driver å interagere så kan man spille fotball på bakken da. Og det var det flere som spilte og jeg tror dette her kan være noe liknende da, og få folk opp å stå litt mens de må vente på å kunne boarde da.
I: Ja, så de situasjonen er det situasjonen hvor du selv tror at du kunne tenke deg og brukt den her type installasjon.
T: Hvis jeg flyr med noen ja.
I: Ja, fordi ja, nå spilte jo du mot en du kjenner, hvordan tror du det ville vært å spille mot en du ikke kjente
T: Det [å spille mot en fremmed] hadde jeg nok unngått.
I: Er det noen spesielle ting som skal til for at du ville brukt den annet enn du kjenner personen du kan spille med`
T: jeg vet egentlig ikke helt på det altså. Jeg vet ikke, jeg har gjort litt ja, fordi for min del så er det sånn jeg har ikke noe sånn, jeg har ikke noe behov for å på en måte konkurrere mot noen andre enn folk jeg kjenner. (ID 21)
I: Nei, ikke sant. Men sånn hvis du spiller med noen du kjenner hvordan tror du du ville blitt påvirket av at det var publikum rundt?
T: Det spørs om jeg kjenner publikum.
I: ja
T: Er det helt randoms på en flyplass er det ikke så farlig, er det en gjeng som jeg kjenner og er rundt der så er det kanskje litt annerledes. (ID 15)
I: Okei, helt tilslutt, sånn bevegelse, hva synes du om mengden bevegelse du fikk ved å spille
T: den var helt grei, jeg var jo det gikk jo sakte for meg da, så det... men ja, nei det var helt greit, jeg ble ikke noe sliten ellerno sånt, men det var litt lange bevegelser.
I: Ja, synes du det burde vært krav om noe høyere aktivitet?
T: det spørs vel litt hva man vil ha da, om det er, hvis du vil ha trening så er det jo selvfølgelig burde vært høyere intensitet fordi.. men sånn for å ha det gøy å ha noe å gjøre mellom ting da eller på vei til steder så ville jeg ikke hatt noe særlig høyere intensitet da for det er kjipt hvis du blitt svett, da vil du ikke på en måte spille noe særlig mer da.
I: Eh, tror du også humøret du var i hadde noen påvirkning på hvor mye du bevegde deg?
T: Ja, jeg er trøtt

Transcript 004

I: Ok! Vil du først fortelle litt om førsteinntrykket ditt av spillet?
T: Ja, jeg vet ikke hva jeg skal si. Det er et enkelt spill, må bare trykke fortest. Prøve å fordele hendene.
I: Du må tenke taktikk liksom? Hva syns du om spillet da, etter å ha spilt det?
T: Jeg syns sånne spill er veldig artig. Jeg blir veldig engasjert! (ID 34)
I: Hva er det med spillet som gjør at du blir engasjert?
T: At jeg skal prøve å vinne da?
I: Så det er konkurranseinstinktet som tikker inn?
T: Ja.
I: Var det noe du likte spesielt godt ved selve spillet?
T: Ja, det er nå, det er enkelt, og du blir liksom gira selv om det er enkelt på en måte. Engasjert.
I: Var det noe du ikke likte så godt da?
T: Nei, tja, det var kanskje, kunne fått informert at rød [knapp] var minuspoeng, for eksempel da.
I: Ok
T: Men det er jo egentlig litt innlysende.
I: Tja, det er ikke sikkert det. Ja, hvordan, nå sa du litt om det i sta da, men hvordan syns du det gikk å forstå poenget med spillet?
T: Jo, det var i grunn ganske greit det.
I: Var det noe som var forvirrende?
T: Nei, ikke med selve spillet. Det var mer sånn taktikken som kan bli forvirrende.
I: Ja, tror du det ville, eller, ville det vært lettere neste gang du spilte? Å komme inn i det?
T: Ja, det tror jeg
I: Har du prøvd noe som det her før?
T: Ja.
I: Hva slags, hva var det?
T: Det var på opptak til forsvarets flyskole
I: Oi, okey!
T: De har mange lignende, sånn type tester
I: Sånn type installasjoner som dette?
T: Ja, sånn for å teste reaksjoner og multitasking
I: Okey, kult! Pleier du vanligvis å oppsøke aktiviteter i pausene på, på skolen?
T: Nei, egentlig ikke. Det var bare å ha god tid, og så litt interessant ut.
I: Okey. Da du kom hit i sta, hvordan vil du på en måte beskrive humøret ditt, eller følelsen din, eller.. hvordan følte du deg?
T: Nei, det er en god dag!
I: Ja, det er god dag? (Latter)
T: Ja, så...
I: Bidro spillet til noen endring i humør?
T: Ja, positivt i så fall
I: Ja, hvordan da?
T: Nei, ble litt gira. Også vant jeg i tillegg da. Det er litt artig.

I: Så bra! Man må jo bevege seg litt når man spiller. Hva syns du om mengden fysisk bevegelse i spillet?
T: Jeg har jo ganske lange hender, så det blir litt mindre. Men det er like mye psykisk belastning, skulle jeg til å si da, som fysisk.
I: Skulle du ønske at spillet krevde mer fysisk bevegelse?
T: Klart, hvis det hadde vært lengre avstand [mellom søylene] måtte du prioritert mere hvilken [knapp] du skal ta først.
I: Hadde det vært bedre, eller mer gøy eller mindre gøy hvis du måtte bevege deg mer, tror du?
T: Nei, jeg tror kanskje, nei, jeg er litt usikker. Det er fordeler med begge deler.
I: Hva var det som på en måte fikk, gjorde at du fikk lyst til å spille?
T: Nei, så nå interessant ut. Også visste jeg ikke egentlig hva som, så jeg var litt nysgjerrig.
I: Hva var det som bidro til motivasjonen din i spillet da, når du først var i gang?
T: Nei, det var nå å vinne
I: Konkurranseinstinktet igjen, ja. Du kjenner han du spilte mot?
T: Ja.
I: Fulgte du mye med på hva han gjorde underveis?
T: Nei, men jeg la litt merke til, etterhvert, hva han prioriterte når det var to stykk [knapper] for eksempel.
I: Ja, hvordan tror du det ville vært å spille mot en fremmed?
T: Jeg tror ikke det ville endret så mye, for jeg tenkte mest på mitt eget spill, så... (ID 18)
I: Tror du det kunne fungert som en type ice-breakeraktivitet?
T: Ja, absolutt, det kunne det! For det, ja...
I: Hvis den her var plassert på campus, er det noe du tror du ville brukt i skolehverdagen?
T: Kanskje ikke så veldig ofte, men det hadde vært artig og hatt en konkurranse med noen..
I: Ja, en gang iblant?
T: Ja.
I: Okey, tusen takk! Eller nei, en ting til. Nå var det jo ikke så mye folk her [da du spilte], men hvis det var sånn som nå, tror du det ville påvirket dine, din innsats i spillet? Hvis det var mye publikum?
T: Nei, jeg var så fokusert på spillet. Jeg tror kanskje det kunne påvirka motivasjonen til å oppsøke spillet.
I: Ja, okey, hvordan da? Negativt, eller...
T: Ja...
I: Ville det gjort at du ikke ville?
T: Ja
I: Ok, hvorfor det?
T: Hvis det var kø for eksempel, hvis det var mange som var før du begynte, sånne ting.
I: Ja, okey, da sier jeg takk for din deltakelse.

Transcript 012

I: Ja, kan du fortelle litt om hvordan du syns dette var?
T: Jeg syns det var morsomt.
I: Ja?
T: Ja, jeg syns det.
I: Har du noen andre tanker om førsteinntrykk av spillet?
T: Eh. Om jeg har noe annet av førsteinn.. Hm okay, nå må jeg.. jeg må tenke litt her nå. Det vekket i hvert fall konkurranseinstinktet mitt ganske kraftig, det må jeg si. Annet enn det var det veldig enkelt og greit å forstå da.
I: Så bra. Hva var det som gjorde at konkurranseinstinktet kom fram?
T: Du ser jo på motstanderen din hele tiden da, i hvert fall. Det var gøy. Ja. Jeg tror det.
I: Var det noe du likte spesielt godt ved spillet?
T: Eh.. (Latter) At det var enkelt å forstå da.
I: Var det noe du ikke likte like godt?
T: Nei. Jeg er fan!
I: Ja, kult (Latter). Du sa du syns det var greit å forstå hvordan det funket? Var det noe.. Kan du på en måte peke på noen spesielle elementer som bidro til at den forståelsen var lett da?
T: Fargebruken, for eksempel. ja. Rødt og grønt er topp!
I: Var det noe som var forvirrende?
T: Nei, jeg tror.. Bare når de bytta.. Eller da det var neste runde, så var jeg ikke klar over at det skulle komme to på én gang, men det skjønte jeg jo etter første gang da.
I: Hadde det noen påvirkning på motivasjonen din?
T: Nei, det hadde ikke det (Latter).
I: Har du prøvd noe sånt som det her før?
T: Eh. Kanskje på sånn, da jeg var liten og spilte PlayStation, eller sånn, hva heter det? Sånn?
I: EyeToy? Eller Kinect?
T: Ja!
I: Pleier du å oppsøke aktiviteter i pausene på skolen?
T: Nei, men jeg burde kanskje gjøre det [oppsøke aktiviteter i pauser]? (Latter) Men jeg er bare på Realfagsbygget da, her er det ikke noe.
I: Ja, tilbudet..?
T: Ja, på Stripa er det for eksempel den ping-ponggreiene som er gøy, men jeg gidder ikke å gå bort dit bare for å spille ping-pong.
I: Nei, hva skal til da for at.. Hva er, på en måte, viktigste krav, på en måte, for at du skal gidde.
T: At det er tilgjengelig og at det ikke tar for lang tid med et spill, på en måte, da.
I: Skjønner. Hvordan følte du deg da du kom hit i sta? Sånn humørmessig?
T: Følte meg bra. Eh. Glad. Fornøyd.
I: Nå etterpå da?
T: Fortsatt det samme.
I: Fortsatt det samme?
T: Ja.
I: Vil du si at.. Hadde spillet noen påvirkning på humøret ditt?
T: Ja, Eller det, ja, jeg ble.. Jeg tenkte i hvert fall ikke på det som stresset meg før jeg kom, selv om jeg kanskje ikke sa det i sta, jeg var nok litt stressa.
I: Så bra! Mengden fysisk aktivitet som spillet krever, hva syns du om den?

T: Jeg syns det var greit. Du måtte jo strekke deg litt, men det var fint det!
I: Burde det vært mer eller mindre?
T: Nei, jeg syns egentlig.. eller sånn.. fordi.. Nei, jeg syns egentlig, liksom, fordi du må ut, du kan ikke bare stå stille og strekke ut henda, men det kan jo ha, kanskje hvis man er kjempelang.
I: Ja, det er jo noen som bare står sånn [Lydeffekter]. De må jo bruke sidesynet litt annerledes, og det blir på en måte et litt annet spill for dem da. Men for deg, så syns du det var passe?
T: For meg var det fint. Fordi hvis man skal lenger unna, så må man jo i så fall la det gå mer tid da, eller sånn.. Nå hadde vi jo god tid, men hvis jeg hadde kommet til tredje runde, jeg vet ikke hvor fort det går da, men kanskje det går for fort da hvis du må bevege deg ennå lenger.
I: Hva er det som er motivasjonsfaktorene dine i spillet?
T: Å vinne!
I: Å vinne (Latter). Er det noe annet enn det som er motiverende?
T: Jeg vet ikke.
I: Nei?
T: Nei, er det ikke det som, ja.. Ha det gøy, da.
I: Hvilken verdi har det for deg å spille sammen med andre?
T: Det er jo stor verdi, det er jo sosialt, ja. Så selvfølgelig, stor verdi!
I: Fulgte du med på hva jeg [motspiller] gjorde underveis?
T: Jeg, på en måte, reagerte på det etter at jeg hadde gjort det jeg gjorde, på en måte, eller sånn.. Jeg reagert på om [motspiller] var saktere eller raskere enn meg, på en måte. Ja.
I: Bare registrerte meg [motspiller], på en måte?
T: Ja.
I: Tror du at du kunne spilt dette mot en fremmed?
T: Da tror jeg det må liksom opparbeides litt sånn at det er det som er greia, på en måte. Kanskje. Sånn «prøv dette spillet mot en fremmed!», men ja, fordi at det, altså, jeg kunne jo gjort det, men da må det være noen andre som også er villig til å gjøre det da. Så kanskje hvis det opparbeidet et slags sånt.. (ID 22)
I: At det er greia?
T: Ja, på en måte.
I: Ja. Så du ville ikke gått bort til en random og spurt «Hei, skal vi spille?»
T: Nei, det ville jeg ikke gjort.
I: Skal vi se. Ja, hvor kan du se for deg at denne installasjonen kunne stått?
T: På Gløs, da eller?
I: Ja, eller.. hva slags type steder?
T: Det kunne jo, og nå tenkte jeg på fordi jeg nettopp har vært ute og flydd, men det.. jeg følte det var litt sånn typisk, sånn på, eller man kan ha det på flyplasser og sånn, for eksempel, fordi man.. eller sånn.. men da, kanskje man må ha en barne-size og en voksen-size, da. Men det kan egentlig være veldig gøy. Ellers sånn liksom, ja. På steder der folk venter, tenker jeg er ganske bra, ja. Ellers så er det jo gøy å ha det på campus da. Mhm.
I: Kult! Eh. Nå var det ikke så kjempemye publikum da vi spilte, men klarer du å, på en måte, hypotetisk se for deg hvordan det ville vært hvis det var mye folk rundt. Hvordan ville det vært for deg?
T: Det tror jeg hadde gått helt fint!
I: Det ville ikke hatt.. Ingen påvirkning?

T: Kanskje jeg hadde fått ennå mer konkurranseinstinkt, eller for å prøve å vinne?
I: Ja, vise deg frem liksom? (Latter)
T: Ja (Latter)
I: Okay, jeg har fått inntrykk av at du syns det her var ganske gøy, og at du ser for deg at denne kunne vært på campus, flyplasser, offentlig rom hvor man venter.
T: Ja.
I: Thank you, så bra!
T: Vær så god!

Transcript 013

I: Hvordan synes du det var?
T: Det var gøy, det var forseggjort og ja, det var liksom, det ble, altså, det ble, først var det lett og så ble det vanskeligere da og det gjorde liksom at det ble litt mer utfordrende og spennende.
I: Ja.
I: Var det det noe du likte spesielt godt ved spillet?
T: det var vel... nei bare at høyt tempo og moro.
I: Ja, var det noe du ikke likte så godt?
T: Jeg tror det var, det gikk litt mer på meg, men jeg skjønte ikke helt hvilken taktikk jeg burde ta før jeg liksom begynte, men det fant jeg ut av etterhvert. Så, men det var på en måte, det gikk på meg selv da. (ID 41)
I: Tror du det hadde vært lettere hvis du hadde sett noen andre spille det først?
T: Ja, absolutt
I: Skjønner
I: Hvordan synes du det gikk å forstå hvordan spillet fungerte?
T: det gikk egentlig ganske, men har jo sett noe lignende før, så det var på en måte, det gjorde at det ble lettere.
I: Er det noe spesielt du tenker på, er det noen spesielle installasjoner du har prøvd?
T: nei, altså bare sånn som ape buzz når man skal dunke de derre...
I: Ape buzzt?
T: Ja, Ape buzz
I: Åja
T: Det der hvor man skal dunke de tingene ned i bare at man skal med en gang det kommer opp noe så skal man på en måte trykke på det.
I: Er det litt sånn wack a mole aktig?
T: ja, ja, ja, noe ja, ligner jo på det da.
I: skjønner
I: Hvilke elementer var det som på en måte gjorde det lett å forstå spillet?
T: Jeg tror at det var grønt og rødt, typ grønt skal man trykke og rødt er på en måte no go.
I: Nice
I: var det noe som forvirra deg?
T: Nei, ikke når det hadde blitt forklart på forhånd at rødt på en måte ikke skulle bli trykke på så gikk jo det egentlig greit.
I: Ja, så bra!
I: Har du, eller vanligvis i pausene dine på skolen, pleier du på en måte å oppsøke aktiviteter eller noe sånn?
T: Nei, det gjør jeg ikke, jeg prøver å ta igjen noe lesing, eller så sitter jeg og chatter med de andre.
I: Ja, hvis det hadde vært større tilgang på ting, hvordan tror du det ville vært da?
T: Da tror jeg at jeg kunne gjort sånn som dette her, på en måte. Ja, man ser jo det at det er mange som har lyst til å prøve det i pausen. Sånn alle, vi stod jo en gjeng der og alle venninnene mine var sånn «jeg har lyst til å prøve» så var jeg sånn ja, gjør det da, gjør det! (ID 23)
I: Hva var det som gjør at de ikke gjør det tror du?

T: Nå tror jeg, tror det bare var at de var sånn «jeg vil ikke bli filma»
I: Okei, skjønner. Hm, du kan si til dem at de kan få prøve uten å bli filma eventuelt.
I: Ja, hvordan følte du deg før du spilte, da du kom hit i stad?
T: Nei, jeg visste jo ikke hva jeg skulle forvente, men jeg har jo sett at folk litt har gjort det før så jeg var litt sånn okei det er nå, også var jeg litt redd for jeg var så støl så jeg var litt sånn må jeg virkelig bevege meg, men når jeg kom i gang så ble det bra.
I: Du sa at du kom fra en kjedelig forelesning, har du.. hvordan altså hjalp spillet på..
T: Ja, det tror jeg, nå er jeg litt mer gira på å komme meg inn og lære noe faktisk.
I: Så bra, yay!
I: Vi snakket litt om mengde fysisk aktivitet, eller mengden bevegelse som spillet krever, hvordan synes du det var, nivået på en måte?
T: helt passe, altså jeg blir ikke svett, jeg blir ikke på en måte det vil man jo prøve å unngå når man er på skolen, men egentlig bare greit nok til at man ble litt gira, men ikke for mye til at man ble andpusten.
I: Synes du det det burde vært mer eller mindre?
T: nei, jeg synes det var passe
I: Helt fint, ja så bra!
I: Da du kom i gang med spillet, hva var det som motiverte deg til å fortsette å gjøre en innsats?
T: Når jeg så at jeg fikk poeng.
I: Ja, hehe
T: Og ikke miste liv, men så skjønte jeg ikke helt hvordan man mistet liv for jeg var sånn jeg har jo tatt alle de grønne, men så gikk de, sånn så jeg så at de prikkene gikk ned så det var på en måte telte ned og det skjønte jeg litt for sent da. (ID 47)
I: Okei, skjønner.
I: Hva skal til for at du kunne brukt den her i hverdagen?
T: Hm, ikke for lang kø, tilgjengelig og gjerne ikke et sted hvor man er veldig uts.. altså at man ikke, at alle kan se at du står og på en måte spiller.
I: Okei
T: Sååå, ja jeg vet ikke kanskje ikke sånn midt på stripa, men for eksempel der hvor det er sånn bordtennisbord så er det en liten avsides krok på en måte, bare ja sånn type ting, men alle vet at det er der, men man blir liksom ikke eksponert fra alle.
I: ja, tror du et stort publikum ville hatt noe å si på terskelen til å..
T: Ja,
I: ja, hvorfor det?
T: Bare fordi man blir sånn, nei, bare å gjøre noe foran et stort publikum er alltid noe man prøver å unngå.
I: Okei så selvbevissthet på en måte?
T: ja, ja
I: Du får jo en score, og du nevnte at du ville du ville på en måte få poeng, men var det et viktig element for deg i spillet?
T: ja, for det er jo på en måte da ser du på en måte at du, hva skal man si, man får noe igjen for arbeidet sitt på en måte, samme som å male en vegg at man ser at den blir den fargen så når du spiller så får du poeng for det liksom. (ID 31)
I: Ikke sant.
I: Hvis på en måte vennegjengen din hadde stått der og bytta på å spille litt og sånn, hvilken verdi tror du scoren ville hatt for deg da?

T: Høy, høy [verdi med score], altså konkurranseinstinkt er jo alltid viktig. (ID 30)
I: Okei, så du ville prøvd å slå scoren til de andre.
T: ja, ja, det er jo gøy, gøy element.
I: Okei da tror jeg vi har vært gjennom alt, jeg har fått inntrykk av at du synes det var ålreit.
T: ja, det var gøy
I: Og at konkurranse mot deg selv og eventuelt mot andre som også har spilt er viktig for deg
T: Ja, viktig element.

Transcript 019

I: Kan du fortelle litt om førsteinntrykket ditt av spillet?
T: jeg synes det var veldig gøy spill egentlig
I: Ja
T: det var litt sånn stressende på en måte, men jeg synes det var gøy, det var litt annerledes enn hva jeg har drevet med før, det var litt som sånn som når man slår på sånn der grevling.
I: Ja, sånn wack a mole?
T: ja
I: Ja
I: Så, har du prøvd noe som ligner på dette før da, eller?
T: nei egentlig ikke, har bare sett det på en måte
I: ja
T: Så nei, det har jeg ikke
I: Nei, var det noen ting du spesielt godt med spillet?
T: jeg likte det på en måte at man må fokusere eller må man det er liksom en ting du fokuserer på da og det er å få med deg sånn hvor de grønne knappene er. (ID 25)
I: ja
T: så, ja, man får liksom et litt avbrekk i.. ja
I: Ja
I: var det noen ting du ikke likte så godt?
T: Ikke egentlig som jeg kan komme på, det var litt mye lys bare, men det, så det var litt sånn wow, men det er det eneste, men det må det jo nesten være
I: ja,
I: Var det noe du synes var spesielt motiverende?
T: Det er jo det på en måte at det er, at det er, at man skal prøve å fortest mulig på en måte og at du den teller ned så da ser man liksom okei da må jeg kjappe meg til å trykke på de knappene. Så det er vel det.
I: Mhm
I: Den scoren og livene, jeg så du titta litt, eller du sa ånei når du mista et liv
T: Ja
I: Fulgte du mye med på det underveis?
T: Nei, jeg fulgte ikke med på den scoren eller tiden i det hele tatt, egentlig
I: Nei
T: Eller jeg fulgte med på tiden på de grønne når de gikk ned på en måte.
I: ja
T: Men jeg synes ikke det var så vanskelig å ikke treffe de rød
I: Nei
T: Det var greit, kanskje litt verre hvis man er fargeblind
I: Ja, det var det da
I: Sånn, når du kom hit i stad, hvordan følte du deg da, sånn humørmessig?
T: Helt okei, jeg var, skulle egentlig sitte å jobbe med bachelor, så jeg vet ikke jeg, jeg var ikke sånn supermotivert for det, men
I: Nei
T: Det jeg føler dette fikk meg litt i gang kanskje
I: Ja?
T: sånn litt pulsøkning så vidt og ja

I: Ja, så du, har det hatt noen påvirkning på humøret ditt?
T: Jeg synes det var veldig gøy, eller det var liksom det er ikke hver dag man gjør sånt så ja.
I: Nei
I: Er det noe du kunne gjort oftere?
T: ja
I: Ja
T: Spesielt når det noe sånn konkurransebasert greier, så blir det sånn "okei, klarer du fortere?" eller ja.
I: Ja
I: Så konkurranse er det noe du ser på som et..
T: det [konkurranse] er en motivasjon (ID 32)
I: Det har en påvirkning på deg?
T: Ja
I: Ja
I: La du noe merke til noe lyd underveis?
T: Den pep vel når man trykka på den tror jeg
I: ja
I: Hadde det noen påvirkning på deg?
T: bare sånn at det på en måte var en bekreftelse på at du faktisk har trykka på de.
I: Ja
T: at de ikke bare forsvinner, for at da er det ikke så lett å få med seg om de faktisk forsvinner.
I: Nå så du jo at du følte du hadde vært litt i aktivitet og sånt, hva synes du om mengden bevegelse spillet ga deg?
T: Hvordan tenker du på da? Sånn i forhold til noe annet, eller bare?
I: Ja, eller altså sånn synes du det var ok mengde bevegelse, synes du det kunne vært mer..
T: Nei, jeg synes det var ok det trengte ikke å ha vært mer i hvertfall, jeg synes det var, det var bra lengde på spillet.
I: Ja
T: Uten at man liksom blir for svett, hvis man hadde man holdt på med det der i en time så tror jeg det hadde blitt ganske, da hadde du fått deg en treningsøkt.
I: Ja, haha
T: Litt sånn på tå hev hele tiden.
I: Den scoren, du sa du ikke tenkte noe over den underveis, men i etterkant er et noe som har påvirkning på deg?
T: Nå vet jeg ikke helt hva det ble da, men
I: nei, du har glemt det?
T: ja, jeg har glemt det, så jeg vet ikke, om det, nei jeg , jeg fikk liksom ikke med meg om at det var liksom eller jeg skjønte det nå i ettertid på en måte er sånn hvem som er best og la la la, men det var ikke så obvoius liksom at, det var ikke noe sånn highscore greie liksom.
I: nei
I: Hvilke steder tenker du at den her type ting er egna for å stå?
T: Det er et veldig godt spørsmål, hvis det på en måte skal, spørsmålet er litt hvilken sammenheng man skal bruke det til
I: ja
T: Eller sånn hva som er planlagt for det.
I: Mhm

T: Jeg vet ikke om dere har noe på en måte..
I: det er jo litt sånn ut i fra hva folk kunne tenke seg da, men nå virka det som du synes det var et fint avbrekk.
T: Men det er retta mot studenter eller?
I: akkurat det her er retta mot studenter ja
T: ja
T: Ja, nei egentlig bare sånn, jeg synes det passer veldig bra her, bare sånn, men det er jo fordi at jeg sitter i 4 etasje da, oppå R så det er bare å ta heisen ned også kan man liksom..
I: Er det noe du kunne oppsøkt hvis det stod her til vanlig?
T: ja, det absolutt, eller hvis det står sånn på it bygget eller et eller annet,
I: Mhm
T: sånn i den inngangen mellom der, men da blir det kanskje mye for det er det jo også sånn der andre greier, den dere brillene og sånn, som regel. At det blir liksom litt sånn interaktiv sone type greier.
I: Ja
T: jeg synes det er veldig gøy
I: Ja, nå så var det jo ikke så mange mennesker rundt her, hvordan tror du det ville påvirka deg at det var masse mennesker som stod å så på?
T: jeg tror nok man hadde fått litt mer prestasjonsangst eller liksom tenkt litt mer over hva man gjør.
I: ja
T: men, jeg vet ikke det er, det hadde sikkert påvirket meg litt, men ikke i så stor grad, men da blir det jo det konkurranseaspektet blir liksom litt mer tydeligere da, hvis man er sånn står rett ved hverandre og bare er sånn okei nå er det din tur også prøver man å gjøre det kjappere.
I: Ville du på en måte, du sa at du synes det var gøy, ville du ansett deg som en leken person?
T: Jaa
I: Ja
T: Ja, det vil jeg si. Jeg er liksom jeg er veldig glad i kanonball og sånt, melder meg opp på det. Det var et dårlig eksempel, men ja
I: det er jo en lek det og.
I: Da tror jeg egentlig vi er ferdig, men da har jeg fått inntrykk av at du synes at det var passe mengde fysisk aktivitet og at det var et fint avbrekk fra hverdagen?
T: Ja, absolutt, veldig bra.

Transcript 017

I: Okei, klar for et lite intervju?
T: ja
I: Vil du bare fortelle litt om hvordan du synes det var?
T: det er gøy. Det er jo gøy å teste reaksjonen og, og hvor kjapt du klarer å oppdage at det blinker, så ja, nei jeg synes det var moro.
I: ja.
I: Var det noe spesielt du likte godt?
T: ja, eller liksom jeg tror man kan gå for litt sånn, ja altså hvis målet ditt er å gjøre det best mulig, så er det jo litt sånn taktikker du kan gå for. Jeg prøvde å bare se mest i midten og bruke liksom periferalsynet, men når det går fort nok så føler man bare man går frem og tilbake egentlig, men nei, veldig utfordrende morsomt å se hvor raskt man klarer å reagere (ID 42)
I: ja, var det noe du ikke likte så godt?
T: Nei, ikke som jeg kommer på
I: Nei, nei så bra
I: Hvordan synes du det gikk å forstå hvordan spillet fungerer?
T: Det var greit, det er liksom når det er fargekodet så er det lett å se, og de er jo stor kontrast på de, så lett å skjønne om du enten ja, hvilke du skal trykke på.
I: Var det noe som var forvirrende?
T: nei egentlig ikke
I: Så bra
I: Har du prøvd noe som ligner på det her før?
T: ja, jeg har prøvd noe lignende ja, på, det var vel senest på en da var det lå på bordet og da var det to mot hverandre og så var det om å gjøre tappe på flest, jeg eller altså det var sånn reaksjonsspill det og da. Det var ikke likt liksom, men noe lignende
I: Hva slags anledning var det
T: det var bare en stand på karrieredag som hadde en sånn lek for å sikkert simulere til, ja at folk
I: multitasking liksom eller?
T: Ja, eller bare at folk skulle komme innom og ja, at det er litt gøy på standen, men ja.
I: men det var konkurranse?
T: ja, så da var det vel to mot hverandre, men jeg tror på en måte du score litt sånn hadde en singleplayer score samtidig, jeg husker ikke helt jeg, men så kom hvertfall resultatene opp på skjermen.
I: Kult.
I: Sånn i hverdagen, hva bruker du vanligvis pausene dine mellom forelesninger eller hva bruker du pausene dine til?
T: nei, det kan være hva som helst
I: Har du pauser? Hehe
T: Scrolle på mobilen, svare på ting hvis det er mail eller slack eller hva det nå skulle være
I: Nei, så du oppsøker ikke bordtennis eller foosball eller?
T: nei, men jeg er jo veldig glad i å spille da, men det er mer sånn nå har ikke jeg så mye tilgang på det lenger.
I: men er det mer tilgjengelighet det går på?

T: Ja, sånn der hadde jeg hatt play station i kollektivet for eksempel så hadde jeg brukt mye tid på det.
I: Ja, okei sånn ja
T: men akkurat i pauser så nei da er det om å gjøre å bare få seg et pust liksom og få tiden til å gå, litt avhengig av hvor sliten man er og sånn da.
I: Ja
I: Hvordan var, ja apropos sliten, hvordan humøret da du kom hit i stad
T: Bra, hatt en relativt rolig morgen så ja, det var morsomt å, ja, få opp pulsen litt
I: Ja, Synes du, eller er det noen endring i liksom i hvordan du føler deg da, ikke nødvendigvis humør
T: Ja, jeg synes jo det er gøy å ja, man kjenner det pumper litt og blir litt mere årvåken kanskje, det vil jeg si. (ID 37)
T: man får liksom brukt både kropp og sinn samtidig. (ID 26)
I: ja, nice
I: Mengden bevegelse, fysiske bevegelse som spillet på en måte krever, hva synes du om den?
T: Bra, holdt jeg på å si, den er jo, jeg blir jo, jeg kunne for det meste stå på et sted og flytte meg, eller altså med bena planta fordi man har lange armer liksom, så det er det jo mest på en måte bare, ja litt sånn pendelfølelse, ja er du kortere eller har korte armen så tror jeg du må løpe mer på en måte.
I: Ja, men skulle du ønske for din del at det krevde mer?
T: nei, absolutt ikke, nei det er sånn for jeg rakk akkurat opp til liksom de øverste og nederst uten å måtte flytte meg for mye, så egentlig perfekt.
I: Ja, så bra.
I: Når du var i gang med spillet, hva var det som motiverte deg til å gjøre en innsats?
T: Ja, det er jo konkurranseinstinkt da sånn generelt, at man bare har lyst til å score mest mulig.
I: Selv om du ikke har noe sammenligningsgrunnlag eller mot deg selv på en måte?
T: ja, eller bare sånn dere at man relativt sett tenker at oi nå går det kjapt liksom, ja.
I: Ja
T: Ja, og prøve, prøve å få en flow i det
I: Ja, at du føler at du mestrer det eller?
T: ja,
I: Mhm
I: Hva skulle til da for at du ville brukt den her i hverdagen hvis den var tilgjengelig?
T: Som liksom sånn som den henger her?
I: Ja, eller hvis den var der du var?
T: ja, men liksom på et offentlig område?
I: Ja, på skolen
T: Ja, det, kanskje at man kunne koblet det opp mot, du kunne for eksempel hatt en rfid scanner med studentkortet ditt og registrert brukeren din og fått opp navn og bilde og score også hatt det på en ukentlig basis kanskje koblet opp mot konkurranse eller et eller annet?
I: Noe online highscore?
T: ja, eller bare sånn der at du at det er noe folk går og tester for å potensielt vinne
I: Ja, sånn ja
T: 'I dont know', også hver måned så trekkes det et headset ellerno i fra ntnu, ' i dont know'. Litt sånn ala hold (appen), at man ja.

I: bare en reward på en måte?
I: Ja
T: Ikke nødvendigvis da, men tror kanskje det er det mest stimulerende. For å liksom huske på at det er noe du kan gjøre da.
I: ja, sånn ja
T: Kontra det at med mindre du går forbi det liksom, for der tror jeg det også..
I: Ja du får et varsel liksom på at husk å spill?
T: ja, og at sånn det er, at det blir mere normalt å gjøre det og fordi folk vil vinne og spille liksom, spille for å vinne.
I: Ja, kult
T: Kontra det hvis du bare liksom henger der og sånn, spill hvis du vil liksom.
I: Fulgte du med på scoren din underveis?
T:Nei det gjorde jeg ikke?
I: nei, hvorfor ikke?
T: Jeg tror jeg bare er altfor fokusert på spillet, og at ja, visste jo heller ikke hva som på en måte er, om det liksom er noe threshold, kommer du over det så ditt og datt. Nå var det jo ikke noe for å vinne her da, men sånn. Jeg tror nok det bare går litt for fort til at jeg legger merke til det.
I: Mhm, hva med antall liv?
T: Ja, der sier du jo at.. jeg tror jeg.. det husker jeg ikke, nei så jeg så jo egentlig ikke på det.
I: Nei, husker ikke hehe, nei
T: Nei, jeg tror jeg bare antok at jeg egentlig traff de fleste, og derfor ikke mista noen særlig liv.
T: Mista jeg et? Nei?
I: nei, altså du..
I: Du mista alle tre livene, alle tre ja, du tapte
T: Åja, man dør, ja selvfølgelig, jeg tenkte det var tid jeg, ja men da ja, det gir mening.
I: Skal vi se
I: Nå var det jo ikke så mye publikum her da du spilte. Hivs det hadde vært det, hvordan ville det vært for deg?
T: Greit, da blir man kanskje enda mer opptatt av å prøve å gjøre det best mulig da, ja fordi det blir mere konkurranse på det.
I: ja, hvis det, ville, på en måte, ville du gjort noe med, terskelen for å oppsøke spillet i utgangspunktet tror du?
T: ja, det går litt tilbake på det som vi sa med, altså med å være en konk.. eller sånt fellesskap rundt den konkurransen på en måte. At det kanskje er.. da er det mindre, eller da er det veldig sånn lavterskel å spille tror jeg.
I: Når det er mye folk?
T: Nei, når hvis på en måte alle er med for å vinne noe.
I: Ja
T: Kontra det å bare hvis du skal spille for å spille så er det liksom sånn.
I: men hvis det på en måte ikke var noen konkurranse blant de som ..ikke noe sånn kollektiv stemning da?
T: ja
I: Blant de som stod der

T: Jeg tror nok jeg hadde synes det hadde vært rarere å spille alene enn å stå i en kø da.. og vente på å spille liksom. Også er det folk som står rundt, mest fordi bare. ..Det virker kanskje rart, det gjelder jo alle ting da,
I: Ja
T: å bare gjøre ting på egenhånd, eller alene, når det mye mennesker som går rundt ellers. Ja, så svaret mitt var vel egentlig, [å spille sammen] med folk er bedre.
I: ja, okei, kult!
I: Det var egentlig det, har fått inntrykk av at du synes det var ganske gøy
T: ja, absolutt
I: og gira på en konkurranseløsning rundt det.

Transcript 010

I: Så hvis du først vil si litt om førsteinntrykket ditt av spillet?
T: Eh. Det virker gøy på en sånn måte som jeg egentlig syns er litt slitsom (Latter), pluss og minus..
I: Åssen da?
T: Eller jeg liker ikke, nei altså, jeg føler, jeg liker ikke meg selv når jeg har konkurranseinstinktet kommer fram, og det gjør det i sånne her spill, så det er egentlig bra.
I: Okay, jeg vet ikke helt om jeg skjønner..
T: Nei, det er mer sånn personlig da, så.. Spillet får ut konkurranseinstinktet, og det er bra.
I: Okay, bra! Er det noe du liker spesielt godt ved spillet?
T: Enkelt å forstå da, så.. Ja.
I: Ja, noe du ikke likte så godt?
T: Jeg syns de var litt vonde å trykke på, de knappene, da jeg.. da det ble litt intensivt liksom.
I: Ja, skjønner. Hadde det noen påvirkning på innsatsen din i spillet?
T: Nei...
I: Nei, dreit i det!
T: Ja!
I: Du sa at du syns det var lett å forstå hvordan det funker. Men var den noen spesielle elementer som gjorde det lett?
T: Eh. Altså, det er jo, det er jo ganske enkelt konsept at der det lyser skal du trykke på liksom, det... også førstemann, det er liksom greie og enkle konsepter å forstå.
I: Ja, var det noe som forvirret deg underveis?
T: Nei, det var vel kanskje bare litt sånn, «Åja, der var en runde ferdig», men det skjønte man jo for så vidt. Dere sa det jo også, så jeg vet ikke om det.. Vi hadde sikkert skjønt det om dere ikke sa det også, men ja. Tror det.
I: Ja, har du prøvd noe sånt som det her før?
T: Ikke som jeg kan huske. Nei.
I: Oppsøker du vanligvis aktiviteter i pausene?
T: Eh. Ikke sånn spill, men liker å gå ut og gå tur da i pauser. Så tja, litt roligere enn det her
I: Ja, skjønner. Så det er ikke sånn bordtennis og foosball?
T: Nei, det er jeg ikke så glad i, for å være ærlig.
I: Tror du du kunne brukt det her da, hvis det var tilgjengelig?
T: Tja, det kan godt hende. Det er såpass kort at det var greit å starte og.. uten at det tar så mye tid, så.
I: Hvordan følte du deg før du begynte å spille i sta da du kom hit, sånn humørmessig?
T: Jo.. ok, fint.
I: Nå etterpå da?
T: Jo.. ikke noe dårligere hvert fall. Ja, kanskje litt mer energi?
I: Ja? Mengden fysisk aktivitet i spillet, hva tenker du om den?
T: Mmm. Nei, det var bra.
I: Ja?
T: Det var morsomt med de hvor.. hvis man er liksom, ikke høy nok, at man også må hoppe litt for å liksom rekke fram og sånt, det var gøy! (ID 39)
I: Skulle du ønske det var mer eller mindre krav, på en måte?
T: Nei, jeg syns det var passe. Det er liksom litt utfordrende, men ikke sånn utilgjengelig liksom.

I: Så bra. Hva var det som gjorde at du fikk, fikk lyst til å spille? Eller å være med i dag?
T: Nei, det er fordi du sa at dere sto her da, så tenkte jeg at det er fin avveksling å prøve ut, så ja. Altså, jeg har sett det på Instagram at dere har testa det før og.. Så morsomt ut!
I: Ja, så bra! Hva var det som var motiverende når du først var i gang da? Hva motiverte deg til å ville gjøre en innsats?
T: Fordi jeg vil vinne. Veldig enkelt! (ID 33)
I: Hvilken verdi har det for deg å spille sammen med andre?
T: Det er jo morsomt, for da er man sammen om det, ja? Det.. felles opplevelse og kan le litt hvis det forhåpentligvis ... hvis ikke det blir dårlig stemning liksom.
I: Fulgte du noe med på hva hun du spilte mot gjorde underveis?
T: Ja, jeg så jo litt sånn på om hun så på de forskjellige.. eller og ja.. også med en gang hun sa noe, distraherte deg meg, så jeg ikke tok de jeg skulle og sånt.
I: Ja, skjønner. Tror du at du kunne spilt det her mot en fremmed?
T: Eh. Tja, jeg kunne nok det. Jeg tror kanskje det ville.. det ville sikkert vært litt annerledes fordi jeg kjenner [Navn på motstander] godt, og sånn, men det ville jo fungert da også. Kunne sikkert ledd likevel.
I: Det er bra. Hvilke steder tenker du at en sånn her installasjon er egnet for?
T: Eh. Nei, det kan jo være hvor som helst. Men, altså sånn som her er jo fint, som en sånn 'pauseting' på et universitet. Men den kan jo også være.. om den kan stå ute i en park eller sånne ting hadde vært.. kanskje vi kan integrere den i vår masteroppgave i [Navn på by].
I: Kanskje det?
T: Nei, det er sånn, ja. Jeg ser ikke.. jeg.. utenom sånne åpenbare stillesteder og sånn, så er det jo ikke så mange steder den ikke passer, tenker jeg altså.
I: Ikke på en lesesal altså.
T: Offentlig rom!
I: Ja, offentlig rom! Nå var det jo ikke så mye publikum rundt her når dere spilte.
T: Nei..
I: Hvilken.. det blir jo hypotetisk, men hvilken påvirkning tror du at et eventuelt publikum ville hatt på deg som spiller?
T: Nei, jeg vet ikke. Jeg vet ikke om det [publikum] hadde hatt så mye å si, fordi når jeg først begynner å spille, så.. så er jeg inni det uansett.
I: Ja..
T: Kanskje jeg hadde vært litt mer avventende med å melde meg [delta] hvis det hadde vært mange her.
I: Ja, skjønner. Sånn i.. Hvis den her hadde stått på Stripa da, og det var kø. Hva ville det gjort med motivasjonen din til å være med?
T: Mmm. Jeg ville ikke bare droppet innom hvis det var kø, på en måte, men hvis jeg hadde spilt det før og visste at det var der og syns det var gøy, så kunne jeg sikkert giddet å stå litt i kø. Kommer an på køen. Ja.
I: Så bra. Jeg har fått inntrykk av at du syns det var ganske ålreit. Litt vonde knapper, og at konkurransen var et viktig element. Og at du kan se for deg denne her i.. på offentlig rom.
T: Ja, absolutt.
I: Tusen takk for din deltakelse.
T: Nice!

Transcription 003

I Så, kan du først fortelle litt om førsteinntrykket ditt
Av selve spillet?
T Hva mener du, skulle jeg til å si?
I Hva tenkte du da du så spillet?
T Ja, nei
I Jeg så du stod å så på litt her i stad
T det så nå artig ut, det var artig å se på i alle fall
I Ja, så bra. Hva synes du nå da, etter å ha spilt det?
T Det var jo artig det og. Kanskje litt urettferdig med høydeforskjell da. (ID 36)
I Okei, ja
T Med tanke på at jeg som regel alltid klarte det når det var litt høyere, mens han som regel alltid klarte det når det var de lavere.
I Ja, skjønner.
T Men det er ikke så mye man kan gjøre noe med da
I Nei, men det er fint du sier det. Er det noe du likte spesielt godt? Med spillet.
T At det var minuspoeng som plutselig dukket opp.
I Ja
T Det var litt gøy.
I Hva gjorde det med, på en måte, motivasjonen din?
T nei
I Eller gjorde det noe med motivasjonen din i spillet?
T Nei, egentlig ikke, men det ble nå enda en ting å tenke over da, så det ikke var så enkelt.
I Ja, var det noe du likte mindre godt?
T Vanskelig å svare på, kanskje informasjon om at det plutselig kommer et minuspoeng.
I Haha, ja okei. Var det, hva på en måte, var det forvirrende eller?
T Nei, altså, in the heat of the moment så tenker du ikke over at det finnes minuspoeng, når du ikke har fått vite det på forhånd. (ID 45)
I Nei, skjønner
T Jeg tenkte bare det var farge på en knapp. Kjør.
I Ja, okei. hvordan synes du det gikk å på en måte forstår hvordan spillet fungerte?
T Nei, det var jo ganske enkelt. Vil jeg si. Intuitivt.
I Så bra. var det noe som var forvirrende?
T Nei
I Nei, så bra.
I Har du prøvd noe sånt som det her før?
T Nei.
I Nei, pleier du å, eller, sånn i skolehverdagen oppsøker du aktiviteter i pausene?
T Tjaa, det varierer fra dag til dag og humør skulle jeg til å si
I Hva slags aktiviteter kan det være da, hvis du ...
T Nei, det kommer an på hva som tilbys det.
I Ja. Okei
T Jeg vet ikke helt
I Nei det er greit.
I hvordan følte du deg før du spilte i stad?

T Ivrig?
I Ivrig ja
T Ja, jeg...
I Hadde spillet noen påvirkning på hvordan du følte deg?
T Ja, det var gøy å prøve. Det var litt adrenalin skulle jeg til å si. Litt ja.
I Mengden fysisk bevegelse i spillet, hvordan, hva synes du om den?
T Mer enn vanlig her hos realfagbygget, men det var ikke så veldig mye nei. Lav
I så du synes det var..? Ja okei
T Altså helt grei ja, for den saks skyld.
I Men burde det vært, burde den krevd at man bevegde seg mer?
T Nesh, trenger egentlig ikke det, ikke for det her.
I Nei okei. Hva var det som gjorde at du fikk lyst til å spille da?
T Nei, det er jo alltid gøy å spille litt spill i ny og ne
I Ja, er det sånn du er liksom eller?
T Nei, det er nå artig å utfordre seg selv og andre
I Ja, hva var det som var motiverende i spillet da?
T Det var nå bare et spill, det var bare å gjøre noe annet enn hverdagen.
I Ja.
I Hvis den her hadde stått her til vanlig, hva hadde skullet til for at du vil bruke den?
T At den ikke krasjer. (ID 49)
I At den ikke krasjer ja, godt poeng.
I var det, hvilken verdi har det for deg å kunne spille sammen med andre?
T Det [å spille sammen med andre] er jo hele poenget, hvis ikke kunne jeg sittet på telefonen, det er jo mye av vitsen til at jeg spilte skulle jeg til å si.
I Ja, så fulgte du mye med på han du spilte mot?
T Ja
I Ja, var det motiverende å...
T Ja, må jo se hva han gikk for så jeg kan prøve å ta den før eller se at det gikk ikke, og g å for den andre når det var to(knapper)
I Ja, haha, ikke sant. Men dere kjente hverandre fra før?
T Ja
I Ja, hvordan tror du det ville vært å spille mot en fremmed?
T Det hadde, jeg vet ikke...
I Kunne du... Tror du du kunne gjort det?
T Ja
I Nice.

Transcript 007

I Okei, hvordan synes du det her var?
T Det var greit.
I Det var greit. Ja. Kan du fortelle litt om førsteinntrykket ditt av spillet?
T Eh, førsteinntrykket mitt? Jeg vet ikke om det gir så mye inntrykk jeg det, selve spillet eller?
I Installasjonen, spillet, hva som helst, ja opplevelsen liksom
T Ja, det er bra da. Jeg vet ikke hvordan jeg skal utdype noe mer om det.
I Ja, hva var det du, var det noe spesielt du likte?
T nei, ikke egentlig
I Nei, var det noe spesielt du ikke likte så godt?
T Ja, at det var forskjellige farger. (ID 48)
I Ja okei ja, for du er fargeblind? Rød-grønn?
T Litt
I Litt, okei ja, men det er veldig godt poeng. Utenom det, hvordan synes du det Var å forstå hvordan spillet fungerte?
T Ja, det også irriterte meg at jeg ikke visste på forhånd nøyaktig hva reglene var.
I Okei ja, så du ville hatt en tydeligere forklaring?
T Ja, sånn at jeg var helt klar over hvordan det kom til å få utspille seg.
I Ja, skjønner. Har du prøvd noe lignende som det her før?
T Nei
I Nei, hvordan er du sånn vanligvis i pausene, oppsøker du aktiviteter ...
T Nei, egentlig så bruker jeg bare å sitte å slappe av.
I Ja, okei. Hvordan synes du det her var da? Sånn sammenligna med vanlig.
T Nei, det var gøy det
I Ja, så bra. Hvordan humøret ditt før du spilte?
T Flatt
I Flatt?
T Ja, ok pluss
I Hvordan er det nå da?
T Nei, nå er det litt bedre.
I Det er det? Ja, tror du det er på grunn av spillet?
T Ja, ja, det tror jeg
I Så gøy.
I Man må jo bevege seg litt, nå er jo du ganske høy da
T Ja
I Hva synes du om mengden fysisk bevegelse som spillet krever?
T Bra ikke for mye med tanke på hvor kort det varer, det var sånn sett greit.
I Ja, synes du det burde vært mer?
T Ikke mer bevegel.. nei, ikke egentlig, men det, det er bra nok liksom til at du må faktisk være så kjapp du greier da.
I Hva var det som gjorde at du fikk lyst til å prøve?
T Det var bare for å se hva det var, konkurrerer med kompisen min.
I Ja, konkurranse ja. er det, var det hovedmotivasjonen din eller var det noe annet som gjorde det motiverende?
T nei, jeg tror det [konkurranse] var hovedmotivasjonen ja.

Ingrid Medalen

DigiPlay: Designing Playful Interactive Installations for Spontaneous Physical Activity

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