

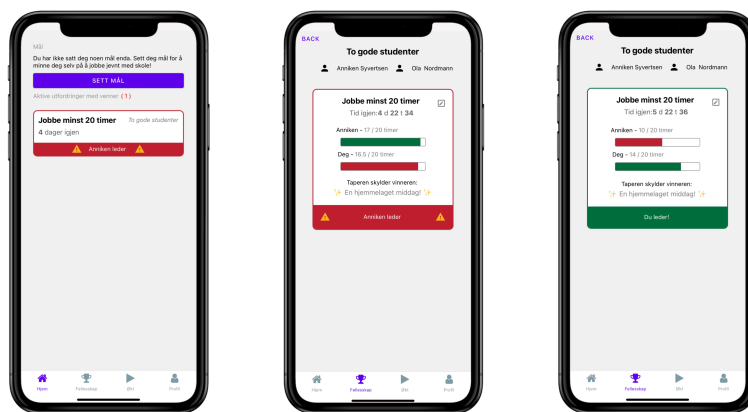
Anniken Rønvang Syvertsen

Motework - a Challenge Based Motivational App

Master's thesis in Master of Science in Informatics

Supervisor: Trond Aalberg

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Abstract

Student procrastination is a prevalent issue which is negatively associated with mental health and academic performance. This thesis explores features that can be used in a motivational application to reduce procrastination and increase motivation among students. In particular, the influence that competition, goal-setting and extrinsic rewards can have on motivation and the students' ability to manage time. The thesis contributes with a thorough review of the state-of-the-art which explores motivational applications and literature on the subject. Research on procrastination among Norwegian students was found to be sparse, and hardly any motivational applications addressing the problem were discovered. An application was developed and real-life tested on 12 students in Norwegian universities to explore the effects of different gamified features. The participants were interviewed regarding their perception of the application's effects on their motivation. Results show that the users perceived the app as motivating and indicate that it helped them manage time for studies more efficiently. All users found competition to be the most motivating feature and their desire to win was triggered by seeing both participants' progress towards the goal. Further, results suggest that the users were not particularly motivated by extrinsic rewards or personal goal-setting.

Sammendrag

Student-prokrastinering er et utbredt problem som er negativt assosiert med psykisk helse og akademiske prestasjoner. Denne oppgaven undersøker elementer som kan bli brukt i en motivasjonsapplikasjon for å redusere prokrastinering og øke motivasjon blant studenter. Spesielt påvirkningen konkurranse, mål-setting og ytre belønninger kan ha på motivasjon og studentenes evne til å disponere tiden riktig. Oppgaven bidrar med en omfattende gjennomgang av "state-of-the-art" innen feltet. Det ble funnet at forskning på prokrastinering blant norske studenter er tynt, og nesten ingen motivasjonsapper som tar for seg problemet ble oppdaget. En applikasjon ble utviklet og testet på 12 studenter ved norske universiteter for å utforske effektene til forskjellige elementer. Deltakeren ble intervjuet vedrørende deres oppfattelse av applikasjonens effekter på motivasjon. Resultater viser at brukerne oppfattet appen som motiverende og indikerer at den bidro til å hjelpe dem med å styre tiden brukt på studier mer effektivt. Det ble funnet at alle brukere oppfattet konkurranse som det mest motiverende elementet, siden ønsket om å vinne ble trigget av å se begge deltakernes progresjon mot målet. Videre tyder resultatene på at brukerne ikke var spesielt motivert av ytre belønninger og personlig mål-setting

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Table of Contents

List of Figures	viii
List of Tables	x
1 Introduction	1
1.1 Motivation	1
1.1.1 Research Goal	1
1.1.2 Personal Motivation	2
1.2 Research questions	2
1.3 Contributions	2
1.4 Research Design and Research Methods	3
1.4.1 Research Strategies	3
1.4.2 Data Generation Methods	5
1.4.3 Data Analysis	5
1.5 Thesis Structure	5
2 Background Theory and Related Work	7
2.1 Background Theory	7
2.1.1 Procrastination	8
2.1.2 Motivation	10
2.1.3 Gamification	11
2.1.4 Time Management and its Effect on Academic Performance	14
2.1.5 Goal-Setting Theory	16
2.2 Definitions	19
2.2.1 Self-Regulated Learning	19

2.2.2	Self Control	19
2.2.3	Self-Efficacy	20
2.2.4	Self-Determination Theory	21
2.3	Motivational Apps	22
2.3.1	Forest: stay focused	22
2.3.2	Hold	25
2.3.3	StepBet: Get Active & StayFit	27
2.3.4	Strava: Run, Ride, Swim	29
2.3.5	Conclusion	32
3	Design	34
3.1	Insights	34
3.2	Design Process	37
3.2.1	Concept Development	38
3.2.2	First Iteration	38
3.2.3	Second Iteration	42
3.3	Main Features	44
3.3.1	Starting a Challenge	44
3.3.2	Track Time	45
3.3.3	Register a Goal	46
3.3.4	Progress Tracking	47
3.4	Motiwork - The Final Application	48
3.4.1	Architecture and Technologies	48
3.4.2	Branding	49
3.4.3	User Flow and User Journey	50
3.4.4	Final User Interface - How The Application Works	52
4	Development and Implementation	60
4.1	Development Tools	60
4.1.1	Figma	60
4.1.2	Google Drive	60
4.1.3	GitHub	61

4.1.4	Affinity Designer	61
4.2	Systems Development Methodology	61
4.2.1	Working as a Full Stack Solo Developer	63
4.3	User Stories	63
4.4	Challenges during development	65
5	Evaluation	66
5.1	Study Design	66
5.1.1	Participants	66
5.1.2	Procedure	67
5.2	Data Collection	69
5.2.1	Firestore and App Store Connect	69
5.2.2	Interviews	69
5.3	Data Analysis	71
5.3.1	Qualitative Data Analysis	71
6	Results and Discussion	73
6.1	App Usage	73
6.2	Procrastination	77
6.2.1	Previous experience with procrastination	77
6.3	Time Management	78
6.3.1	Increased Learning Outcomes	81
6.3.2	Effects on Procrastination	82
6.4	Goal-Setting	82
6.4.1	Previous Habits in Goal-Setting	83
6.4.2	Personal Goals	83
6.4.3	Goal-setting And Gamification	84
6.5	Motivation	85
6.5.1	What Motivates Students	85
6.5.2	The Motivational Effect of the Features	87
6.5.3	Intrinsic and Extrinsic Motivation in the App	90
6.5.4	The Effects the App Had on Motivation	91

6.6	Research Questions	92
6.7	Limitations	95
7	Conclusions and Further Work	96
7.1	Further Work	97
	Bibliography	99
A	Information Letter	107
B	Interview Template	110
C	Consent Form	114
D	Interviews	118

List of Figures

1.1	A modified version of Oates' research model	3
1.2	An illustration of the process of the design and creation strategy	4
1.3	The process of generating data	5
2.1	The topics that each application relates to	22
2.2	Screenshots of Forest application UI	25
2.3	Screenshots of Hold application UI	27
2.4	Screenshots of StepBet application UI	29
2.5	Screenshots of Strava application UI	32
3.1	Illustration of the intended sequence of events	36
3.2	Illustration of the concept development process	38
3.3	Moodboard of inspiration	39
3.4	The initial low-fi sketches made in the first round of brainstorming	39
3.5	Examples of high fidelity sketches for the first concept	40
3.6	A snippet of the various design drafts in Figma	43
3.7	Sketches of the final concept design	43
3.8	Interactions between different sketches in Figma's prototype mode	44
3.9	Competition display (leaderboard) visualizing the status in the competition	45
3.10	Example of a session using the timer	46
3.11	Example of what a personal goal might look like	47
3.12	Different types of feedback on progress	47
3.13	Architecture of the application	48
3.14	Color palette used for application	50

3.15	Illustration used in the application	50
3.16	The Motiwork logo	50
3.17	Explanation of the user flow diagram	51
3.18	A diagram illustrating the user flow of the application	51
3.19	A simplified user journey map showing the intended use of the application.	52
3.20	What it looks like after the app is installed from TestFlight	52
3.21	Onboarding screen when users opens application without being logged in.	53
3.22	Register and login screen.	53
3.23	The application when users enter first time after registering	54
3.24	Add friend	55
3.25	Start a cooperation with a friend	55
3.26	Accept a cooperation with a friend, and start a challenge	56
3.27	Cooperation in action, the screens when you lead and when opponent lead	57
3.28	A completed challenge where the user is the winner	57
3.29	Setting a personal goal, working towards it and reaching it	58
3.30	Stopwatch, timer and set timer	58
3.31	Starting a session with timer, each ten minutes adds 10 points	59
4.1	A screenshot of the user stories in the product backlog.	62
4.2	The kanban board in Github	63
5.1	A deductive approach was used	72
6.1	Amount of sessions each user had in the application	74
6.2	Amount of hours logged by each user	75
6.3	Amount of points each user had in the application	75
6.4	An example of a user document in Firestore Database	76

List of Tables

2.1	Gamification features with descriptions	14
3.1	Features based on findings from theory	37
5.1	Interview themes	70

Chapter 1

Introduction

1.1 Motivation

In 2021, Norwegian students spent averagely 24 hours on their studies each week, according to a national student survey for higher education in Norway [118]. This is 1.5 hours less than in 2018, and 4 hours less than in 2014, which shows that the average amount of hours spent on school in Norway decreases each year. At the same time the regular expectations of work load for the general student is usually 40 – 42,5 hours each week (average each year of study) at several faculties [91].

Higher education sets high standards for the students and their self-discipline. Being a student demands frequent and hard work, self-regulated learning and the ability to structure your own schedule. To many, the transition from high school to college is difficult and overwhelming. The safe and structured surroundings from small classes with close follow-ups, a planned schedule and daily checkups are replaced with large classes and plenty of time designated to self-study. In addition, many students move out of their childhood home and will experience the sudden freedom and responsibility that follows when homework and leisure activities are no longer monitored by parents. The result of this sudden self-sufficiency puts the students' willpower to the test. Education in unsupervised environments is common practice in many courses in higher education, which affirms the need for self-initiated and self-managed learning. It can be challenging to prioritize school over social events or distractions associated with smartphones, computers and television. This can lead to lower efficiency, delay of work and procrastination, which is proven to be a common problem among university students. Procrastination can result in increased stress level, poorer health and last minute cramming for exams, which in turn can affect academic performance. It is a well-known problem which is often a consequence of too much independence and too little self-control. Even though the problem has been researched, there are no established solutions implemented in Norwegian universities to prevent it, and many students suffer the consequences of not being able to motivate themselves and manage their time properly to avoid last minute studying.

1.1.1 Research Goal

Procrastination and delaying school related work is a common problem among university students, which in turn can affect their mental health and academic performance. The overall goal of this

project was to develop and test a gamified application to explore solutions that can help students reduce procrastination and increase motivation. This thesis explores the design, implementation and evaluation of this application.

1.1.2 Personal Motivation

After five years as a student, I have tried and failed a number of times to avoid procrastination in favor of self-study. Alas, when smartphones and laptops are always at hand, with an easy hit of dopamine only a click away, my self-discipline has faced its bold opponent. In addition, social events and other entertaining experiences has held a tight chokehold on my academic performances, always testing my ability to choose reason over pleasure. Multiple techniques have been tried and tested in order to get my priorities straight, but the problem is ever present. Not surprisingly, I have noticed that I am not the only one. Fellow students repeatedly share their frustration over the amount of school work piling up, while at the same time not being able to put their phone away. In addition, news articles are frequently published where phone addiction and procrastination is discussed as a matter of concern. As a result, my interest in finding solutions and aid has manifested. How can students be maneuvered to choose school over procrastination? What motivates students to study? What increases student activity and changes student behavior? Questions which many researchers have asked, but few have found tangible and definite solutions to. Needless to say, when the opportunity to write a thesis regarding this problem, while trying to develop a possible solution arose, the question was not whether or not I should do it, but how.

1.2 Research questions

Based on the research problem and goal, the thesis aims to answer the following research questions:

RQ 1 How are motivational applications used in education to increase student activity?

RQ 2 What features can provide a good foundation for a motivational application?

RQ 3 What can we learn from testing the application?

To answer these questions, a mobile application, which was named Motiwork, was developed and evaluated. The application was developed based on knowledge acquired after reviewing the literature and state-of-the-art. Motiwork was evaluated through real-life testing and subsequent interviews. The findings from the interviews were used to gather the data collection for this thesis.

1.3 Contributions

This thesis contributes with insights from a real life tested application focused on reducing procrastination and increasing motivation. Through design, development and testing of various features, the motivational effects of the app have been evaluated. The evaluation contributes with insights regarding student procrastination and motivation, as well as what features the testers perceived as motivating.

These insights provide knowledge regarding different ways gamification can be used to motivate students to start studying and stop procrastinating. Further, features and game mechanics that can increase student motivation are suggested. These features can be exploited in future research on student engagement and motivation.

1.4 Research Design and Research Methods

In order to properly draw conclusions that aim to answer the research questions, and which are systematically conducted, valid and relevant, a rigid research strategy and data generation method has to be used [93]. This will ensure that the research tasks are undertaken in a rational fashion with a logical relationship, and that the produced findings which answers the research questions comes from valid data. The chosen methods are highlighted in figure 1.1, which is a research process model originally designed by Oates [93]. The research problem was initially drawn from personal experiences. After first-handedly experiencing it over several years, and observing that other people also had the same problem, the motivation to find a solution emerged. Then the state-of-the-art was reviewed, including existing computer artifacts in the field and literature written on the topic. This resulted in an overview of what has already been done and the gap of knowledge. After defining the research questions, the conceptual framework was planned. The conceptual framework forms the basis of the structure and process of the research. This includes, among other things, the research methodology, how the data should be analyzed and the systems development methodology.

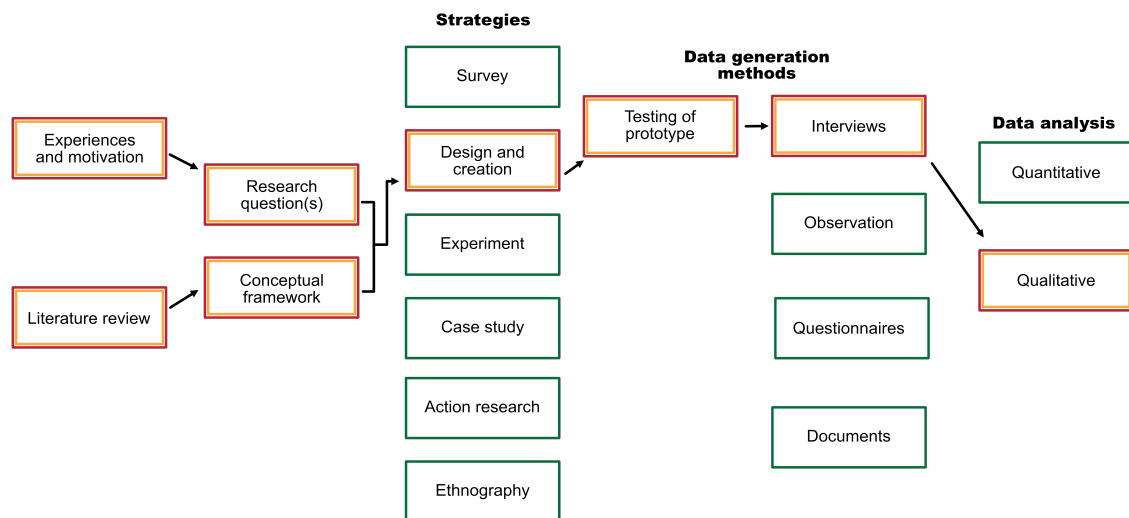


Figure 1.1: A modified version of Oates' research model

1.4.1 Research Strategies

The research method that is used in this project is the design and creation strategy [93]. In this strategy, the focus is on the development of an IT artifact which aims to solve a problem. The design, implementation and evaluation of this artifact is the main contribution to knowledge regarding the researched problem. Design and implementation was chosen as the strategy based on the desire to develop an IT artifact that could be tested to research the identified problem.

According to Oates [93], the developed IT artifact can have one of three roles in contributing to knowledge; the main focus of the research, a vehicle for something else, or a tangible end-product of a project where the focus is on the development process. In this research, the role of the IT artifact is *a vehicle for something else*. An application was developed based on the research questions and literature review, and the research examined what happened when the application was used in a real-life-context. The results from the research were analyzed in order to measure the degree of success, as well as uncover relevant and useful insights.

Often, the design and creation strategy can be combined with other strategies, such as case study and experiments, to get a better understanding and evaluation of the IT artifact [93]. However, due to time and resource limitations, it was decided that only one strategy would be used in this research.

The design and creation strategy usually involves an iterative process consisting of five steps [93]:

1. **Awareness:** The initial step where you recognize the problem.
2. **Suggestion:** This is where a creative leap is taken from curiosity about the problem, to a tentative suggestion on how to solve the problem.
3. **Development:** Implementation of the tentative idea.
4. **Evaluation:** Examination of the developed artifact.
5. **Conclusion:** Identifying the gained knowledge from the results of the design process.

The process is not necessarily followed strictly step by step. Rather, it is an iterative process where the development step might lead to greater understanding of the problem, evaluation of the design can uncover new insights and theories, and so on. Figure 1.2 illustrates how the process went in this research. The development process is explained further in chapter 4 and the systems development methodology in section 4.2. Evaluation of the IT artifact included testing the developed product on a number of users over a period of time, and then interviewing them. This process is described further in subsection 1.4.2 and covered in detail in chapter 5, and the results from this are presented in chapter 6.

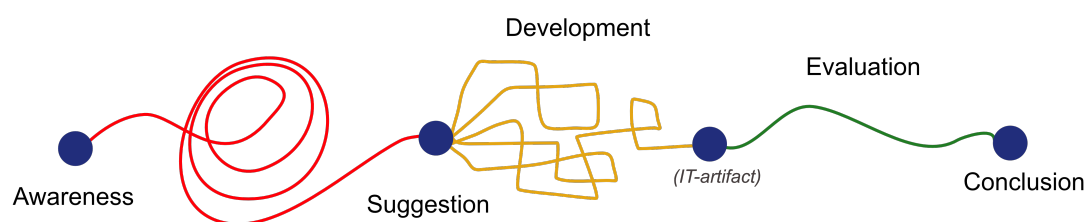


Figure 1.2: An illustration of the process of the design and creation strategy

1.4.2 Data Generation Methods

To generate data, a system was designed and developed. The system was further tested over a two week period by twelve users. The data generation method used to evaluate the system was *interviews*. Interviews were conducted at the end of the test-period, where a semi-structured approach was used. Semi-structured interviews are a type of interviews where the interviewer has a list of themes to cover, and possible questions to ask, but where they are also willing to add new questions depending on the flow of the conversation [93]. This type was chosen since it was desired to get more details where it was natural and to possibly understand issues that were not previously considered. The interviews provided data to help evaluate the testing of the application. The qualitative data from the interviews was used to reveal patterns and themes relevant to the research problem.



Figure 1.3: The process of generating data

1.4.3 Data Analysis

Since there was a limited number of users testing the application, qualitative data analysis was chosen. The interviews were conducted via video and recorded using the video software recorder. Subsequently the audio recordings were transcribed to text. Transcriptions make it easier to search through and analyze the data [93] as well as include quotations from the findings. The transcribed interviews formed the data collection that was used to evaluate the application. This data was analyzed qualitatively using a deductive approach. For the deductive approach, a hypothesis was developed and themes were predetermined based on the prestudy.

It should be noted that interviews might bring some disadvantages, including that they might be misleading, since they focus on what the interviewees *say* they did or thought, which might not be what they really did or thought. For example, they might not remember correctly or they might want to 'please' the interviewer by saying what they think is 'the correct answer'. Interviews can also lack reliability, since consistency and objectivity is hard to achieve, and the participants might not be a representative sample [93]. That being said, these disadvantages were carefully considered both during the interviews and the data analysis.

1.5 Thesis Structure

The thesis consist of seven chapters with the following structure:

- **Chapter 1: Introduction** - This chapter introduces the motivation of the thesis, which includes the research problem, the research goal and the research questions. It also presents contributions of the thesis and the research methods used to answer the questions. Parts

of this chapter are reused from the preparatory project conducted in relation to the master thesis.

- **Chapter 2: Background Theory and Related Work** - The chapter elaborates on the relevant theory of the thesis as well as definitions of relevant terms. It reviews literature and existing solutions in order to present the state-of-the-art. Lastly, a list of features which is based on the insights is presented. Small parts of this chapter are reused from the preparatory project conducted in relation to the master thesis.
- **Chapter 3: Design** - This chapter presents the development and design of the concept. It reviews the iterative design process from idea to final design.
- **Chapter 4: Development and Implementation** - In this chapter, the development and implementation of the system is presented.
- **Chapter 5: Evaluation** - This chapter presents the study design and methods employed to generate and analyze the data.
- **Chapter 6: Results and Discussion** - This chapter presents the findings from the data collection and presents the following discussion of the findings. It also addresses the research questions.
- **Chapter 7: Conclusions and Further Work** - The findings and contributions are summarized, followed by recommendations for future work.

Chapter 2

Background Theory and Related Work

In this chapter, an overview of the theoretical foundation of the problem will be presented, as well as state-of-the-art of existing solutions and research. Section 2.1 presents relevant background theory and research covering the main themes of the thesis. Section 2.2 explains relevant definitions. Finally, section 2.3 reviews motivational applications aiming to solve similar problems.

2.1 Background Theory

Students tend to procrastinate and postpone school-related work due to distractions such as mobile phones and social events, as well as lack of self-control. It is shown that skills in time management [55] and goal-setting [130, 23] have a positive impact on academic performance, and that gamification can contribute to motivate students, particularly in the form of competition [51]. In this section, relevant theory explaining the problem the thesis looks into (procrastination), as well as the theoretical foundation that the solution is based on (goal-setting, time management and gamification) will be presented.

Procrastination, when a person delays urgent tasks due to more favorable activities, is an unfortunate and widespread problem among college students. This is a problem since it can lead to stress, bad health, last-minute cramming for exams and consequently poorer academic performance. Even though it is a well-known issue, few solutions are proposed and even fewer measures have been implemented to reduce the occurrences of the problem. As of today, no existing solution exists in Norwegian universities which aims to help students reduce procrastination. The goal of this thesis is to get a clearer understanding of the problem and in turn develop a possible solution.

The stark opposite of procrastination is time management. Time management is a type of behavior which is shown to have great success in academic performance when practiced. It includes different types of habits and techniques which can help individuals manage their time more efficiently, which implies that it is a suitable solution for dealing with procrastination. Despite the proven success it is not yet a common practice in Norwegian universities to help students with time management. In this thesis, we will dive deeper into this behavior, why it works and how it can be applied, in

order to understand how it can be implemented in the final solution.

Another well-established theory which we will look into is goal-setting. It is one of the most well-established motivational theories in psychology which is proven to be successful, both in work life and education. Goal-setting is also an important element which contributes in making games successful, since it gives the game a meaning and contributes in making the game fun. Setting goals is an easy and accessible technique which increases both motivation and performance and can help reduce procrastination, which is why the theory is included in this thesis as a part of the solution.

Goal-setting and time management are efficient ways of reducing procrastination since it aims to inspire motivation within an individual. Motivation is the inner drive to do something and it is an essential part of figuring out how to change behavior. Reducing procrastination involves changing students' study behavior and it therefore follows that understanding how motivation works and how it can be produced is both relevant and necessary.

The final topic covered in this section is gamification. Gamification is a concept where game-elements are used in non-game context to increase motivation. The concept is increasingly popular due to its effect on changing behavior and perception of a task. It was chosen as a technique to reduce procrastination due to its motivational effect and technological relevance to this thesis.

2.1.1 Procrastination

Procrastination, the phenomenon of needlessly putting off or postponing work, is a widespread and well-known problem among students. The term can be described as a form of self-regulation failure characterized by the irrational delay of tasks despite potentially negative consequences [98]. Instead of doing important or urgent tasks, the procrastinator engages in various activities which leads to short-term relief and feels more pleasant. It is identified as an issue doing more harm than good, and is reported to have high prevalence, particularly at college and university levels, which is the population reported to be most frequently affected by procrastination [4, 27]. Unfortunately, procrastination can directly affect academic performances as well as the health and well-being of the students. Procrastination often leads to regrets and a guilty conscience, since the person procrastinating knows how unfortunate delaying the task is. It is reported that procrastination leads to stress, depression, discouragement and reduced sense of mastery [98]. In addition, procrastinating a task results in less time to complete the task which can affect the performance.

Procrastination is identified to be a widespread problem affecting school performance and mental health. Numbers and statistics of the prevalence are mixed across different studies. One study stated that "estimates indicate that 80%–95% of college students engage in procrastination, approximately 75% consider themselves procrastinators and almost 50% procrastinate consistently and problematically" [120, p.65]. Another study measured procrastination among 248 university students and found that 32% of the general sample were severe procrastinators [27]. A study from 2022 where students across different Swedish universities answered an online survey, found that 71% of the respondents considered procrastination to be a problem [105]. Despite the common nature of procrastination among students, procrastination is for the most part undesirable. A study done by Onwuegbuzie [94] on procrastination and students, showed that 65-70% of the researched students wanted to reduce their own procrastination. Statistics and data regarding Norwegian

students and procrastination is sparse, but Botnmark et al. [26] found that Microsoft did a study in 2012 which uncovered that 78% of Norwegian students reported that they were procrastinating. The reasons they gave were: lack of motivation (68%), struggles with concentration (38%) and boring tasks and assignments (29%). The study indicates that procrastination is indeed widespread among Norwegian students, although it is important to note that the number of participants in the study is unknown. The lack of research on the problem among Norwegian students shows that this is a field that requires further research. Botnmark et al. also conducted a study where 209 students answered a questionnaire focusing on working habits, well-being and health. The results from the study showed that procrastination had a negative effect on health and well-being, even when the degree of procrastination was moderate. Botnmark et al. further proposed courses for students at the beginning of the semester to help students avoid procrastination.

Findings from studies shows that academic procrastination directly affects academic performance [59, 13], and that students who start their work earlier are more likely to earn higher correctness scores and marks, according to [58, 8]. In a study by Ackerman et al. [1] the results suggested a reduction in procrastination when there were rewards or incentives for starting early on the task. These rewards included extrinsic rewards (like extra points), as well as intrinsic rewards (reminders of the benefits of finishing early).

Students procrastinate for many reasons, including social activities, watching their favorite show on Netflix and scrolling on Instagram. Smartphones are a common source of distraction due to social media, notifications and other sources of entertainment. Today, almost all students own a smartphone. At the same time, smartphone addiction is positively related to academic procrastination while it negatively relates to academic self-efficacy [70]. A study by Lukas et al. [77] showed that individuals who participated in a smartphone-based intervention treatment were associated with a significant reduction in academic procrastination. Studies also show that social media multitasking is prevalent among learners [19] and is proven to significantly negatively predict academic performance [66].

Research on using gamification as a tool to reduce student procrastination and increase self-regulated student activity is not extensive. Huang et al. [54] conducted an experiment where they used gamification elements like points and leaderboards to improve student participation and encourage extracurricular learning. The gamification was implemented in a learning management system used in a module. Results indicate that gamification is effective in motivating students, and that students who used the gamified module were more engaged.

Landers et al. [65] wanted to test gamification impact on learning and behavior, and specifically the effects of leaderboards. To do this they conducted an experiment where they assigned learners completing an online wiki-based project to a gamified version of the wiki. Their task was to write a wiki page on a topic during the semester. There was also a group of students who got the same task, but who were assigned a wiki without gamification. In the gamified version, the leaderboard listed ten action goals and awarded students based on the order they completed. Results supported a causal effect where students with leaderboards interacted on average 29.61 times more with their project. It was concluded that leaderboards can be used to increase performance under certain circumstances. Landers et al. further warn that gamification interventions that are directly targeted at learning are more likely to be harmful than successful, and that "processes that could improve learning (such as increased time-on-task) must be identified, and those processes must be targeted by gamification interventions in order to affect learning indirectly" [65, p.782].

Amit et al. [5] developed a framework where they focused on preventing procrastination. They used gamification, peer-influence and the Pomodoro Technique (a method for time management when working) to develop a framework and an application with the aim of motivating users to be productive and reduce procrastination. The gamification element used to motivate was a leaderboard based on points received after work sessions. However, they did not test the application or analyze the effects. Similarly, Feldotto et al. [37] developed a mobile-application relying on gamified learning activities to address the problem of procrastination. The aim was to enable more students and instructors to benefit from the advantages of gamification. The app was not properly tested and reviewed, and the authors did not present any conclusive results or informative data.

2.1.2 Motivation

Motivation is a vital factor for the educational life and academic performance of students. After all, students who are highly motivated are more attentive to their learning processes and outcomes than students who are poorly motivated [113]. Motivation is an individual's inner drive to do something. A person who is motivated is a person who is energized or activated toward an end [106]. This is very relevant when researching how to change behavior.

Motivation occurs on the basis of different factors, and it is important to understand these factors in order to figure out how to reproduce it. Essentially, we differentiate between two types of motivation; intrinsic motivation and extrinsic motivation [106]. These two types of motivation are distinguished by *the underlying cause that moves a person to act*. If a person acts because she genuinely wants to and she feels personally rewarded by doing so, she is **intrinsically** motivated. If she acts because she believes that it will lead to a separate outcome, such as receiving a reward, she is **extrinsically** motivated. A relevant example is a student who is either motivated to work with school because she is interested and wants to learn (intrinsic) or because she wants to achieve good grades (extrinsic).

Many studies have researched the effects intrinsic and extrinsic motivation has on performance, and have found a positive correlation [12, 9]. Intrinsic motivation have been proven to be more motivating, and intrinsically motivated students are reported to perform better academically [122, 69], since they genuinely want to complete a task based on personal interests.

Challenge is one of the core elements of game design due to the fact that it can be very intrinsically motivating if the difficulty level is appropriate. An important aspect of challenge in game design is providing a goal. If the goal is meaningful to the player, she will be intrinsically motivated to reach the goal. In general, setting goals are proven to increase performance and goal-setting theory is a leading motivational theory in psychology. This is discussed further in subsection 2.1.5. Another important aspect is competition, which is motivating because it provides a challenge at an appropriate difficulty level which can serve to make the goal meaningful [82]. Several studies have researched the effect competition has on students and the results show increased engagement, participation, enjoyment and motivation, which effectively also improves the learning experience [104, 67, 12]. The effects competition has on motivation, particularly in relation to gamification, is further discussed in subsection 2.1.3.

It should be noted that reward-based gamification, like competition, can be damaging in the long-term, as extrinsic rewards undermine intrinsic motivation [28]. This is due to the fact that rewards can turn play into work if the main goal of doing something is to get the reward and not just 'for

the fun of it'. That being said, rewards can be designed in a way that leads to more meaningful engagement in order to build intrinsic motivation.

2.1.3 Gamification

Gamification is an increasingly popular concept commonly used to enhance people's motivation and engagement. It originates from the popularity of video games, where it was noticed that people of all ages spent hours playing games voluntarily without external pressure, just "for the fun of it". Researchers wanted to understand why games had this effect on people, and what made them motivating. The extracted knowledge, which mainly revolves around *what makes games fun*, have been used to restructure other activities to obtain the same level of motivation [82]. Definitions of the term varies, but the one that will be used in this thesis is "to use elements of game design in non-game contexts, products, and services to motivate desired behaviors" [31]. The term has become synonymous with rewards, and systems using gamification typically applies game-features like points, leaderboards, achievements, or badges to real-world settings.

In general, gamification aims to make a boring activity fun. Motivation to do something arises when a person is doing something because she or he thinks it is fun, interesting or enjoyable [29]. The idea is that if you take a boring activity, like washing clothes, and apply game elements to it (e.g. rewards when you are finished, score based on how fast you do it), the activity will be fun and individuals will be more motivated to do it.

Gamification applies game mechanics and game dynamics to promote desired behaviors [124]. Game mechanics are principles, rules and/or mechanics which aim to direct a certain type of behavior through a system of feedback, rewards and incentives. When and how these incentives should be presented is determined by game dynamics, which is the emergent behavior which arises from game play [124, 125]. Table 2.1 lists regular mechanics and dynamics used in gamification to enhance motivation.

Gamification techniques has been increasingly popular in education as a strategy to motivate students, due to the fact that motivation is one of the most important determinants of educational success [122]. Research on the effects gamification has in education is extensive, and findings from studies show both positive [30, 10] and negative [123, 50] results. Examples of identified negative effects are indifference, loss of performance, undesired behavior and declining effects [123]. If gamification is not applied correctly, it can provoke the wrong type of motivation (like a student being motivated to get a high score instead of learning) or loss of motivation. For example, if gamification is implemented in education in the form of earning badges for completing an activity that is mandatory, the play and fun is taken away and the student can end up feeling forced to do it and lose the motivation [86]. Gamification proves to be more effective when the gamified activity is optional [86], since this makes the individual feel like he or she is in control. Motivation will be discussed further in subsection 2.1.2.

Hamari et al. [48] conducted a comprehensive review of empirical studies researching the effects of gamification, where the majority of the studies found some positive aspects, such as increased enjoyment and engagement. That being said, they also found that positive effects are greatly dependent on the context in which the gamification is being implemented, as well as the users using it. Sailer et al. [108] conducted a meta-analysis which aimed to statistically synthesize the current state of research on gamification effects. The results indicated significant, positive effects

of gamification on cognitive, motivational and behavioral learning outcomes, which suggests that gamification indeed benefits learning.

Buckley et al. [16] conducted a study to investigate the effects of gamification on student engagement through an online gamified learning intervention. Findings suggested that gamified learning environments have a positive impact on learning outcomes. In the study it was found that it has a larger impact on students who are intrinsically motivated, but they further emphasized that this is not to be used as an argument towards gamification. Rather, the study showed that gamification elements can be used as a tool to control and generally increase student engagement and participation as long as it is carefully designed since gamification impacts students differently.

In a study by Huang et al. [54] a quasi-experiment was conducted, where they gamified a module using badges points and levels. The results suggested that gamification strategies can be effective to improve student participation as well as to encourage extracurricular learning. Legaki et al. [68] did a study where they used a gamified application composed of leaderboards, points, levels and challenges in a lecture to investigate effects of challenge-based gamification on learning. Results from the experiments showed that challenge-based gamification had a positive impact on student learning. Pechenkina et al. [96] investigated if a gamified mobile app could be effective as a learning tool, influence academic performance and boost engagement. The app was used to deliver multiple-choice content based quizzes after lectures. Results showed increased academic performance and retention rates.

While some studies indicates that elements like leaderboards and badges are particularly effective gamification features [47, 75, 30], others have found that they may harm educational outcomes [50, 20]. This tells us that even though gamification indeed can have positive effects on performance and motivation, context and usage are important factors, and gamification features should be carefully designed and evaluated based on the usage and users.

One of the fundamental design elements in games which can be used as a gamification technique is competition. Yee [129] identifies competition as one of the key elements in games that motivates people to play and Malone [82] states that it is motivating because it provides a challenge at an appropriate difficulty level which can serve to make the goal meaningful. Players experience stronger enjoyment when competition factors are present in video games, and competition is regarded as an important factor for entertainment and fun [126]. If a user plays against an opponent, it is likely to provoke a social-competitive situation which is very capable of engaging and involving the user, according to Vorderer et al. [126].

Social comparison, which is the tendency to compare oneself against another peer, is an important source of competitive behavior [41]. Individuals are motivated by a basic drive to improve their performance and minimize the difference between their own and other's level of performance, which is what generates this competitive behavior. Malhotra et al. [81] published a paper which consisted of several studies investigating competitiveness, where one of the studies demonstrated that triggering a desire to win can have powerful effects on behavior. In the paper they stated that "the desire to win" is heightened when rivalry and time pressure coincide.

In a study by Tauer et al. [121], the effects of competition and cooperation on intrinsic motivation and performance was examined. Four field experiments where the participants were to shoot a basketball were conducted. The findings from the study suggest that cooperation and competition have positive aspects that can facilitate high levels of intrinsic motivation and performance.

Competition is also suggested to be a key element which can motivate students to engage in gamification tasks, and has been identified as a successful approach [114, 18]. It is proven to improve engagement and classroom interaction, and is viewed as a strong motivator [71]. Hardjito [51] conducted an action research where a digital photo competition was held in a second year class. The results showed that competition created excitement and enjoyable learning environments, as well as motivation and interest to learn. Licorish et al. [71] researched the use of Kahoot! in a course, and found that the competitive game enhanced engagement and learning experience.

It should be noted that losing a competition can have negative effects on satisfaction and enjoyment [114, 119], and that it might not work as a motivational factor for participants that are less competitive [119]. However, it is speculated that despite this, competition can still be a very effective gamification element to enhance engagement and enjoyment [114].

Another gamification element which is proven to motivate is *progress bars* [85, 92, 84]. Progress bars are used to track and display the progress towards a goal. Showing progress is an important part of competition and challenge, since the users must be able to clearly see and track their progress towards the goal [92]. O'Donovan [92] researched the effects gamifying a course had on motivation among 90 university students. The results indicated that even though both badges and progress bars had an effect on motivation, the students were actually more motivated by the progress bars than the badge that the progress was made towards.

Looyestyn et al. [75] conducted a review where they searched eight databases to investigate the effects gamification strategies could have in increasing engagement in online programs. The review provided preliminary evidence that leaderboards are a particularly effective form of gamification. This is consistent with what was mentioned above about social comparison promoting motivation through competition amongst peers.

Table 2.1: Gamification features with descriptions

Gamification Feature /Mechanic	Game Dynamics	Intrinsic motivation elements	Description	Source
Levels	Status	Autonomy	Progress through parts of the game/application	[24] [117] [110]
Points	Reward	Competence, Autonomy	Tokens that users can collect and use as a) status indicators or b) to spend as in-app currency on virtual goods or gifting	[54] [117] [110]
Progress bars	Progression Dynamic	Autonomy, Competence	A dynamic which displays progress and success toward a goal	[112] [92] [115]
Challenges	Competition	Competence, Autonomy, (Relatedness)	Time-limited goals or competitions. Relatedness applies if the challenge is with/against another user	[24] [115]
Collaboration	Viral Game Mechanics	Relatedness	Work together with other users to reach a goal	[24] [112]
Competition	Competition	Relatedness	Compete with other users through leaderboards	[24]
Badges, trophies, achievements	Achievement	Competence	Trophies which appears as icons or logos, showing an accomplishment of a certain activity or milestone	[54] [24] [117] [110]
Social influences	Status	Relatedness	Ability to share performance with others or communicate directly with other users	[24] [110]
Unlockable content	Reward	Autonomy	Ability to use points or similar to unlock new features	[24] [110]
Leaderboards	Competition	Competence, Relatedness	A high score table showing an individual's performance in comparison to other users	[54] [117] [110]
Streaks	Appointment Dynamic	Competence	A score that signifies how many days in a row the user has accomplished something in the application	[52] [112] [110]

2.1.4 Time Management and its Effect on Academic Performance

Lectures, assignments, tests, deadlines, curriculum and exams. Students are busy people, and filling up a schedule with school activities is rarely a problem. Some students also have part-time jobs, do voluntary work, engage in student societies and try to have a social life on the side. Balancing different courses and leisure activities can be challenging, which makes knowing how to

manage their time an essential skill. The transition from high school to college, where the student is more independent and responsible for their allocation of time, only highlights the need for this ability. “Time management refers to activities that imply an effective use of time that is deemed to facilitate productivity and alleviate stress” [88, p.150]. The interest in time management has been around for decades, and solutions regarding how to manage time including to-do lists, goal-setting and prioritization of chores are both popular and well known techniques. That being said, as discussed in subsection 2.1.1, delay of important tasks among college students is a common problem, showing that there is a lack of these techniques.

Conceptually, time management is a set of habits or teachable behavior that may be acquired through increased knowledge, training, or deliberate practice [80]. It is not considered a single trait or skill, but rather a multidimensional process where students consciously manage when, where and for how long they engage in academic work. The ability to manage time includes time management behaviors like setting goals and priorities (SGP), using time management mechanics (TMM) and preference for organization of time (PFO) [79]. The main outcome of engaging in these behaviors is enhanced *perceived control of time* (PCOT), which is proven to significantly reduce stress [79]. SGP involves setting goals, deadlines and priorities. TMM is about making a schedule, using time efficiently and avoiding distractions. PFO regards having a preference for an orderly way of working and the individuals’ perception of how useful scheduling and organizing time and space is. PCOT gives an indication of to what degree the individual thinks he or she can control time [2]. In short, time management aims to increase productivity and efficiency, which is very beneficial for students.

It is well-established knowledge that learners who practice and engage more frequently with a task, often produces more knowledge and skills than those who do not, and that those who manage to keep their attention focused learn more than those who do not [65]. Studies have found a significant relationship between students’ time management skills and their academic achievement [57, 11]. Beattie et al. found that poor time management and very little time studying were most associated with students with poor academic performance in a study from 2018 [11]. “Poor time management practices such as not allocating time properly for work assignments, cramming for exams and failing to meet deadlines set by academic staff are frequently cited as a major source of stress and poor academic performance” [88, p.135]. In a study by Wolters et al. [127], where 446 college students completed a self-report survey, the results suggested that time management strategies are correlated with decreased procrastination and delay of work. They found that students who reported use of strategies for setting goals, prioritizing and monitoring their use of time, predicted decreased procrastination and intentional delay, and increased their reported ability to get work done before deadlines. According to Hamzah et al. [49], it is realistic to assume that improved time management may lead to superior quality of work, and that if students improve their time management skills it will be easier for them to avoid last-minute studying before examination.

That being said, existing empirical research which investigates the relationship between time spent studying and student performance have shown mixed results [89, 62, 90], indicating that spending more time on studying does not necessarily increase performance alone. Results from a study from 2010 suggested that the quantity of time allocated for studies did have an influence on performance, but that this influence was moderated by the study habits of the student [90]. Even though study time might affect performance, the study techniques were also an important factor for the performance. Qualitative techniques, such as good study habits, can help a student use the time studying more efficiently, which can influence performance more than quantitative factors

such as hours spent. The ability to concentrate while studying was also a positive influence on the students' academic performance.

Helping students manage their time, either by allocating more time to their studies, or to use the time more efficiently can be very beneficial. A general approved solution to improve workday efficiency is *time management training programs*. Several studies conclude that it may enhance time management skills, reduce stress and increase perceived control of time [21, 45, 46, 44]. This also applies to students, according to findings from a study by Indreica et al. [55]. Between 2009-2011 they conducted an experiment with the goal of proving that efficient time management could lead to increased academic performance. In the experiment, 130 students received time management guidance from an educational counselor, which developed personalized and flexible programs for each individual student. The programs included planning of all activities the students were to participate in during the period of the experiment. Results from the study showed an increase in time allocated for individual study from 03.41 to 27.42 hours, and a decrease in time allocated for entertainment from 58.12 to 19.50 hours. The students had a significant increase in academic performance and consequently their academic success, which indeed show how efficient time management can be. However, despite the proven success of time management training, courses like this have not yet been introduced as a standard in colleges and students are mostly left to themselves when it comes to managing their time. Due to this, other solutions should emerge.

The belief that time-on-task increases learning is one of the main motivations behind implementing games in classroom and education [65]. As we saw in subsection 2.1.3, gamification is a technique which is increasingly popular to use when increased engagement and motivation is desired, especially in educational context. Based on this, it follows that a possible solution to help students manage their time, and increase time-on-task, can be the use of gamification.

2.1.5 Goal-Setting Theory

Goal-setting theory has been used for decades to understand how to motivate people to increase performance in work-related tasks through setting and monitoring goals. It is one of the most well-established motivational theories in psychology and it has been rated as the most valid and practical theory of work motivation [74].

Goal-setting theory is a motivational theory that explains how goals can be created in order to maximize performance. According to the theory, clear, specific and challenging goals, along with appropriate feedback, contributes to higher and better task performance [72]. The theory was developed by Locke and Latham based on findings from 400 studies which was conducted to understand why some people perform better than others [72]. Results from the study showed that specific, high goals lead to a higher level of task performance than easy, vague goals [73]. Goals should be specific since this enables people to monitor progress and adjust performance, and difficult due to the fact that challenges produce a high level of motivation [73]. Performance varies as a consequence of different degrees of motivation, and the most direct motivational explanation of the theory is that "some people perform better on work tasks than others because they have different performance goals" [72, p.15]. The core premise of the theory can be summarized as; explicitly setting goals can significantly improve performance at any given task.

Bryan et al. [15] conducted a study which explored the effects goal-setting had on motivation,

by selecting one low-motivation and one high-motivation group for two retests of the same task. Specific goals to reach were given to the low-motivation group, while the high-motivation group were told to "do their best". The results from the study showed that the group who were given specific goals performed best both times, which suggested that specific goals can be used to motivate subjects with low motivation.

Studies show that goal-setting is positively related to academic performance [130, 23, 111, 87]. Effects of setting goals are proved through interventions where students were exposed to goal setting and study planning [130, 111], students responding to a questionnaire before and during the semester about their goals [23] and a comprehensive, reflective single-session goal-setting program [87]. Morisano et al. [87] found that conducting a goal-setting exercise among students who experienced academic difficulty successfully improved their GPA. The study investigated whether an intensive, online, written, goal-setting program would have a positive effect on academic achievement for students who struggled. 85 participants were randomly assigned to 1 of 2 intervention groups where the first group completed the goal-setting program and the other group completed a control task with intervention-quality face validity. The goal-setting intervention included eight steps based on goal-theory literature and aimed to influence different factors related to effective goal-pursuit. Participants went through a digital session where they, among other things, had to share ambitions and goals for the future, plan how to reach their goals and prioritize them. Results from the experiment displayed significant improvements in academic performance among the students who completed the goal-setting intervention. It was described as a low-cost and easily administered intervention which, if carried out among students at the beginning of the semester, potentially can help them achieve academic success. This study, along with [130, 23, 111], highlights the significant difference in academic performance after applying goal-setting strategies, and consequently suggest that students should be encouraged to set goals in order to increase motivation and performance. In standard Norwegian universities, organized goal-setting interventions is not a common practice, and the students are usually left to themselves when it comes to setting and monitoring goals.

Goal-Setting Theory and Gamification

The theory of goal-setting has been used in different settings for decades to increase performance and motivation. Another concept which is widely used for the same purpose, especially in education and organizational settings, is gamification. In subsection 2.1.3 about gamification, we saw that gamification can lead to improved performance. This improvement can be explained by the goal-setting theory, since many gameful applications and systems are based on setting specific and difficult tasks and goals [40]. It is therefore natural to see gamification in context with goal-setting theory, which Tondello et al. did in [40], where they stated that gamification can be a mediator for the goal-setting theory since both concepts have similar purposes.

Goals and feedback are common elements of gameful implementations and goals is perhaps the most important element which contributes to making a game successful. A game is not much of a game, if the game does not have an objective [82]. Since gamification is derived from games, it follows that gamification is a goal-oriented activity as well. Based on this, it can be claimed that an important gamification feature which motivates users to do a task, is goals. This is, among other things, because setting goals through gameful elements help users focus their attention. In addition, gameful experiences enhances the effect of performance improvement and provide constant and actionable feedback which is helpful in the pursuit of reaching a goal [40]. To better

understand how goal-setting recommendations could be implemented with gamification, Tondello et al. [40] developed a conceptual framework which aimed to establish this relationship. In this framework, the following gamification features were suggested to support goal-setting: leaderboard, levels, progress bars, rules, goals, challenges and conflict, points, achievements and rewards. These features were all based on different goal-setting principles, like "specific goals" or "self-efficacy" and the framework also provides gameful design guidelines on how they should be implemented. A real life example which this framework can be applied to is the popular language-learning application Duolingo [35]. Duolingo uses gamification to motivate and help users reach the goal of learning a new language. In the pursuit of this goal, the users are motivated through all the above-mentioned features. Some examples: users receive points after a language-session, they reach new levels based on their points, different progression-bars are displayed to show progress, there are leaderboards and challenges where users can compete against other players and so on. The app encourages the users to use the app for a certain amount of minutes each day to improve their skills. In 2022, Duolingo reached 500 million registered users, with 42 million active users each month [25], which shows that the app is successful in motivating the users to use the app. A study from 2020 showed that the participants who used the application to learn a language performed as well on reading and listening tests as students who had completed four semesters of university language instruction [56]. This proves how efficient gamification features can be in motivating users to reach a goal (e.g. learning a language), or a sub-goal (e.g. use the app for fifteen minutes each day), if applied correctly.

Setting a Goal

"Individuals who are provided with specific, difficult but attainable goals perform better than those given easy, nonspecific goals or no goals at all, provided that they accept the goals, receive feedback related to performance and have the sufficient ability" [78, p.1]. Goals can be implemented in games either by giving the user a goal, or allowing the user to determine their own goals. They can either be explicit, where it is identified as a goal or a task, or implicit, where the outcome to pursue is presented, such as earning a badge [40]. Either way, there are some guidelines that should be followed when setting a goal, in order to maximize the outcome.

As the goal-setting theory states, goals should be specific and challenging, but there are also additional qualities a goal should have in order to be optimal. In 1981, a method for writing goals which was based on the goal-setting theory was published by Doran [32]. Today, this has become a common standard of developing goals [14]. The method is called SMART, and the concept is that goals are most motivating when they are specific, measurable, realistic and time-bound [40, 32].

- **Specific:** explain specifically what needs to be done
- **Measurable:** it should be possible to measure the progress towards the goal
- **Attainable:** the goal should fit the skill-level
- **Realistic:** the goal should be realistic
- **Time-bound:** a goal should have a deadline

It should be noted that goal-setting interventions can encourage the "wrong" behaviors in education, since the student can be more focused on getting a high score on a test, instead of learning.

This is especially true for the type of performance goals where the goal is quantity of work instead of quality. When using goal-setting as an element of gamification this should be carefully considered in order to avoid negative effects.

2.2 Definitions

In this section, essential terms will be presented and explained. The explanation of these terms is relevant to get a better understanding of the behavior which is associated with self-studying. Students are frequently exposed to unsupervised extracurricular activities, which requires certain qualities and skills from the students. The terms below cover some of these qualities. Additionally, self-determination theory, which concerns the individual motivation to change, is included to gain more insights regarding the psychology behind student motivation.

2.2.1 Self-Regulated Learning

Self-regulation is the process of comparing your performance to your goal, and adjusting your performance in order to reach the goal [64]. Self Regulated Learning (SRL) refers to autonomy and control in self-managing behaviour, motivation and learning by the individuals who monitors, directs and regulates their activities and behavior toward reaching their goals [95, 36]. A self-regulated learner is an active learner that sets goals and strategies to improve academic performance. The term includes psychological processes that contribute to students becoming independent learners [34]. SRL embraces both the process of self-control, academic self-efficacy and different learning strategies [34]. Goal-setting, planning and self-instruction are examples of processes which are used by a self-regulated learner to acquire knowledge and skills. SRL requires knowledge about how to instruct and regulate oneself effectively.

Higher education includes much time spent on self-study, which requires a high level of self-regulated learning from the student.

2.2.2 Self Control

Self-control is a type of motivated, goal-directed behavior where an individual has the capacity to resist temptation and undesirable impulses. When people are pursuing goals, the benefits they receive can be split into immediate rewards, which materializes while pursuing the activity, and delayed rewards, which materializes later. For decades, people have been struggling with choosing long-term goals over short-term rewards. For example; a student wants to choose reading for a future exam, but might end up watching Netflix or scrolling Instagram. The reason behind this is that we find the presence of immediate rewards a stronger predictor of persistence in goal-related activities than the presence of delayed rewards [128].

Students primarily study for long term rewards (getting their degree, passing an exam, getting a job). However, five studies done by Woolley et al. [128], proved that immediate rewards more strongly predict persistence in long-term goals than delayed rewards. In other words, we tend to “give in to feel good” now, instead of making the choice that will have the best outcome in longer terms. This can be explained by *Ainslie’s theory of specious rewards* which emphasizes

the human tendency to choose a short-term reward over a long-term reward, providing that the short-term reward is immediately evident. One of the proposed reasons for this, is that humans tend to underestimate or fail to correctly imagine delayed consequences. If an individual is able to regulate conflicting thoughts, feelings and actions, and thereby masters the art of choosing long term goals over short term rewards, it is a demonstration of *self-control* [33].

Self-control may be improved by repeatedly practicing small acts of self-control. Plans and goal-setting, personal rules and habits are different strategies which can help a person control their impulses [34]. Habits is a learned if-then association which links particular situational cues to behavioral responses, and which are executed automatically and unconsciously [34]. Habit creation has been suggested to have great potential as a self-control strategy, and studies show how people with high self-control use habits to achieve their goals [17]. Goals are also important when considering self-control, since much of human behavior is goal-directed [74], and can help direct behavior when short-term rewards are available and tempting.

Another strategy is to target the situation in advance and modify the situation by for example removing possible temptations. This strategy was tested in a study by Duckworth et al. [33], where students were introduced to the concept of removing temptations from sight instead of trying to resist them. Different strategies included muting or turning of their phones and the use of apps that blocked access to social media. The results showed that the students using these strategies were more successful at reaching their academic goals the following week than the students relying on willpower.

Setting deadlines, both self-imposed and externally imposed, are also effective strategies for overcoming self-control issues, and are effective in improving task performance [7]. Although self-imposed deadlines are effective, they do not enhance performance as much as externally imposed, evenly spaced deadlines, due to suboptimal spacing of tasks.

A final strategy can be to provide rewards when desired behavior is performed in order to make the least tempting task more desirable. However, as previously mentioned, material rewards should be carefully implemented since they can have negative effects [28].

2.2.3 Self-Efficacy

Perceived self-efficacy is people's belief about their capabilities to carry out the actions needed to succeed in a task [60]. Self-efficacy for self-regulation reflects an individual's belief in his or her capabilities to use a variety of learning strategies, resist distractions and complete schoolwork and has been found to influence academic achievement [60].

Self-efficacy in academic context emphasizes students' perceived competence with respect to tasks in the academic domain [61]. It concerns the students' self-confidence for learning and performance. Self-efficacy has emerged as a robust predictor for motivation and performance, and is linked to increased likelihood of utilizing self-regulating processes like goal setting [61]. Students with higher self-confidence, or self-efficacy, tend to have higher self-control. Procrastinators who perform poorly, on the other hand, tend to lack confidence to apply self-regulating learning strategies in starting and completing tasks. It is implied that self-regulating strategies is an effective mechanism for improving self-efficacy, motivation and performance.

A study by Komarraju et al. [61] found that students with high self-efficacy are more likely to

achieve higher grades, due to their ability to control their natural impulses when they feel lazy and distracted. They appear to maintain self-discipline and motivation, also when quitting is an easier option, as opposed to procrastinators.

Self-efficacy can be increased by different strategies, one of which is setting short-term goals. Short-term goals are subgoals (e.g. "get top score on the test next week") of long-term goals (e.g. "complete this course with top marks") and are important to prevent loss of motivation. Long-term goals are often remote and difficult to visualize, while short-term goals give frequent and explicit, visible feedback to the progress. Frequently noting progress improves self-efficacy and motivation [83].

2.2.4 Self-Determination Theory

Self-Determination theory (SDT) is a leading theory regarding human personality and motivation. It highlights the importance of personality development and self-regulation in humans' inner resources [107]. The theory emphasizes the motivation behind peoples' choices that is not affected by external interference and looks at the psychological needs behind peoples' self-motivation and self-determination. It has been used by researchers to understand student motivation, and when pedagogical design is successful in addressing these psychological needs, students' motivation to engage in learning tasks has increased [53]. SDT includes both extrinsic and intrinsic motivation, and defines them not as separate motivations, but as a progression from inner to outer motivation. The concept is based on the idea that individuals are motivated to grow and change by three universal psychological needs; competence, autonomy and relatedness. Competence is when a person is able to produce something that he or she desires and as a result experiences mastery and effectiveness. Experiencing competence means to achieve the feeling of mastery of skills. Relatedness is the feeling of connection to, and interaction with, other people. Autonomy is about a persons' own ability and need to be responsible for their own (meaningful) choices. The feeling of autonomy is enhanced if the individual is provided with a choice, but when an activity is mandatory the feeling decreases. The theory suggests that when these three needs are fulfilled, people are able to become self-determined [107]. These needs are motivational resources that can be developed by modifying the environment [109]. Game design elements are often used for the same purpose, by altering non-game context such as learning environments. It is therefore a general assumption that gamification mechanics creates motivation by fulfilling one or more of these needs. In table 2.1, each gamification mechanic is mapped to the related psychological needs. The literature varies in explaining how to fulfill each need of SDT, but some examples according to Shi et al. [115] and Lamprinou et al. [63] are:

- Autonomy: immediate and clear feedback, meaningful choices and consequences, clear goals
- Competence: learning goals with increased difficulty, tasks with pleasant and surprising feedback, direct and positive feedback, optimal challenges, control of learning process, fun learning activities
- Relatedness: tools for interaction and collaboration, visualisations of social status, reputation and contributions, community, supporting display of appreciation to/of others

SDT identifies inner motivational resources that all students possess and acknowledges that students have tendencies to lack self-motivation. A study by Hsu et al. [53] from 2019 researched

SDT among students and found that the satisfaction of the three psychological needs enhanced the motivation to self-regulate. This was further associated with increased achievement and perceived knowledge transfer.

2.3 Motivational Apps

There exists a wide range of mobile applications that aims to motivate individuals to achieve something. Below, a selection of these apps are reviewed in order to attain a better understanding of how to successfully motivate a user. This will be done by looking at the reward mechanisms and gamification elements used, as well as summarizing a random sample of the feedback the users have written in the app store and play store to get an overview of their opinions.

The apps below were chosen either because they aim to help people be productive and manage their time, because they use goal-setting as a strategy, or because they use gamification to motivate their users. They were found based on general knowledge and by searching for "applications using gamification". The table in figure 2.1 presents an overview over which application relates to what topic from the presented theory.

It should be noted that when addressing whether or not the application has applied goal-setting theory, it is about whether or not the application offers a feature where a) the user is able to set a goal and track progress towards the goal, or b) the application provides a goal to the user and tracks progress towards that goal. That being said, all applications used gamification to help users reach some sort of goal (e.g. increase physical activity, stay more focused).

	TIME MANAGEMENT	GOAL-SETTING THEORY	GAMIFICATION	MOTIVATION
Forest	✓	✓ <i>(indirectly)</i>	✓	✓
Hold	✓	✓ <i>(indirectly)</i>	✓	✓
Strava	✗	✓	✓	✓
StepBet	✗	✓	✓	✓

Figure 2.1: The topics that each application relates to

2.3.1 Forest: stay focused

Forest is a productivity app with over 40 million users which aims to help users stay focused. To use the app, the user starts a session by planting a tree in the app, pictured in figure 2.2a, which grows as the user tracks time in a session. The session works either by starting a timer for a chosen amount of minutes, or by starting a stopwatch. Users can choose 'deep focus' mode in a session, which means the session will be canceled if the user closes the application and uses the phone

for other things. If the user stops the session before the tree has grown, the tree will wither. A successful session will result in a tree, and the users' sessions during the day, week, month and year will be visualized through a forest composed of all the trees, as seen in figure 2.2c. In addition, the user earns points which can be used to plant a tree in real life (2,500 points = 1 tree), shown in figure 2.2e, or to unlock new tree species to plant in the forest (figure 2.2b).

Forest uses gamification elements to both achieve intrinsic and extrinsic motivation. Extrinsic motivation is achieved through achievements like badges, displayed in figure 2.2d and in game currency (points), which can be used to unlock new tree species, displayed in figure 2.2b. The app also uses social accountability, since one feature is "plant together", where all trees wither if one person fails. Additionally, a motivation to stay focused is to fill up the forest with trees and to avoid that trees withers. The app is also based on intrinsic motivation, since the main goal of using an application like this is to be productive and focused.

In subsection 2.1.2, it was mentioned that reward-based gamification can be damaging in the long run unless rewards are designed in a way that leads to more meaningful engagement. Forest achieves meaningful engagement since the user can plant a tree in real life when enough points are collected.

The application uses goals (indirectly) and challenges to motivate users. Goals, or sub-goals, are used indirectly since the app does not have a feature which involves "setting a goal", where the progress is tracked towards a certain goal. A goal in Forest is for example "setting a timer and staying focused for 60 minutes", where the users' objective can be to "to grow a tree in the application", "to finish a homework assignment" or similar. The app also presents challenges which provides users with extra goals, like "work 888 minutes between May 5th and May 20th to unlock a limited edition tree".

As Landers et al. [65] found, gamification can be used to increase learning indirectly, if it is applied to processes that can increase learning, such as time-on-task. Forest is an application which can be used to increase time-on-task when studying. The main goal of the application is to help the user put the phone away, which is a helpful tool in removing the phone as a distraction and which can help users spend time more efficiently. Both of these consequences were identified as time management mechanics in subsection 2.1.4. Hence, the application can be a helpful tool to increase time management skills, or simply to help users manage time. As figure 2.2b shows, the user can choose between different tags when engaging in a focus session, such as "work", "study", "sport" or "other". These tags can help inspire different behaviors, such as study behavior, which in turn can help students reduce procrastination. That being said, the app does not specifically target students, but a general audience of people who want to stay focused.

Forest has grown to become a very popular app with extremely high ratings among their large base of users. The feedback is in general very positive, and consists of a lot of happy customers stating that the app is very helpful when it comes to staying away from the phone, and that they love watching the trees and forest grow. Many users comment on how they are motivated to keep focusing because the tree will die if they don't finish the session, and that it gives them an extra incentive to do so. The users are motivated by the fact that if they stay focused, they can help the environment, so the fact that the in-app currency can be used to grow real trees is also praised. The main constructive feedback of the application is that it costs money.

Some reviews in app store include:

-
- "Forest helps me focus on my PhD in the midst of countless other responsibilities!"
 - "Working hard to grow my garden."
 - "Fun and cute app that makes me productive."
 - "Never been so focused before. Really helpful when you easily procrastinate."
 - "This app helps me a lot with getting motivated to not look at my phone. It makes it easier to just focus on my studies."
 - "This app gave me motivation to do schoolwork."
 - "This app is really what every student need. In these times it is so hard to focus and have motivation, I have struggled for a long time myself. But with this app, I want to make an effort. It keeps me off my phone and makes me want to study/read! Recommend this to everyone who is demotivated and unfocused lately."
 - "It's fun and motivating to watch your forest grow."
 - "This app is best for those who need a little visual stimulation and extra incentive to stay productive."
 - "I love the app cause it motivates me to study and it also grows actual trees where they're needed! It makes me feel fulfilled cause I've studied for the day and I've also done something goof for the planet! It's definitely a win win!"
 - "It's great because it works like a phone game, but it's a phone game that gives you time rather than taking it away."

This selection of feedback demonstrates what has already been stated; the app provides a type of extrinsic motivation that is helpful in motivating people to complete their tasks and stay focused. Words such as "fun" and "motivating" are often repeated in the feedback. It is clear from the feedback that the app achieves what it intends to; motivate people to work and reduce procrastination by growing fictional trees and earning points.

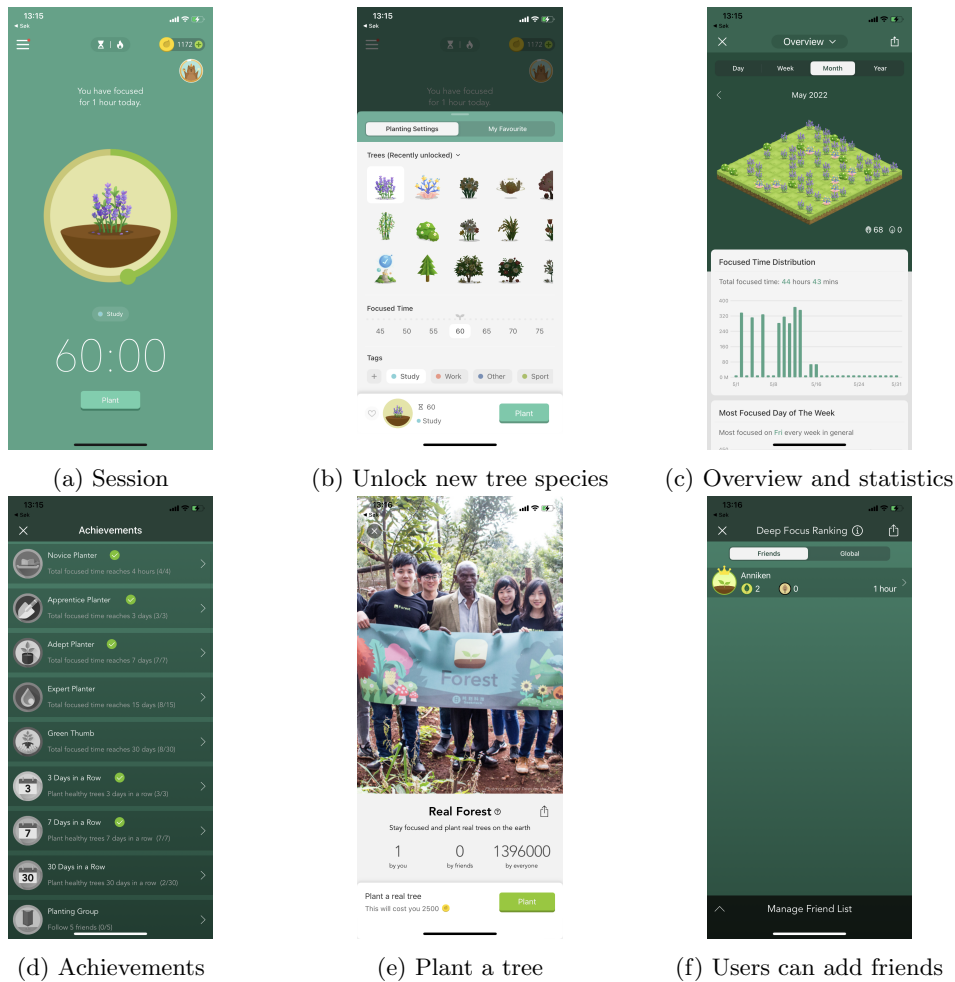


Figure 2.2: Screenshots of Forest application UI

2.3.2 Hold

Hold is a productivity app that uses different elements of gamification to motivate the users to stay off their phone in order to be more productive. The app is very similar to Forest, but provides less features and gamification elements. Similar to Forest, the user can start a stopwatch to begin a focus-session which stops if the application is closed. Each 20 focused minutes results in 10 points. The collected points can be used on a variety of coupons that the app offers, including free coffee on a sample of kiosks, trying to win movie tickets or different types of discounts. There is also a leaderboard where users can compare effort to other users and friends. The user has a profile which shows different types of statistics, what level and how many points the user has and the users' progress towards the next level.

Gamification elements that are used in the application include points, levels, leaderboards, rewards and feedback/progression. The app also uses "streak", an increasingly popular gamified feature quantifying subsequent days of usage, so that the user is motivated to use the application each day to avoid breaking the streak.

The app does not provide goal-setting directly. However, the app provides feedback on progress towards certain milestones, like reaching the next level.

Since time management is used in the application the same way as Forest, a review of this feature will not be repeated. The main difference is that in Hold there is only a stopwatch and not a timer, which means the user does not set a goal in the application for the desired length of a session.

Extrinsic and intrinsic motivation is used similarly to Forest. Intrinsic if the users use the application because they want to be productive and focused, extrinsic if they want to earn points that they can use on different rewards. The main difference from Forest is that Hold provides material rewards that the acquired in-game currency can be spent on.

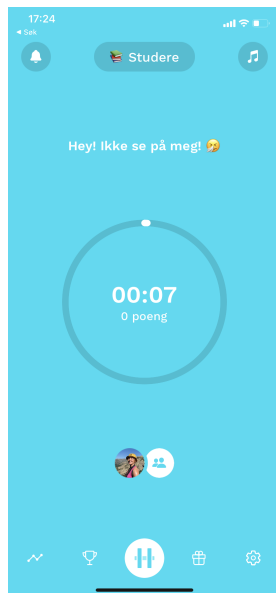
In general, people enjoy this app since it helps them stay off their phone. However, many of the users seem dissatisfied with the rewards, which affects the rating a lot. They do not find the rewards good enough, and want a bigger selection and more variation. Many people believe the app is a scam because they can never win anything when they use their points on chance-rewards (i.e. "use 100 of your points to try to win movie-tickets").

That being said, a lot of the feedback includes "motivating, but rewards should be better", implying that the concept in itself is motivating and popular among the users. It appears that several users use the app because they are intrinsically motivated to stay away from their phones and be productive. To some, this seems like a good enough reward, but for the users who are more motivated by extrinsic awards, the app falls short.

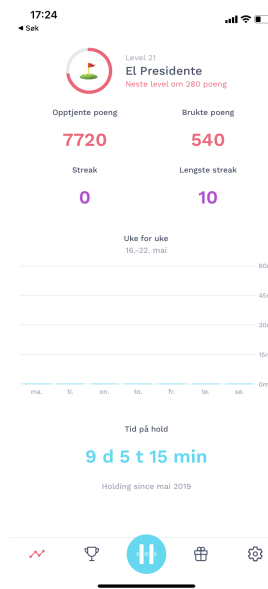
Some users are not too concerned about the material rewards, and find the in-app currency (i.e. points) rewarding enough. This is reflected in one of the reviews which says: *"Helpful and motivating to collect points and compete against friends and family"*.

Below, some of the feedback from the app store is collected. The majority is translated from Norwegian to English.

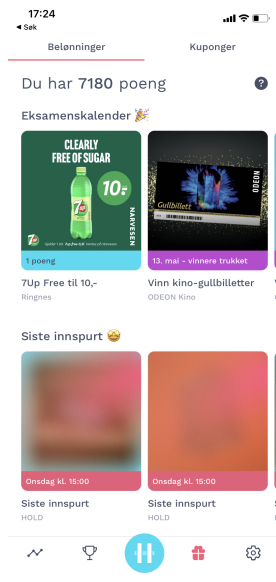
- "I like the application and use it a lot, but I agree with what many others say - I want more good offers/free stuff."
- "I want more free offers and not small discounts. I never win anything on scratch cards."
- "I like the concept of the application a lot and I have used it a long time to see what it offers. That being said I am very disappointed over the rewards you can cash in with points. There is a lot of small discounts, or different types of scratch cards where they don't say anything about winner chances."
- "I like the concept, and the application is well made. However, the selection of rewards is way too bad. For the users who does not have a 7/11 or Akademika, there is no way of using our points. There should at least be some digital offers."
- "I have a hard time concentrating, so it's all too easy for me to pick up my phone and do something other than what I'm supposed to be doing. With the help of this app, I've been able to improve my self-discipline. However, the fact that the number of perks available for accumulating a large number of points is so limited makes the app less appealing."



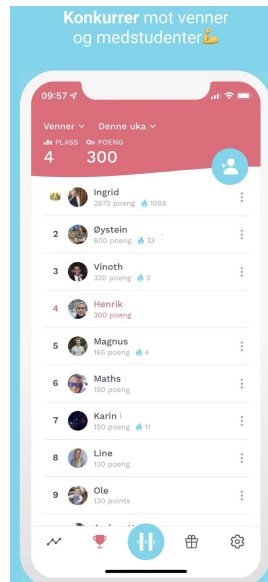
(a) Session



(b) Profile with statistics



(c) Rewards and coupons



(d) Leaderboard

Figure 2.3: Screenshots of Hold application UI

2.3.3 StepBet: Get Active & StayFit

StepBet is a fitness app that aims to help people become more active by taking more steps on a daily basis. "Become more active and earn money doing it" is one of the slogans the application uses. The app motivates their users through commitment and real-money rewards that can be won through entering competitions. In their opinion, one of the biggest motivators to do something is money. The users can engage in different competitions, but each competition revolves around reaching a step goal. The participant(s) who reaches the step goal wins the competition and splits the money pot. To use the app, the user finds a game in the app and places a bet (real money) into the game's pot in order to join. The app will personalize a step goal based on the user's fitness level, which will increase through the use of the app. The goal is to walk as much as possible to

reach the personalized goal before the competition ends. Anyone can join, meaning the pot can grow pretty large. At the end of the competition, the pot is split between all participants who reach their goal. Participants who do not reach their goal, lose their money.

The app uses both extrinsic and intrinsic motivation. Intrinsic motivation is facilitated through the user's desire to be more active and walk more. Extrinsic motivation is facilitated through various gamification elements and money rewards. Gamification elements used in StepBet are points, rewards, competition, streak, social influences, and progress feedback. The main gamification element is competition.

Goal-setting is used in the app through the competition. An example of the goal of a competition is: "Complete 4 active days and 2 power days each week for 3 weeks to split the pot". The goals are specific, measurable and time-bound, which corresponds to being a SMART-goal. The goals are supposed to be attainable, since they are personalized to each individual, but the reviews reveal otherwise.

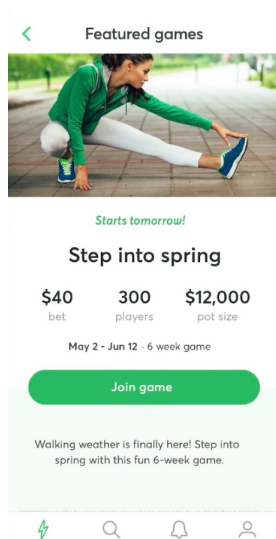
Some users find it unfortunate that the personalized goals increase too dramatically, leading to unfair competitions where people who have a goal of 7000 steps will receive the same prize as people with a goal of 20000. Some users even state that the app "sets you up to fail", due to the goals increasing too much.

The concept of "being held accountable" and the potential of an actual money reward is very motivating to the users. "Great way to push yourself to be active", "very motivating", "easy to use", "great tool for self-motivation" are some key-words from the positive feedback on the app. The users enjoy having an incentive to be more active, and find the competition-part of the app super motivating. That being said, a large amount of the feedback on this app revolves around the users' loss of money due to a buggy payment system.

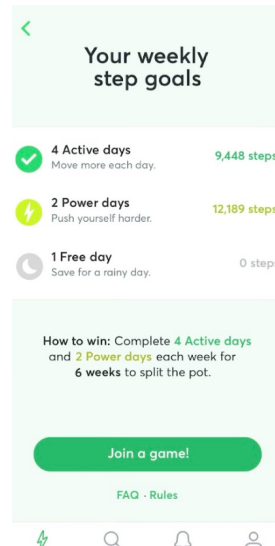
In other words, the concept is motivating but the implementation can be improved.

Below are some of the reviews from the users:

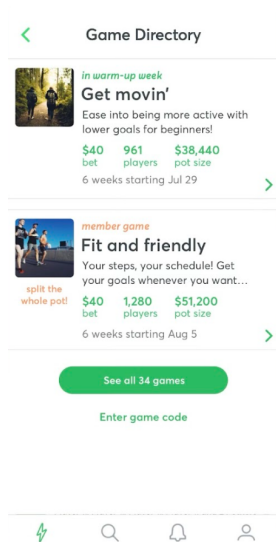
- "I started using this app about four months ago. I'm now totally addicted. Before this app I would maybe fill up my rings on my Apple Watch a couple times a week. Now EVERYDAY my watch tells me I filled all my rings. The thing I like most is it uses your Apple Health app data to calculate your steps needed each day. The goals are achievable for yourself."
- "A great way to get motivated."
- "Motivates you to get up and walk."
- "Stepbet is a great motivation to get moving. When I really get into a funk with my workout routine, the possibility of losing \$40 gets me off the couch more than anything. However, I've had Stepbet for a little over a year and my step goals have gotten out of control."
- "Like the WayBetter app, StepBet is a really fun concept and seems to have twofold method that make it work: 1.) Avoidance of loss: You worry if you lose, you will lose the ten or so bucks you invested into the game. 2.) Win: If you win, you gain money."



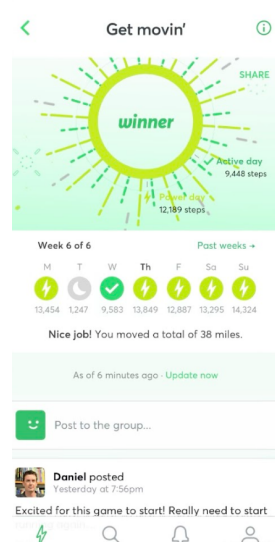
(a) Join game



(b) Goals are personalized



(c) Different games to join



(d) Result after a competition

Figure 2.4: Screenshots of StepBet application UI

2.3.4 Strava: Run, Ride, Swim

Strava is a popular fitness app that allows the users to track and analyze their activities and share it with their friends. In 2021 the app reached 95 million users across 195 countries, and they reported that about 2 million new athletes join every month [97]. Many fitness applications have the same goals and intentions as Strava, but few has experienced the same degree of success. What makes Strava stand out is that it uses people’s inherent motivation to achieve a healthier lifestyle or to practice sports. The app uses the science of motivation to create a fun experience that aims to change the users behavior.

Strava has managed to make the app into a type of social network, where users can compare themselves with and motivate other users and friends. A community is created, where users post and share activities to a feed, follow each other, join clubs and groups, compete against each other and workout with friends and strangers. The latter creates a team function, which motivates people

when they take on different challenges.

One of the gamification elements that is used to increase user participation is competition. This is, among other things, facilitated through leaderboards. Strava also offers a variety of challenges, which is a fun way of motivating the users to accomplish certain goals. A challenge can last anything from a day to a month. The goals of the challenge can be either individual or for groups, and users can choose between competing publicly on leaderboards or privately by tracking their progress. Some of the challenges are sponsored, which makes it possible to win real prizes and discounts. Everyone can sign up for the different challenges, which can be anything from "10 miles in week 40" to "June Climbing Challenge". Challenges can require the user to meet a specific time goal, a distance, an elevation or to be active for a certain number of days. After joining a challenge, the app tracks the user's progress toward the goal and reminds the user to complete it. Finishing challenges on time rewards the users with unique badges. The badge reward system in the app boosts engagement and participation.

The app collects and analyses fitness data, which makes it easy for users to follow personal progress, review different time periods, see their best efforts and so on. The app also displays progress bars for weekly and annual mileage goals. If a user falls behind on a goal, the app provides motivations to help the user keep on track.

"Strava segments" is a feature where popular stretches of road are marked so that a leaderboard of times for that specific stretch is created. This encourages users to beat others' records and to be the all-time fastest person on that segment.

The app uses both extrinsic and intrinsic motivation. Intrinsic motivation is facilitated through the user's desire to be more physically active. Extrinsic motivation is facilitated through various gamification elements. Gamification elements in the application involve leaderboards, medals, social interaction, badges, challenge, competition, and progress bars.

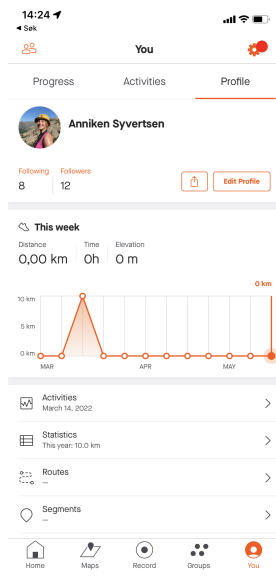
The app uses the motivational theory of goal-setting, both through challenges and competitions. Gamification is extensively used to motivate users to reach their goals.

Some of the reviews from the users are:

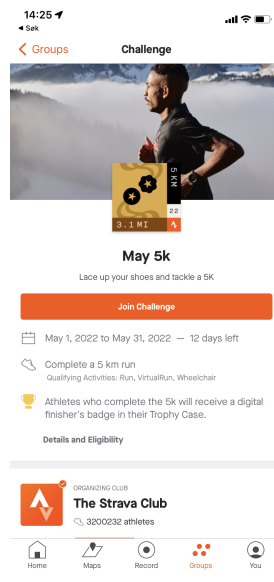
- "Segments and flybys are motivating features."
- "An amazing application that creates more enthusiasm and courage regarding workouts."
- "Best place to log activities, watch and compete with your own improvements."
- "Beat others or beat yourself, with this application you get plenty of motivation for both."
- "Very stimulating - compete against yourself or others."
- "My biggest motivation. Reads out progression against yourself and people you know."
- "I have used this application for two years now. Very good and can strongly recommend it to those who desires competition in their workouts."
- "Very social. Fun to compare yourself against friends or follow different activities around yourself. Inspiring."

-
- "Strava is an amazing application for people who love bicycling, running and working out. Here, you have the ability to compare yourself against others, all goals and units are accumulated, and very clear. Addictive!"
 - "Motivating when several friends also use strava, so you can follow their progress, and try to get better placements on segments."
 - "Great app for training, motivation to train, to push harder, to see progression."

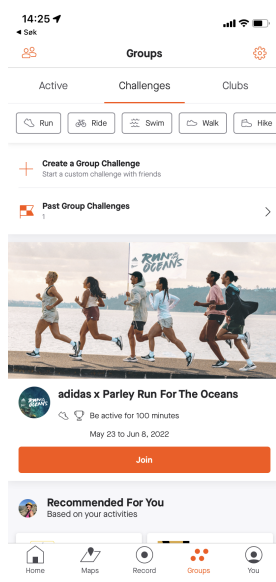
The main setback in the comments revolve around too much of the functionality being behind a subscription. Other than that and some bug issues, people are overall enjoying the app. They are excited that they can compete against friends or themselves and find it inspiring to follow others and see their activities. It is also interesting to see that some people are commenting "If it's not on Strava, it didn't happen" and "Did you even run if you didn't publish it for your friends to see?", which shows the motivational effect of a social platform where one can share activities. The users enjoy that they can compare themselves with others, set goals and be motivated to reach their goals, as well as being motivated to push their own records.



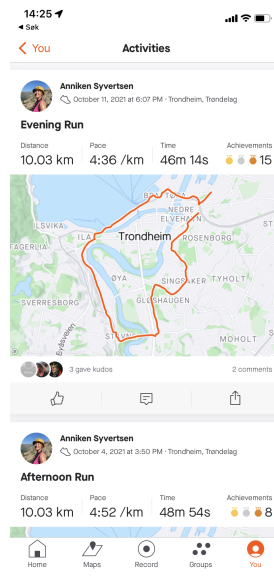
(a) Profile and statistics



(b) Example of a challenge



(c) Example of groups



(d) A shared activity with achievements and kudos

Figure 2.5: Screenshots of Strava application UI

2.3.5 Conclusion

After reviewing the apps above, some key findings stand out from the feedback:

- Forest: the users are motivated by having an extra **incentive to focus**, like growing a tree.
- Hold: the users enjoy most of all that the app **helps them to focus** on their tasks and avoid distractions. Many users want better rewards than what the app provides.
- StepBet: the users are motivated by the fact that you can win (or potentially lose) real money, i.e. **material rewards**

-
- Strava: the users are motivated by beating records, participating in challenges and sharing their activities, i.e. **competition and social interaction**

The users are extra motivated to do what the app intend them to do when there is an extra incentive do to it, like winning money or growing a tree. People are very motivated by records, both when it comes to beating friends' and strangers' records, but also beating themselves. It is clear that they are motivated when extrinsic motivation that can be harvested in real world is present. The review of StepBet showed us that the rewards not necessarily needs to come from the application, but that you can provide it yourself, in order to be motivated.

Chapter 3

Design

In this chapter, the development and design of the concept is presented. This is a part of *Step 2 - Suggestion* of the design and creation strategy. In this step, the creative leap from curiosity to a proposed solution is taken. The first section presents the insights from the prestudy, which resulted in a hypothesis and the concept idea. Section 3.2 covers the process from the initial idea to the final design of the concept. Section 3.3 presents an overview of the main features of the application. Finally, section 3.4 presents technology and design decisions, as well as a demonstration of how the app works.

3.1 Insights

The definitions, background theory and review of existing apps constitutes an attempt of understanding the state-of-the-art regarding student motivation and procrastination. Based on this, a knowledge base of the existing solutions and research was formed. This knowledge is later used when addressing the RQs.

It was found that research on procrastination among Norwegian students is sparse, and that it should be researched further in order to understand the prevalence of the problem. Only one study was found where numbers on procrastination among Norwegian students were presented, and it stated that 78% of Norwegian students reported that they were procrastinating in 2012 [26]. Procrastination was one out of four main themes which were identified as relevant to this thesis, in addition to motivation, goal-setting-theory and time management.

- **Procrastination** is the foundation of the problem. The subsection focused on understanding why it occurs and how it can be prevented in order to come up with a solution.
- **Motivation** was identified as a key factor in changing behavior. RQ2 is about understanding how to change study behavior and RQ1 aims to get an image of the current solutions and research in this field. The subsection included research on how people, and specifically students, are motivated, how it is related to performance and different ways to inspire motivation.
- **Goal-setting theory** is identified as one of the most accepted motivational theories and

was therefore found to be very relevant.

- **Time management** is a skill that is proven to reduce procrastination and increase academic performance.
- **Gamification** is a popular concept used to improve motivation, engagement and enjoyment. Competition is one of the key game design elements which motivates people to play, and is therefore of particular interest.

”Motivation and education”, ”motivation and gamification”, and ”gamification and education” are fields which are extensively studied, and researchers are constantly trying to understand how to increase student motivation and performance. In section 2.1, we saw different studies where gamification was used to enhance learning experience and increase enjoyment and engagement. That being said, the field of study mostly concerns gamification in a classroom environment and the use of gamification elements to increase learning and educational experience and performance. Research on how gamification can be used as a tool to decrease procrastination and increase the level of self-regulated learning is not as extensive.

Gamification elements targeted directly at learning has proven to produce both positive [30, 10] and negative [123, 50] effects, but research on gamifying *processes* that could lead to increased learning, such as time spent on school related activities (time-on-task), is sparse. In addition, leaderboards, points and badges are the mechanics which are mentioned in the majority of the studies, and effects of other mechanisms (like competition) are not researched as extensively. This is especially true within education, and more specifically, self-regulated time-on-task.

As reviewed in section 2.3, there exists several apps which use gamification in an attempt to help people remove distractions and avoid procrastination. The reviewed productivity apps focus on removing the phone as a source of distraction, and even though their user base is large, research on the effect these applications have was not found. Apps specifically focused on *increasing student activity* outside of lectures were not discovered. In this case, increasing student activity outside lectures does not regard gamified learning (e.g. quizzes and games related to a subject), but how to motivate students to spend more time on school related activities. One article [5] was found where the authors described the development of a framework and application that aimed to motivate the users to be productive and reduce procrastination. However, the app was not published, and a paper describing the testing of the application was not found. Additionally, the main gamification element was a leaderboard, and the app did not have students as its main focus. Through the review of the state-of-the-art, no applications or research focused on helping students increase self-regulated student activity and reduce procrastination using gamification, were discovered.

In subsection 2.1.3, we saw that competition is one of the key elements in games that motivates people to play [129]. It was proven to improve engagement and interaction in classroom settings as well as work as a strong motivator [71, 51]. The review of Strava revealed that users found it very motivating to compare themselves and compete against friends. We also saw that the concept of StepBet, where people put money on themselves in order to stay motivated to reach a goal, worked as a strong motivational factor. Additionally, we saw that goal-setting is one of the most supported motivational theories [74], that it is proven to improve academic performance [130, 23, 111, 87] and that setting goals is often used in games to make them fun, meaningful and motivating [82].

As we saw in subsection 2.2.3, self-efficacy, which is a quality that helps people resist distractions and complete schoolwork, can be increased through goal-setting. In subsection 2.2.2 we also saw that setting a deadline and setting a goal can help improve self-control, which is a quality that is proved to reduce procrastination. Goal-setting was also mentioned as one of the processes that self-regulated learners use to acquire knowledge and skills in subsection 2.2.1.

Based on this, the following hypothesis emerged:

H1: students are motivated to increase student activity and reduce procrastination if they participate in a challenge where they work towards a goal

To test out this hypothesis, a mobile application named Motiwork was developed, tested and evaluated. The concept of Motiwork was:

“An application that aims to motivate students to increase student activity through competition and goal-setting. The student can register a profile, set a workload goal, add friends, start a competition, and track hours spent studying. To motivate the student, the main feature is ‘starting a competition with a friend’, where they agree upon a workload goal and a reward that the loser owes to the winner. The workload goal indicates how many hours they should work by a deadline. The first user to reach the goal wins. After each registered study session, the user will receive points and a progress bar will display how far away they are from reaching their goal or winning the competition.”

In table 3.1, the final features of the application are presented together with the type of gamification element it is, the justification for including it and the theory the feature is based on. The game dynamics related to each gamification mechanic can be found in table 2.1. Section 3.4 elaborates on the details of each feature. Figure 3.1 shows the intended sequence of events.

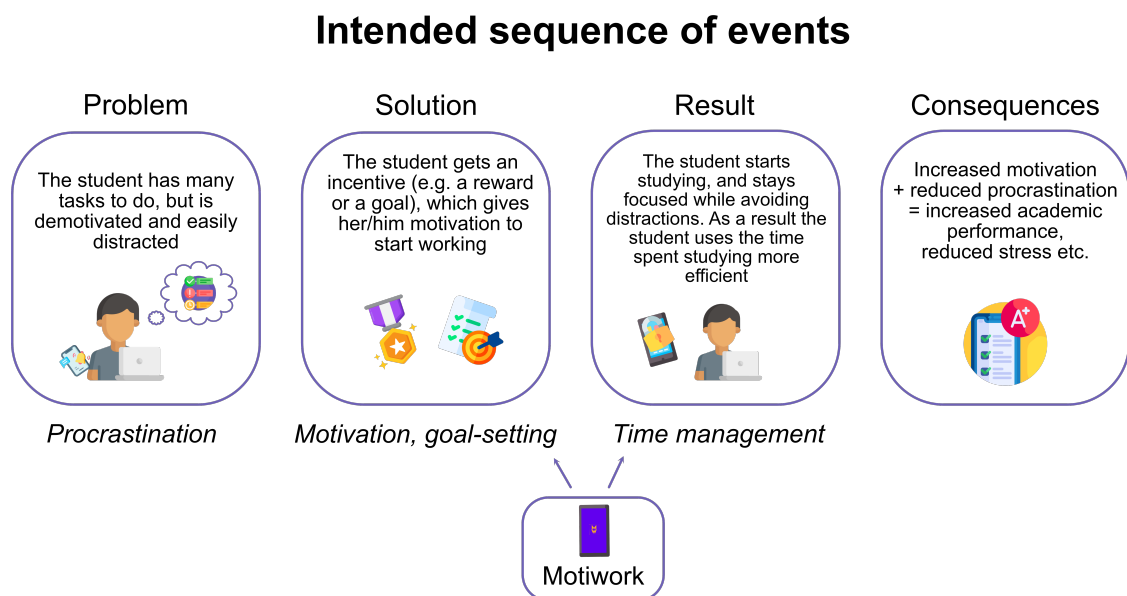


Figure 3.1: Illustration of the intended sequence of events

Table 3.1: Features based on findings from theory

Feature	Gamification mechanics	Justification	Relevant theory (subsection)
F1: Set a goal Register a time-based workload goal (reward if goal is reached)	Challenge	Goal-setting is positively related to academic performance and increased motivation	2.1.5 Goal-setting theory, 2.1.4 Time management, 2.1.2 Motivation, 2.1.3 Gamification
F2: Study session Start a study session (points when session is over, progress bar filling up)	Points, Progress bars	Starting a session removes the phone as a distraction and helps the student stay focused, thereby using the time more efficiently (time-management). This is the feature that adds progress to goals in competitions, and private goals	2.1.4 Time management, 2.1.2 Motivation , 2.1.3 Gamification
F3: Competition Create a challenge with a friend	Competition, Challenge	Competition is proved to increase motivation, engagement and enjoyment. To win the competition the user has to reach the goal first, which makes the goal-setting theory relevant in this feature as well	2.1.3 Gamification, 2.1.2 Motivation
F4: Progress tracking See progress towards goal and in competition (progress bar, leaderboard)	Progression bars, Leaderboard	Feedback on progress towards a goal maximizes motivational affordance of goal-setting theory Showing who is in the lead can generate competitive behavior	2.1.5 Goal-setting theory 2.1.3 Gamification, 2.1.2 Motivation, 2.1.3 Gamification

3.2 Design Process

This section presents the process of designing the concept and the user interface of the application that was developed in this project. The application was designed with the purpose of testing out the hypothesis presented in 3.1. To test out the hypothesis, a list of mechanics to be implemented was prepared. Table 3.1 shows this list, as well as the theory and justification behind each mechanic.

The application had to be user friendly, easy to use and functional. The intention was to test out the motivational effects of the mechanics, but in order to test them properly, the rest of the application had to be developed as well.

After deciding what the application should include, a list of user stories was developed. These user

stories included everything from logging in and registering a profile, to adding a friend and creating a competition. Based on this list, and the concept, the iterative design process was initiated.

3.2.1 Concept Development

The concept changed multiple times during the design process due to new information and insights from interviews and research. It started as a personal goal-setting application and ended as a competition based application, where the idea was to compete against friends based on workload.

Figure 3.2 shows how the process from problem statement to final concept went on, and the subsequent sections will explain the process in more detail. The review of existing literature was conducted continuously during the design process, which led to a constantly increasing knowledge-base regarding the problem and possible solutions.

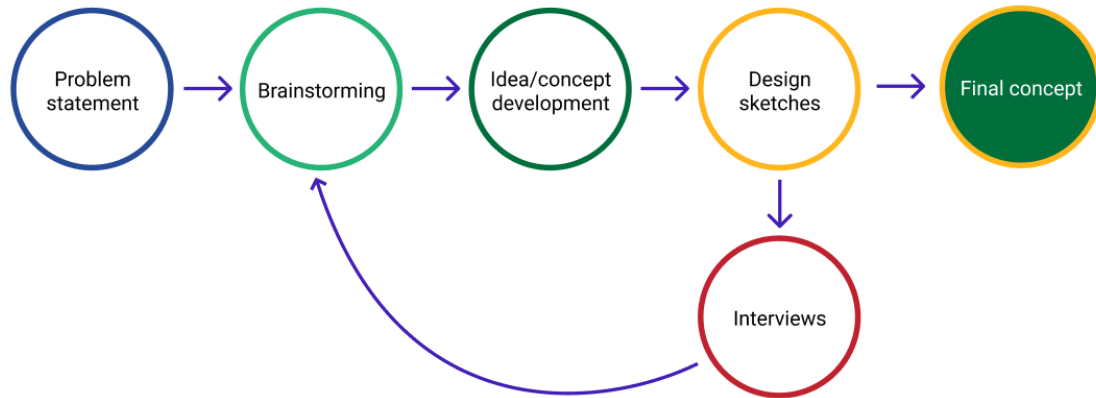


Figure 3.2: Illustration of the concept development process

3.2.2 First Iteration

The initial idea that emerged was an app that could motivate users to study through goal setting and workload tracking. The concept involved students registering their courses and desired workload goals for the semester, as well as a timer to track their progress. Traditional gamification elements like badges, levels, points and scoreboards were planned to be used as extrinsic motivation to increase engagement. A list of tentative features and elements to include was made, and a concept framework outlined. Low fidelity sketches were made to illustrate the solution and understand the intended user flow.

This idea emerged before the final hypothesis was settled, and the goal in the first iteration was to "create an app that motivates students to work". This was during step two, "suggestion", of the design and creation strategy. Based on the problem, a creative leap was taken where some tentative solutions were suggested. The solutions were chosen based on what other popular applications with a similar concept had implemented, as well as the knowledge acquired from the prestudy.

Inspiration to the features and design of the application was gathered through different creative-

network sharing websites and gamified applications. A mood board shown in figure 3.3 was used to gather the ideas and inspiration. Some initial sketches and drawings were made with pen and paper, along with some notes and mind maps to illustrate the concept. Then, some low fidelity sketches were made in Figma [38], which is displayed in figure 3.4. Low fidelity sketches were used initially to make it easy to change the components along the way. Then, after deciding which features to include and what they should look like, some higher fidelity sketches were made, displayed in figure 3.5. These sketches gave a decent image of what the application should look like. These sketches were static, meaning they were not interactive since they were not going to be tested based on usability.

When these sketches were finished, interviews were arranged in order to test the tentative solution and the different mechanisms. The results from the interviews provided data that would substantiate the final solution.

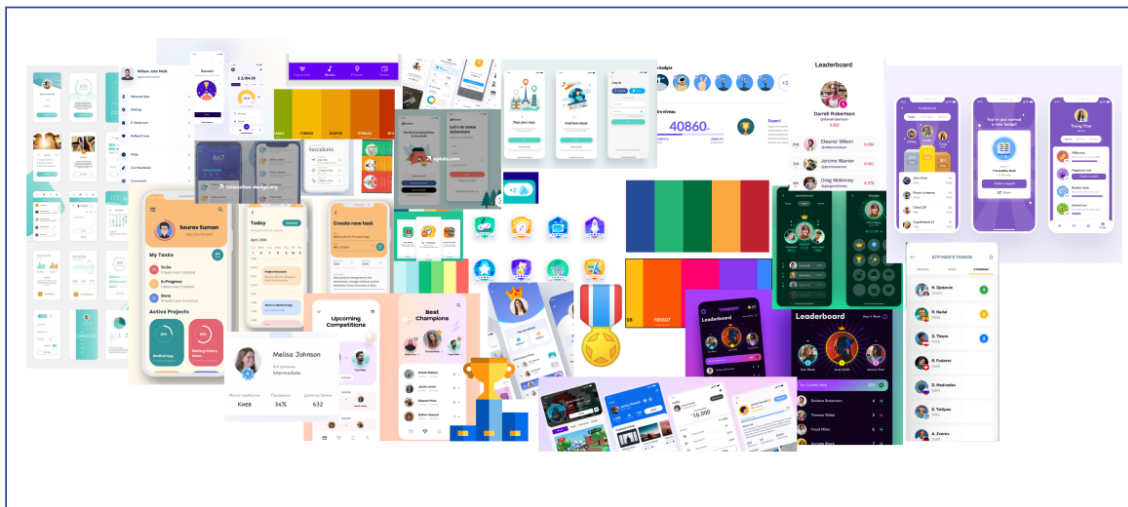


Figure 3.3: Moodboard of inspiration

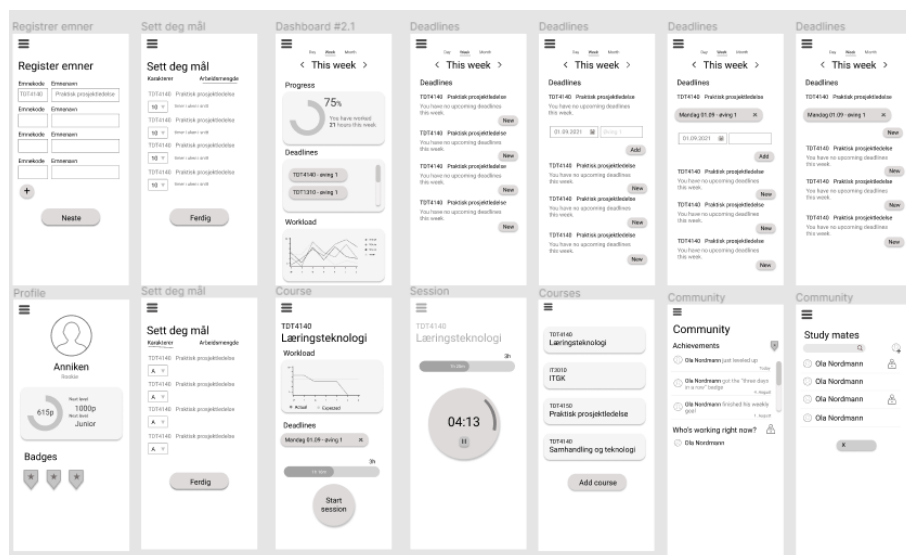


Figure 3.4: The initial low-fi sketches made in the first round of brainstorming

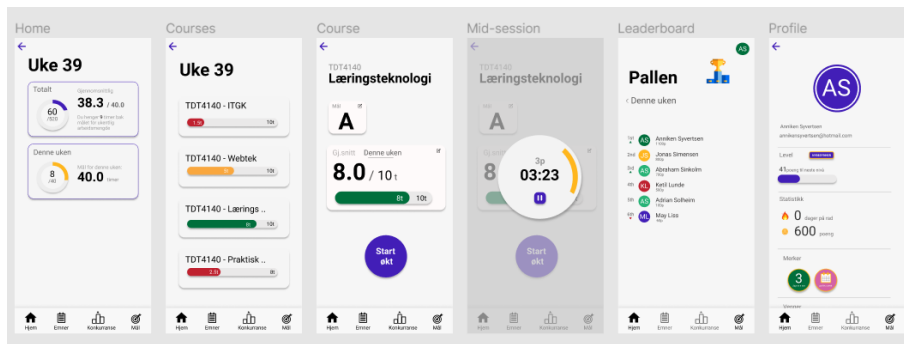


Figure 3.5: Examples of high fidelity sketches for the first concept

Interviews

It is important to note that these interviews were not part of the final data collection of the research strategy. They were conducted to get a clearer understanding of the problem, to see if there was any interest around the concept and as a type of usability testing of the design and mechanisms. Also, there were only six students who were interviewed because of lack of time and resources. This means that the conclusions based on the results from the interviews might not be correct, and they cannot be claimed to be reliable or representative. However, they did provide insights which gave indications of what mechanisms to include in the final application.

The main goal of the interviews was to test the interest in the initial idea of how the app should look and what features it should have. This way, it would be possible to understand whether or not students were interested in something like this before possibly wasting time on developing an application. Some questions regarding the students' tendencies to delay school work and last minute studying were also posed. The Hold app, which was reviewed in subsection 2.3.2, was also discussed, since this app also focuses on procrastination. Lastly, the presentation of the tentative design sketches were used as a way to usability test the design. Due to time constraints, usability testing with interaction was not conducted, even though it is preferable. Instead, sketches like the ones in figure 3.5 were shown, and questions regarding the features and design were posed.

The interviewees were six different students, all enrolled in a bachelor's or master's degree related to programming. They were gathered by asking friends and associates and will remain anonymous.

They all got the same questions before being shown the high fidelity sketches of the intended application. The main questions are listed in the table below. Q10 and Q11 were asked after the design sketches were presented.

Questions:

No	Question	Type of answer
Q1	How much does your phone distract you from school work?	Scale 1-7
Q2	How difficult is it to work evenly through the semester?	Scale 1-7
Q3	Have you ever experienced studying in the last minute before?	Yes/no
Q4	To what degree are you experiencing having to study in the last minute?	Scale 1-7
Q5	How motivated are you to work evenly through the semester?	Scale 1-7
Q6	Do you tend to set goals for the semester?	Yes/no
Q7	How much does competitions motivate you?	Scale 1-7
Q8	Are you more motivated by competing against yourself or others?	Me/others
Q9	Would you say your effort is 'the same', 'better' or 'worse' when you work with others?	Same/better/worse
Q10	Which features did you think were motivating?	Open answer
Q11	Which features did you not find motivating?	Open answer

Since these interviews were not part of the data collection of the research design, and doesn't provide data to the answers of the research questions, only the key findings will be presented. The key findings from the interviews were:

- In general, the response to “how much does competition motivate you”, was very high.
- All respondents had experienced pulling a “last effort” at the end of the semester multiple times before.
- The average motivation to work evenly throughout the semester was 4.33 on a scale of 1-7.
- The motivation to work evenly throughout the semester was on average higher than the ability to do it.
- When asked about work effort when working with others, everyone answered that they either work the same amount or better when working with others
- Although some of the respondents were insecure about whether they would use the app themselves, everyone liked the concept and said that they thought someone would use it and that there was a need for an app like this.
- Tangible rewards that could be collected were perceived as more motivating than receiving points, when using the application Hold. It was also agreed upon that the feature that Hold provides where you are 'unable' to use your phone helped remove the distraction of the phone.
- The features: in general, it did not seem like setting goals for grades and tracking how much time was spent on each course was very appealing to the students. However, the idea of tracking time while working received positive feedback, and many were used to the idea already from using productivity apps like Hold. When asked what features they found motivating in the sketches 4/6 responded 'competing against friends', and “friends” and “social aspect” were also among the most regular answers.

Conclusions from the first iteration

The interviews provided valuable information regarding student motivation and the different features of the app. This resulted in a holistic image of what the students wanted. Additionally, more research on the literature was conducted during this iteration, which also provided insights which were considered during the next iteration.

The fact that all the students had experienced procrastination and to some degree struggled with motivation supports the findings by [4, 27, 120] presented in section 2.1.1. Even though the pre-study had already indicated that this was a problem, the insights from the interviews further strengthened these indications.

The main finding carried on to the next iteration was how motivating the students found competition, which supports the findings by [114, 18, 71]. This, in addition to the insights from the theory, which stated that competition and challenge are strong motivational factors, laid the foundation for the next iteration.

3.2.3 Second Iteration

After the first iteration, new insights were acquired, both from literature reviews and from interviews. Based on these insights, a new list of mechanisms was developed, which is the list presented in 3.1.

The concept of the final application was now formed, and the idea was to use competition as the main motivational factor. Since a competition has a winner and a loser, some sort of reward had to be provided to the winner. It was clear from the interviews and the review of the existing applications, that tangible, real-life material rewards work as a motivational factor. For example, people using the app "Hold" said that they were motivated by the rewards even though they wished the rewards were improved. Based on this, it was decided that the winner should get a material reward. The problem was that there was no access to resources to provide these types of rewards. The solution to this was based on the concept of StepBet which was reviewed in 2.3, where users deposit their own money which is only returned if they manage to complete the challenge. In the review, it was found that the concept of "being held accountable" and the potential of an actual monetary reward was very motivating to the users. As a result, the idea that the participants of the competition would agree on a prize that the loser would give to the winner evolved. The concept of starting a bet with your friend, where the bet was whether or not you managed to work x number of hours during a period of time ended up being the main concept of the application.

When the final concept was established, the second design process was initiated. Various drafts were created, and random friends and associates were consulted along the way as a type of user-testing. They gave valuable feedback on different design decisions and functionality. Feedback included "I don't think that the leader of the competition is visible enough", "It's not intuitive how to add friends based on that design", "Competition should be more visible and outstanding", and so on. In most cases, more comprehensive user-tests are desired to obtain more valid feedback from a larger number of people. However, due to time and resource constraints, as well as the fact that the final evaluation of the app would focus on the mechanisms and concept rather than the system, it was considered good enough. Adjustments were made continuously based on the feedback. The main issue was to make the competition mechanism prominent enough. Many rounds with adjustments and new ideas were carried out before the final design was ready. Figure 3.6 shows a rough selection of the drafts in Figma after the second design iteration, and figure 3.7 shows some of the final sketches that were used as a guide when the application was developed.



Figure 3.6: A snippet of the various design drafts in Figma

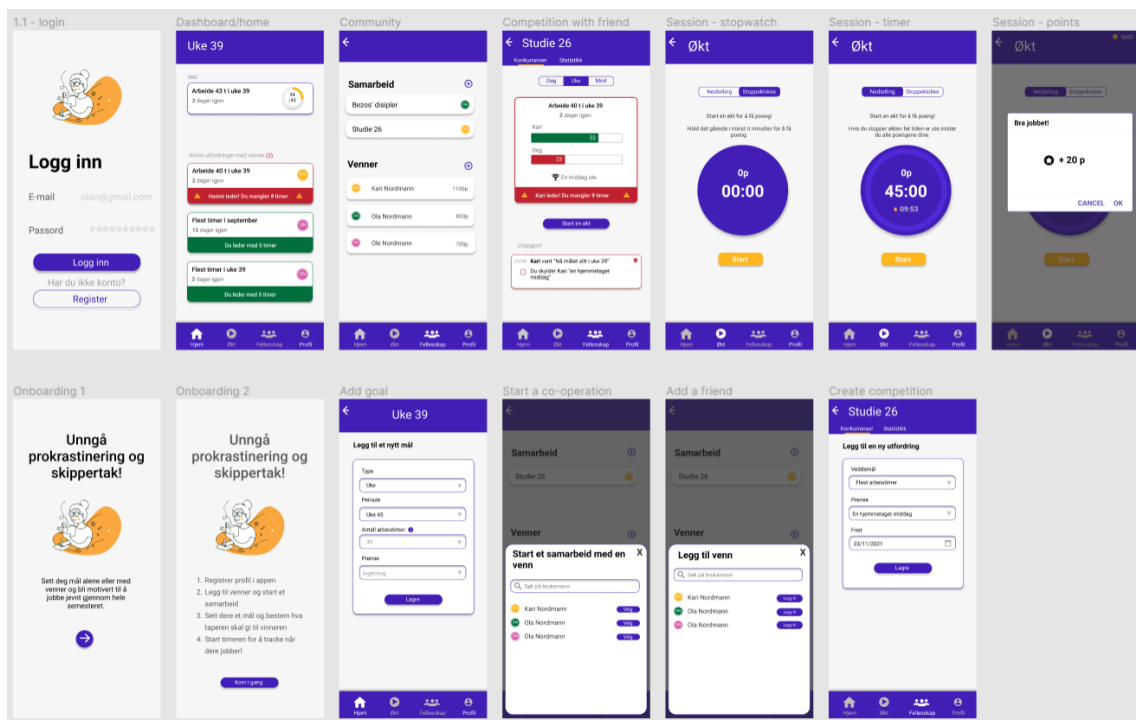


Figure 3.7: Sketches of the final concept design

Further, these sketches were used to create a functional prototype that could demonstrate the user flow. Figma has functionality for adding interaction to the design sketches, which means that it was possible to create a prototype which resembles an application. Figure 3.8 shows an example of different sketches that have been connected with various interactions, e.g. "click on that button and a new screen is displayed".

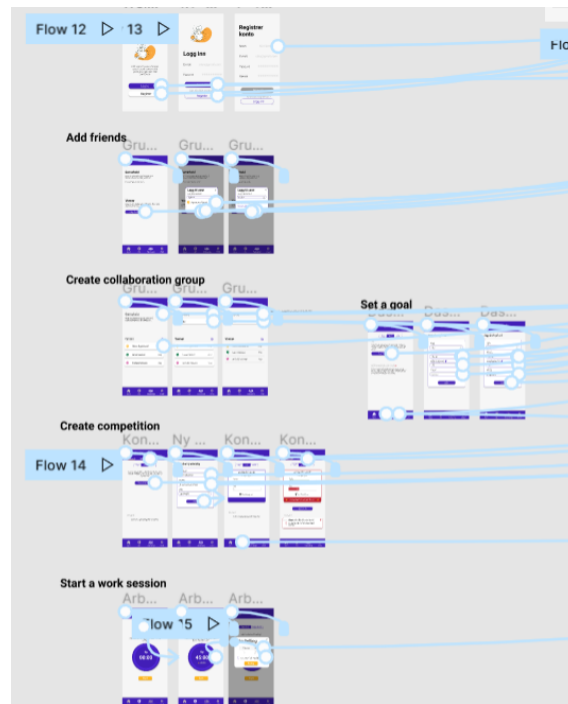


Figure 3.8: Interactions between different sketches in Figma's prototype mode

This was user-tested at random students that were available at school. Once more, these tests were very casual since the main tests would be conducted after the application was ready, and there was not enough time for proper user-testing during the design phase.

The feedback from these tests confirmed that the user flow of the application was good and that it was possible to navigate through and understand the application. It was then decided that the concept was settled, the design was finished, and the app development could begin. The final user interface of the application is presented in 3.4.4.

3.3 Main Features

This section will go through the main features of the application which was first introduced in table 3.1 and explain how they work.

3.3.1 Starting a Challenge

The main mechanic of the application was to start a challenge with a friend, i.e. setting a common workload goal and compete to reach it first. Based on the theory of the motivational effects of goal-setting and competition, reviewed in 2.1.5 and 2.1.3, it was decided that this should be implemented in the application.

Challenge and competition was found to be very motivating, both in games and in educational settings [71, 51]. The hypothesis was that the users would be motivated to study in order to win the competition. To start a competition, the user had to add a friend, and then send a cooperation request. Once the request was approved, a cooperation view was created. In this view, the members

could see old challenges and current challenges. They could also create a challenge, where they agreed upon a workload goal (e.g. 20 hours), a deadline, a goal name and a reward that the loser should owe the winner.

The participants had to provide their own rewards to the competitions. Some suggestions were provided by the app, like "a homemade dinner" and "a coffee", but it could also be customized. A hypothesis was that this would contribute to increased motivation, since losing the competition would mean that you for example had to make dinner to the winner. For both participants of the competition, there was something at stake which they would be held accountable for. A theory was that the users would be extrinsically motivated to win by the reward, and by the fact that they were being held accountable.

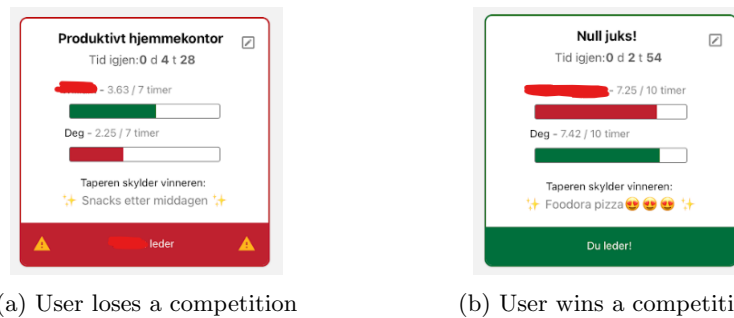


Figure 3.9: Competition display (leaderboard) visualizing the status in the competition

3.3.2 Track Time

To be able to have a competition, there has to be an objective. Since the focus was to reduce procrastination of school related activities and increase motivation, it had to be related to school. In section 2.3 apps which have been successful (according to the feedback from the users) in helping people stop procrastinating were reviewed. These apps focus on time-management through removing distractions and increasing time-on-task. Their main feature is to start a timer which locks the phone and tracks their focused time. Additional features include progress bars displaying their amount of focused hours and rewards when they have been focused for a certain amount of time. Since a lot of the reviews in the app store stated that the apps had helped reduce procrastination and removed the phone as a distraction, it was decided that this should be implemented as a part of the application. As a result, the main objective of the app was to start a session in order to track working hours.

The user could choose between a stopwatch and a timer when starting a session. The timer could be set to any amount of minutes and hours the user wanted, but did not add points unless the session was completed. The stopwatch could be canceled after ten minutes to cash in the points. Both features added ten points each time ten minutes had passed.

After completing a session, the users received their collected points. Points were calculated using this formula: $(\text{minutes} - (\text{minutes} \% 10))$, which gave them ten points for each ten minutes they had focused. For example; if the users were focused for thirty-four minutes, they would receive thirty points. The minutes spent on a session was both added to the personal goal workload and the competition workload.

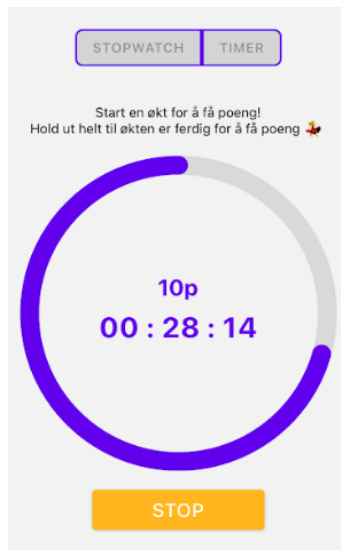


Figure 3.10: Example of a session using the timer

3.3.3 Register a Goal

In addition to competing to reach a goal, the application also had a feature where the users could set a personal goal. This was implemented because goal-setting in general is proven to be very motivating, and was found to have positive effects on both self-control and self-efficacy. In section 2.2 we saw that these are qualities that are positively associated with reduced procrastination, and a self-regulated learner. Additionally, it was desirable to test whether the user was more motivated to reach a goal when another person was trying to reach the same goal quicker, or when they only competed against themselves.

This feature was very similar to the competition-feature and worked as a *personal challenge*. The user decide on the amount of hours, a deadline, a goal name and a reward. In this case, the reward was something the users decided to "treat themselves" with if they reached the goal. Suggestions provided by the app included "a day off" and "ordering food for dinner". A theory was that the user would be extrinsically motivated to track hours by their own self-determined rewards, as well as seeing their own progress towards the goal.

The goals corresponded with the principles of the SMART goals reviewed in subsection 2.1.5.

- Specific: the goal had to have a name, and all goals regarded a specific number of workload hours. The users could also name the goal "complete assignment 1", even if the progress was measured in time spent.
- Measurable: progress towards the goal was easy to measure, since it considered hours.
- Attainable: the users could decide amount of hours themselves, which meant that they could customize it to their own abilities and time. However, this assumed that the users were able to assess their own abilities.
- Time-bound: the user had to decide on a deadline for the goal.

This applied to the goals in the competitions as well, since they had the same format.

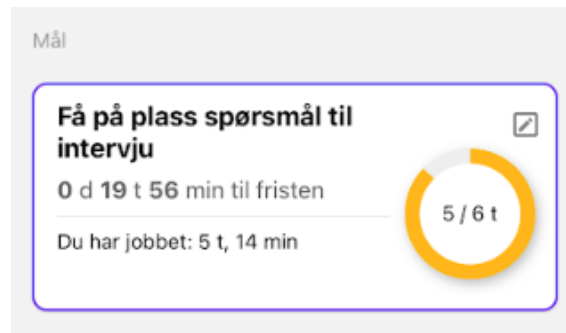


Figure 3.11: Example of what a personal goal might look like

3.3.4 Progress Tracking

Progress bars are an easy way to show progression towards a goal, and as we saw in subsection 2.1.3, it is proven that it works as a motivation. It was also noted from the prestudy that frequently noting progress improves self-efficacy and motivation [83]. In the application, tracking of progress was applied to both personal goals and competition.

Progress towards a personal goal was displayed in a progress-circle in the home-page. The color of the circle was yellow until the goal was reached. If the user reached the goal, the color was green to illustrate success. A theory was that the user would be motivated to work towards a goal by following their progress.

In the competition display, progress for both participants was shown. A theory was that the users would be motivated to work if they saw that the other participant was in the lead. Red and green colors were used to clearly visualize who was winning and who was losing, shown in figure 3.12b. Additionally, as shown in figure 3.9a, warning signs were rendered if the user was losing to give the impression of urgent pressure to catch up. The competition display was a modified leaderboard. A leaderboard is a high score list which is commonly used to identify the top performers at a specific activity. It shows, among other things, scores, rankings and awards. The application did not include a leaderboard comparing all the users, but the competition display showed the progress of the two competitors, their current score (measured in hours and minutes), and who was in the lead.

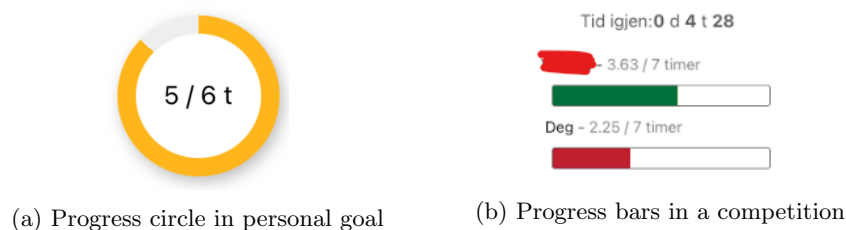


Figure 3.12: Different types of feedback on progress

3.4 Motiwork - The Final Application

This section covers decisions regarding technologies and design for Motiwork, as well as a demonstration of how the final application worked.

3.4.1 Architecture and Technologies

Client - React Native

React native [100] is a software framework used to develop mobile applications and was used for the client side of the application.

Server - Firebase

Firebase [39] was used for the server side of the application. Firebase is an BaaS (backend-as-a-service) API that allows for real-time data storage and data syncing, without the developer having to write or manage the server side of the application.

Firebase provides relevant features including authentication, database, notifications and app-distribution. For storage of the data, Firestore Database was used.

React Native Firebase [101] was also used. It is a collection of packages that brings React Native support for Firebase services, making Firebase integration simple.

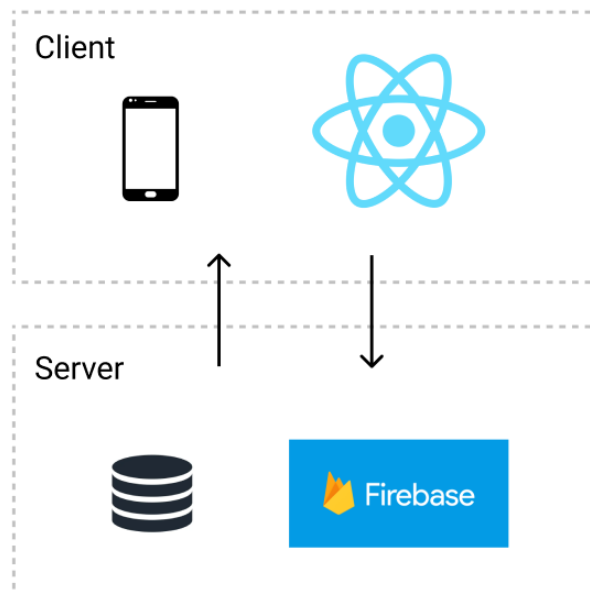


Figure 3.13: Architecture of the application

React Native Paper

React Native Paper [102] is a Material Design library consisting of a set of React components which implements the Material Design principles. Material is a Google design system. The design library makes it easy to create aesthetic and user friendly interfaces, without having to make your own

components. It was used to save time as well as to get a consistent design system which followed the Google design principles.

Apple TestFlight

The finished application was planned to be a beta application, meaning the final testing of the product would be beta testing. Beta testing is when you test a computer product before it releases commercially [131]. This means that the product is tested in real-world environments by external testers which has nothing to do with the development of the product. It differs from publishing an app to the app store or play store, where everyone can download it. Only invited testers can download the beta app.

In this case, the beta testing process included the following stages: release beta version, receive feedback, analyze feedback.

To release the application to external testers without publicly publishing the application, Apple TestFlight was used. Apple TestFlight [6] is an online service by Apple Inc which is offered to developers who are enrolled in their iOS Developer Program. Developers can upload a beta build of their application, and external testers who are invited can download TestFlight to install the beta application on their phone and provide feedback.

3.4.2 Branding

After the iterative design process was over, all the features and views in the application had a design. In this subsection, branding decisions, i.e. decisions on the app's appearance, will be presented. These decisions are relevant since they were a part of making the application feel authentic to the testers, as well as influencing the user experience.

Color palette

It was desirable that the colors would be bright, vibrant and playful to create an inspiring and fun interface. The primary colors of the color wheel (red, yellow, green) were used in addition to the main theme color, which was a blueish purple. Originally, the theme color was blue as can be seen in the design sketches, but due to using a design library whose primary color was purple, it was changed when developing the app.

- Purple (#6200EE): this was the primary color of the application. It was used for the logo, buttons, avatars and the stopwatch and timer.
- Yellow (#FFB61D): Yellow was used as a neutral color in the goal-setting progress circle. It was also used for some buttons and for when the user received points.
- Green (#006F3C): green is often associated with success and growth. In the app it was used to show when a user was winning a competition, or when they had reached a goal.
- Red (#BF2121): red is often associated with danger, which was exploited in the application to trigger that feeling within the user. It was used in the progress bars and competitions for when the user was losing the competition, to give the user a warning.



Figure 3.14: Color palette used for application

Illustration

The illustration used in the application was downloaded from a free library called Surface which was shared in the Figma community. It was used on the onboarding screens and the login screen. The illustration shows a girl doing homework, which was thought to be appropriate considering the application's theme. To fit the color scheme of the application, the background of the illustration was changed to yellow.



Figure 3.15: Illustration used in the application

Name

The application was called "Motiwork", which is a portmanteau word combining "Motivation" and "Work". The name was decided after trying various different combinations of words related to studying, motivation and procrastination.

Logo

A logo was quickly designed in Affinity Designer using two of the colors from the color palette, and the two first letters from motivation and work. The logo was used as the app-icon which was rendered on the screen when the user downloaded the application.



Figure 3.16: The Motiwork logo

3.4.3 User Flow and User Journey

Figure 3.18 shows the user flow of the application after the application is successfully downloaded on a phone using TestFlight. Figure 3.17 explains what the different shapes in the diagram represents.

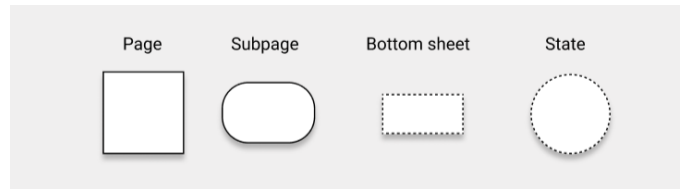


Figure 3.17: Explanation of the user flow diagram

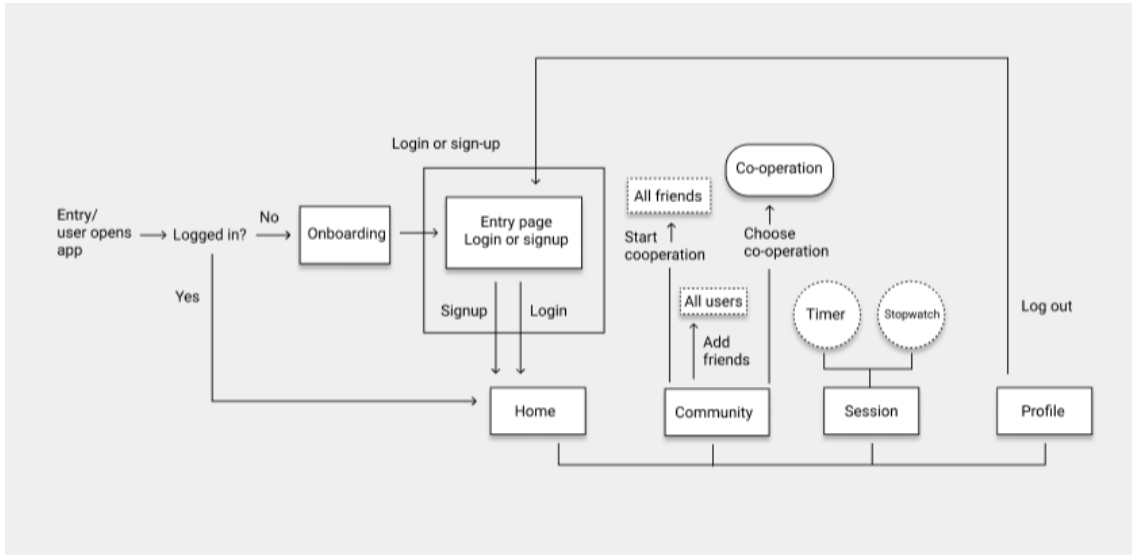


Figure 3.18: A diagram illustrating the user flow of the application

The following steps (which is also illustrated in figure 3.19 demonstrates the intended user flow of the application:

1. Register
2. Add friend
3. Start a cooperation: choose a friend to start a cooperation with
4. Create a challenge: create a challenge within a cooperation where the participants agree on how much to work (workload goal) and what the loser should owe the winner.
5. Track time: track time while studying in order to register workload towards the goal
6. Compete: be motivated by seeing the progress of yourself and the person you are competing against

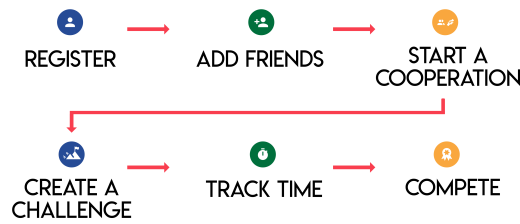


Figure 3.19: A simplified user journey map showing the intended use of the application.

3.4.4 Final User Interface - How The Application Works

In this subsection, a demonstration of how the application works will be presented through screenshots from the application. The screenshots were taken while the testers were testing the app, meaning the data is real and representative of actual usage. To maintain privacy, example users were created (Anniken Syvertsen and Ola Nordmann), and the actual testers' user names were censored.

When the application is downloaded from TestFlight, it is displayed on the home screen like a regular application. This was advantageous since it enhanced the impression of the application being real. An example of an alternative is to use a software called Expo, where the tester has to scan a QR-code with the camera or click on a link to open the application. This might enhance the feeling of the application being a prototype, which was one of the reasons why it was not chosen for Motiwork.



Figure 3.20: What it looks like after the app is installed from TestFlight

Onboarding

When the user opens the application without being logged in, an onboarding screen is displayed. Onboarding is a quick walk-through used to introduce the users to the application, in order to show users how to use the application. The goal of the onboarding was to clarify the objective of the application. Hopefully, this would result in the testing being carried out correctly.



Figure 3.21: Onboarding screen when users opens application without being logged in.

Register and Log in

After clicking on the "get started" button at the end of the onboarding, the user is taken to the register screen. If the user is already registered, it is possible to navigate to the login screen.

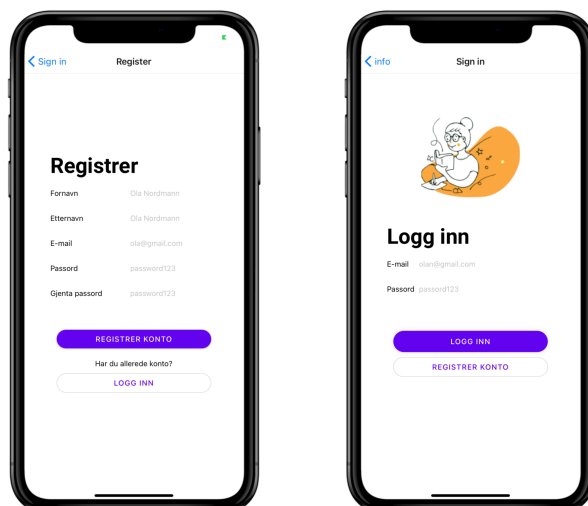


Figure 3.22: Register and login screen.

Empty States

"Empty state design" is a design that is displayed when there is no content yet, typically because

the user is logged in for the first time or because there isn't any data to display yet. It is important to take advantage of this state, since it can be used to teach the user how to use the application.

To ensure that it was easy for the users to understand how the application worked, informative text was used when the user encountered empty states. This included giving a reason for why no data was displayed (e.g. "you have no friends yet"), and providing the procedure to get the necessary data (e.g. "add friends"). Providing text to explain why no data is displayed ensures that the user does not think that there is an error or similar.

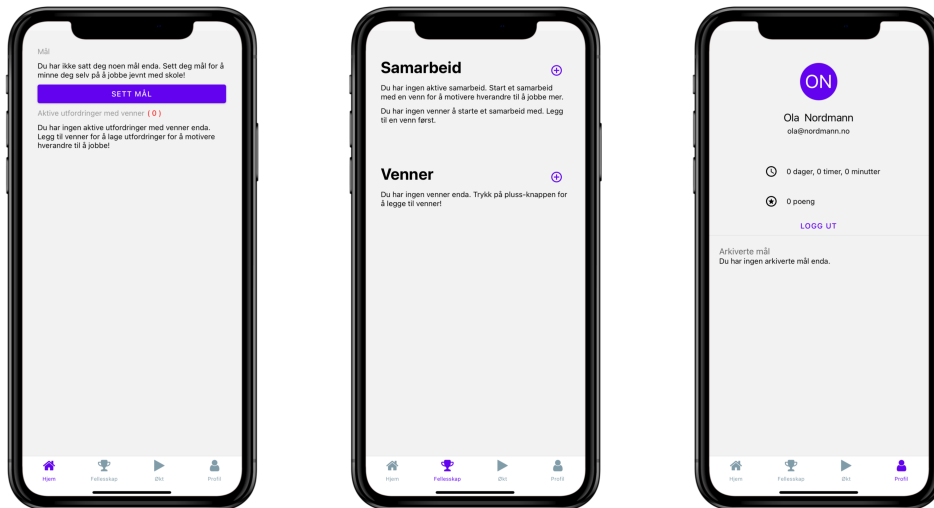


Figure 3.23: The application when users enter first time after registering

Add friend

To start using the application the intended way, the user needs to add friends. All users are displayed in a list when the user presses the plus-button on the community page, under the friend section. To add a friend, the user needs to send a friend request by pressing the add-button that is rendered next to a user's name. A friend request is then sent, and when the recipient approves the request, a friendship is established.

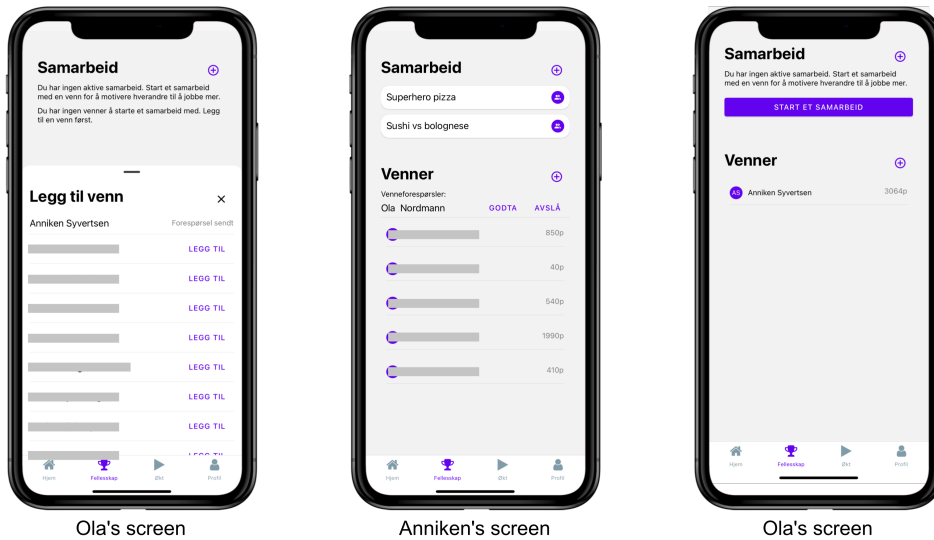


Figure 3.24: Add friend

Start cooperation and create a challenge

One of the main features of the application was to start a co-operation with a chosen friend, and then create a challenge. A cooperation request can be sent to a user who is added as a friend. If the request is accepted, a cooperation is initiated, and it is rendered in the 'cooperations' section. Each cooperation has a separate view. The view shows who the members are, what they have named the cooperation, any ongoing challenges and previous, completed challenges.

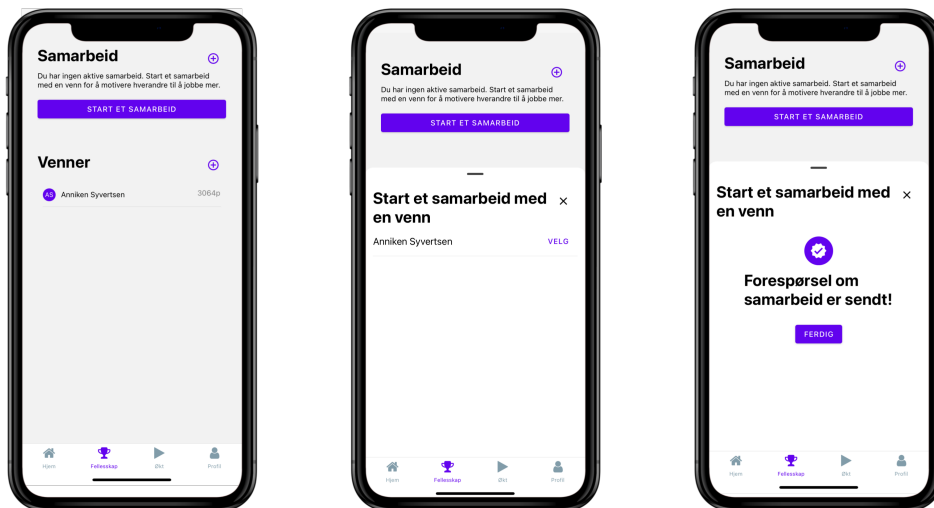


Figure 3.25: Start a cooperation with a friend

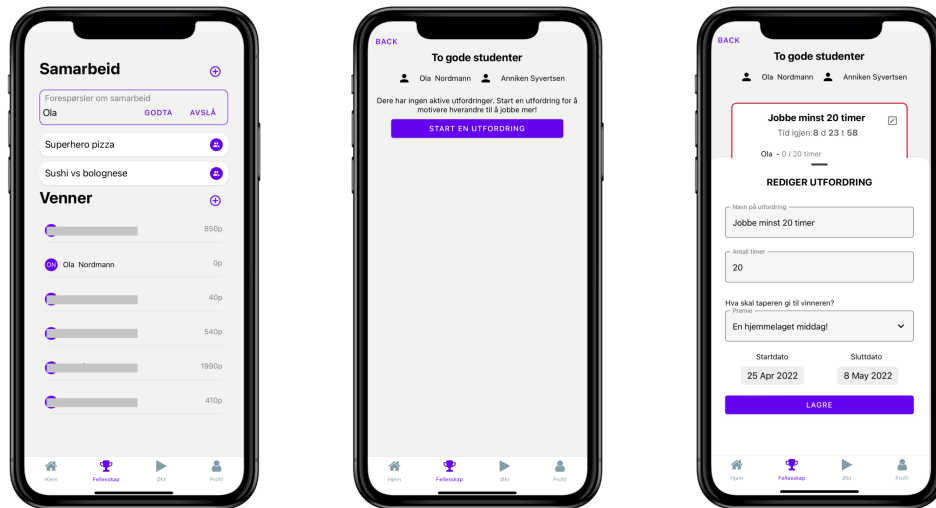


Figure 3.26: Accept a cooperation with a friend, and start a challenge

Creating a challenge:

- Set the goal of the challenge. The users decide what they want the goal to be, e.g. "work at least 30 hours next week"
- Set a workload goal (i.e. number of hours) for the challenge
- Agree on a reward for the winner, which the loser will provide
- Set a start date and an end date of the challenge

How the challenge works:

- When the users start a session and track the hours they study, the hours are registered in the challenge. The progress towards the goal is visualized in a progress bar for each participant
- If the current user is closer to the goal than the opponent is, this is visualized by green color and the text "you are in the lead!"
- If the opponent is closer to the goal, this is visualized by a red color, text saying "'opponents' name' leads" and warning signs
- If a person reaches the goal before the end date, she or he is the winner of the challenge. The challenge is then registered as completed and no more hours are registered. Text states who the winner is, either "you won" or "'opponents' name' won". The border color of the challenge reflects the winner; red if opponent won, green if current user won
- Once the end date is reached, the challenge is automatically archived. The archived challenges in a cooperation are displayed in the cooperation tab, below the current active challenge
- If no one reaches the goal before the end date and the challenge is archived, the person who is the closest will be registered as the winner of the challenge

- A button is displayed below the challenge, which makes it possible to archive the current challenge and start a new one

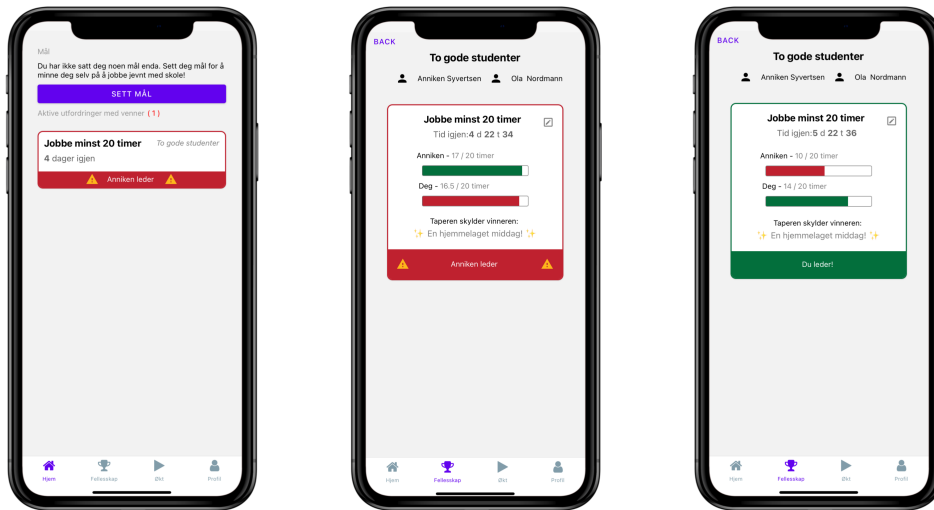


Figure 3.27: Cooperation in action, the screens when you lead and when opponent lead

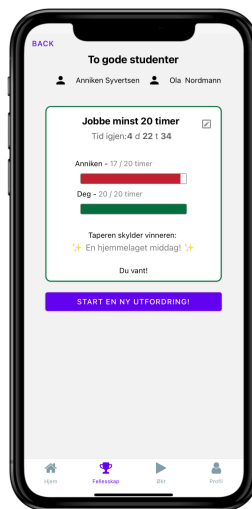


Figure 3.28: A completed challenge where the user is the winner

All ongoing challenges with friends are displayed at the home-screen, as shown in the left-most screen in figure 3.27.

Set goal

One of the possible actions of the application was to set a personal goal. The feature is similar to creating a challenge, but instead of competing against a friend the users compete against themselves. A progress circle shows the user's progression towards the goal. It is also possible to edit the goal, if the user clicks the 'edit' button at the top right corner of the goal display. The possibility

to edit the goal was added in case the users set the wrong date or hours and wanted to change it.

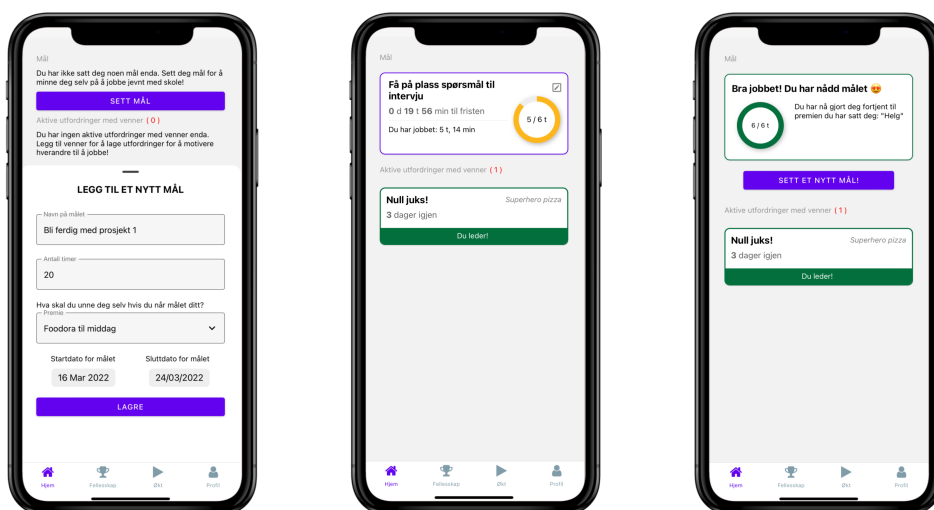


Figure 3.29: Setting a personal goal, working towards it and reaching it

Session

The user can start a session either through a stopwatch or a timer. If the user chooses the timer, they can choose how many minutes they want a session to last. Ten points will be added for each ten minutes. Points will only be received if they do not exit the session before the countdown is over. In stopwatch mode, ten points will also be rewarded each ten minutes, but the session can be ended at any time to cash in the points. At the end of each session, the duration of the session will be added to any goals or challenges the user participates in.

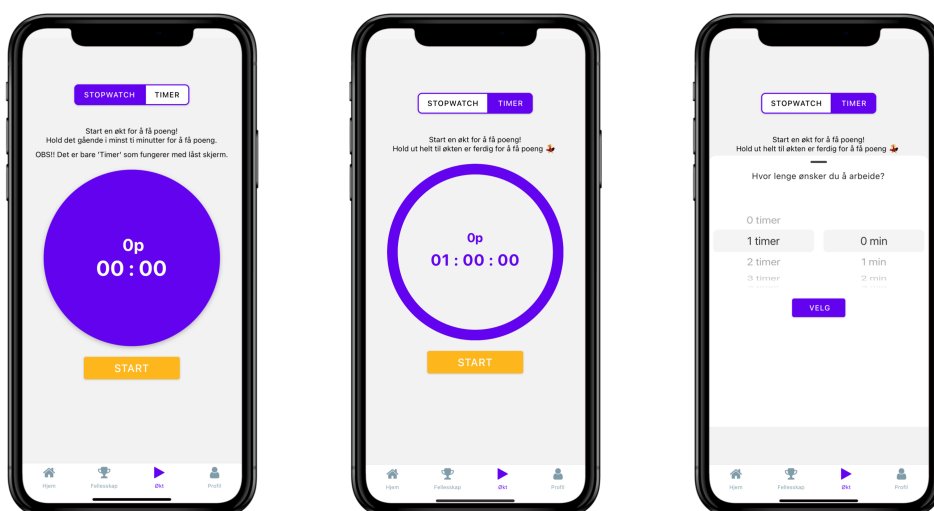


Figure 3.30: Stopwatch, timer and set timer

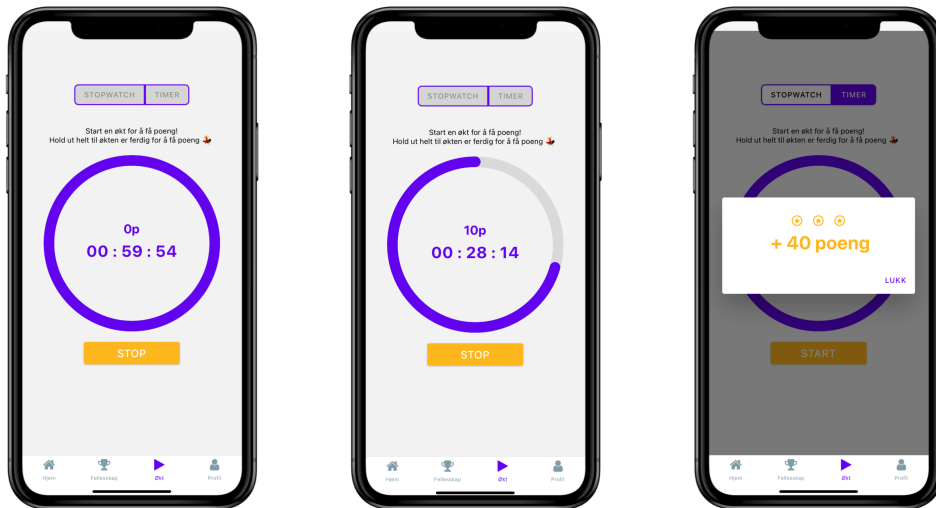


Figure 3.31: Starting a session with timer, each ten minutes adds 10 points

Chapter 4

Development and Implementation

This chapter addresses *Step 3 - Development* of the design and creation strategy, which is where the idea is implemented.

4.1 Development Tools

To gather inspiration, design, plan and create the user interface of the final application, different tools were used. This section presents the main development tools that were used in both the design and implementation phase.

4.1.1 Figma

Figma [38] is a free, cloud-based design tool which focuses on use in user interface and user experience design. The tool makes it easy to design and test a user interface with 'close-to-reality' prototypes.

Figma includes a simple prototyping tool which includes smooth transitions between frames, making it possible to create user interfaces which resemble the intended end product.

Figma was used to gather inspiration in a mood board, create user flow charts, design low-fidelity and high-fidelity sketches, and to create interactive prototypes that were used for user testing.

4.1.2 Google Drive

Google Drive [43] is a free, cloud-based file storage service developed by google. It contains productivity software like Google Docs Editors, which includes Google Sheets, Google Docs and Google Forms. The different software were used to plan the project development process and gather information. Google Sheets was used to create the initial backlog with all the user stories, as well as a development plan. Google Docs was used for different forms of planning and information gathering. Google Forms was used to gather the emails of students who were interested in testing the application. The form with the emails was deleted as soon as the test period was over.

4.1.3 GitHub

GitHub [42] is an online code hosting platform which provides version control for software development. It allows developers to create their own repositories and to save code. The platform enables having multiple versions of a project at the same time, through a feature called *branching*. Branching makes it possible to change different features on your project, without changing the main source of code. This turned out to be really helpful in the project, as it was possible to roll back to old, working code when new features introduced unexpected bugs.

GitHub was used to store code in a safe place, to keep different versions of the project and to keep a kanban board with the project backlog.

4.1.4 Affinity Designer

Affinity Designer [3] is a vector graphics editor developed by Serif Europe. It was used to design the logo for the application.

4.2 Systems Development Methodology

A systems development methodology is a process used for analysis, design, implementation and testing of a product [93]. When developing a software product, it is often referred to as Software Development Methodology. Since the product was developed by a single person (solo developer) instead of a team, and no external customer was involved, it was challenging to find a perfect methodology to apply. However, since a working application had to be developed in just three months, it was important to have a framework with some guidelines to avoid chaos and maintain productivity. It was decided that agile development should be used, since the design or the requirements of the Minimum Viable Product (MVP) could change based on new knowledge, capacity, time limits and other factors during the project. Therefore, non-agile methods like waterfall (a sequential approach where each stage is relying on the completion of the previous stage) was not considered. Artifacts and theories from the Scrum methodology were used to create a systematic way of working in order to have an MVP ready in time for testing. Scrum was used as main inspiration since it is an agile and heuristic framework which is easy to tailor.

The applied artifacts from scrum were:

- **User stories:** natural language explanation of a software feature, which will be explained further in section 4.3
- **Product backlog:** a prioritized list of tasks, where the developers pick tasks when there is capacity [99]. Displayed in figure 4.1
- **Sprints:** a sprint is a short period of time where the goal is to complete a given set of tasks. Each sprint was planned to last three weeks and contained a set of tasks. The sprints included user stories that, if all were completed at the end of each sprint, constituted a working product that could be tested. Although it was desirable to implement all the features in the backlog, an MVP would be ready if all tasks in sprint 1 were completed. This was important due to the fact that if the development process took longer than expected, there would still be a

product with some functionality (which included the main features) to test at the end of the project.

- **Sprint backlog:** a queue of the tasks from the backlog that is planned to be finished during a given sprint
- **Definition of Done (DoD):** DoD is one of the most popular practices from agile methodology [116]. It consists of a set of minimal criteria that defines whether a deliverable is done. In this case, DoD was used as a guide on how to acceptance test a user story. If it worked as expected, the user story could be categorized as 'done'.

ID	Name	User story	Priority	Size	"Done"	Done
#1	Register profile	As a student, I want to be able to register a profile in the application, so that I can use the provided features	Critical	M	Register information, click 'register', forwarded to home page. User information is registered in the database	
#2	Log in	As a user, I want to be able to log in to the application, so that I can access the features	Critical	M	Log in using user credentials, forwarded to home page	
#3	Add friends	As a user, I want to add other users as friends, so I can be motivated by seeing the efforts of my friends	High	L	Click on 'add friends', search on friends username, click 'add', get confirmation that friend request is sent	
#4	Invite friends	As a user, I want to invite my friends to register a user in the application, so that I can add them as friends	Medium	S	Click 'invite friends', choose from options (SMS, copy link, email...), get confirmation that invite was sent	
#5	Start a cooperation	As a user, I want to invite my friend to join me in a cooperation, so that we can compete against each other	High	XL	Click on 'start cooperation with friend', add friend from list of friends, write a name for the cooperation, click 'invite', get confirmation that cooperation-invite was sent	
#6	Register a goal	As a user, I want to register a work goal, so that I can plan my work load and be motivated by it	Critical	XL	Click on 'set goal', bottom sheet pops up, fill in form with information about the goal, click 'done', see that the goal pops up on home screen	
#7	Visualize statistics	As a user, I want to see statistics, so that I can see how much I have worked	Low	L	Go to profile page, see relevant information about workload	
#8	Register a bet/challenge	As a user, I want to register a bet with my friend, so that we can motivate each other to work	High	M	Go to a cooperation page with a friend, click 'start challenge', fill in form with challenge information, click 'done', see that challenge pops up	
#9	Start a session	As a user, I want to start a work-session, so that I can register the hours I work	High	XL	Click on 'session'-tab, choose either stopwatch or timer, start session. When app closes, the session stops. It also counts points every ten minutes.	
#10	Active challenges	As a user, I want to see the ongoing challenges I have with my friends, so that I can easily get an overview of the challenges I am participating in	High	L	Go to Home page, active challenges is displayed under the section 'active challenges'	
#11	Progress	As a user, I want to see how many hours I have worked, so that I can see my progress towards my goals	Medium	M	Go to Home page, the current goal with current workload and workload goal is displayed	
#12	Settle bet	As a user, I want to settle a bet when I have 'payd my debts' after the competition has ended, so that it can be registered in the application	Medium	S	Go to archived challenge, click on 'settle bet', see that bet has changed status to 'settled'	
#14	Watch friends profiles	As a user, I want to click on a friend to see their profile, in order to get motivated by their scores	Low	M	Click on friends user name, be directed to their profile page	
#15	Handle notifications when app closes	As a user, I want to get a notification if I close the app during a session, so that I know my session will be stopped if I don't go back ASAP	Medium	L	Start a session, exit app, get a notification that says 'Session will stop if you don't return'	
#16	Profile page (self)	As a user, I want to click on my profile, in order to see information registered about me	Medium	XS	Click on profile page, see information	

Figure 4.1: A screenshot of the user stories in the product backlog.

In addition, a **Kanban board** was used on Github, as shown in figure 4.2. In a kanban board, user stories are represented by cards on a board, with different lanes to represent the process steps of a story. The lanes included: "product backlog", "current sprint backlog", "in progress" and "done". On Github, each card is called an "issue", and each issue can have multiple tasks that can be checked off upon completion in order to track progress. The board made it easy to get an overview of the product progress, and to visualize how much work remained in a sprint.

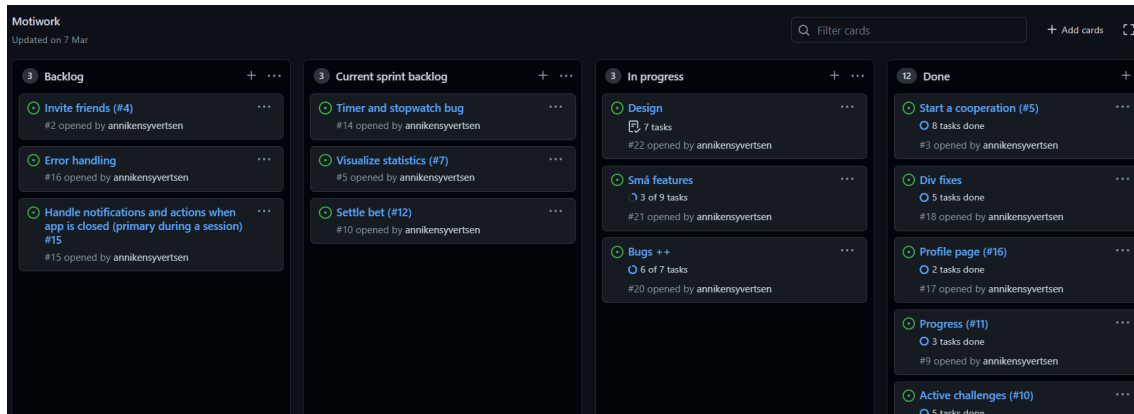


Figure 4.2: The kanban board in Github

4.2.1 Working as a Full Stack Solo Developer

In this project the product owner, the designer and the developer were all roles possessed by the same person. In contrast to standard software developer projects, where there often is a team of developers working together and maybe a designer, it was only one person working as a full stack solo developer. This brought both advantages and disadvantages.

Advantages included:

- Complete ownership to the entire product.
- Complete understanding of what the end product should be.
- No misunderstandings or miscommunication between different team members or departments (e.g. between designer and developer).
- Seamless development from product idea to finished product without having to wait for someone else to finish something.

Disadvantages included:

- Resources: there is only so much a solo developer can produce in three months.
- Problem solving: pair programming and rubber ducking is an efficient way of solving a problem or a bug.
- Second pair of eyes: a code snippet or design can often benefit of a second pair of eyes.
- Limited knowledge and competency: the knowledge and competency of the developer is all there is. Everything else needs to be obtained, often through hours of googling.

4.3 User Stories

User stories is a way of defining overall requirements (functional requirements) in a non-technical way in agile development projects. The purpose of a user story is to capture a requirement's

essential elements; *who* it is for (persona), *what* it expects from the system (need) and *why* it is important (purpose) [76, 103]. It is an explanation of a software feature written from the perspective of an end user. Reading a user story should result in knowledge about why it should be built, what it is, and what value it adds. One of the benefits of creating user stories, contrary to making a simple todo-list of tasks, is that they keep the focus on the user [103]. This means that it is easier to focus on solving problems for real users, which was important in this case since the end-product had to be something that potentially could solve the problem being researched.

Deciding on a set of user stories was especially important since there was no external customer and therefore no one to make demands on what the final product should include. Having a clear set of user stories made the absence of a customer less prominent, since requirements were established from the beginning of the project. An MVP was defined, where the necessary features were written down as user stories. This way, there was no uncertainty regarding what had to be included in the final application when the development started. Also, since the user stories were prioritized, it was easy to get started since the ones with the highest priorities had to be completed first. The fact that a size estimate was done on each user story made it possible to set up a realistic and flexible plan of when each user story should be completed.

Each user story had the following fields:

- ID: a unique, permanent ID that could be used to easily identify the user story, even if the name changed.
- Name: a descriptive name making it easy to understand what feature the user story regards.
- User story: written in the format popularized by Mike Cohn in [22]; “As a [type of user] , I want [goal], so that [some reason]”.
- Priority: all stories were prioritized using low, medium, high or critical to make sure the most important features were implemented first. Stories with high and critical priority had to be included in the MVP in order to have something worth testing.
- Size: to get an overview over the workload of the user stories, each user story got a rough size estimate. Sizes from XS to XL were used. XS was considered to be an easy and small task that would take a maximum of two to three hours. XL was considered to have a workload of a couple of days and could also require new technical knowledge.
- DoD (definition of done): each user story had a description of what was required to be implemented to say that it was done.

Together, these fields provided a clear overview of the workload, the functionality and the priorities of the different features that should be implemented in the application.

All the user stories were gathered in a backlog, and later these were added to the kanban board on GitHub. All user stories were divided into small sub tasks where the specific steps that had to be completed in order to finish the user story were defined.

4.4 Challenges during development

During the implementation of the application, quite a few challenges were encountered leading to the implementation process being dragged out about three weeks. These mainly included technical bugs which proved to be very difficult to solve. For example, the app would compile to an iPhone 6s with iOS version 13.0, but not to an iPhone 11 with iOS version 15.3. It was important that the application worked across different operating system versions and on both new and old iPhones, since it could not be assumed that the testers had a certain type of phone. This bug was challenging to solve since there were no error messages and few other people who had experienced the same.

This, and other bugs and technical problems, resulted in some of the user stories not being finished. Additionally, there was only one developer who lacked a lot of the technical competence which had to be acquired. That being said, the MVP was finished and the most important features were implemented.

Chapter 5

Evaluation

This chapter describes how the study was conducted, in accordance with the chosen research design and methods which was presented in section 1.4.

5.1 Study Design

This section describes how the participants were chosen, how the testing was conducted, and the data collection of the study.

5.1.1 Participants

Sampling Technique

To recruit participants to the study, non-probabilistic sampling was used. Non-probabilistic sampling is used when researchers do not know whether the sample is representative of the overall population of the study [93]. It was used due to difficulties in finding students willing to participate. These difficulties included time-constraints, lack of channels to reach out to students and not being able to offer compensation due to faculty constraints.

The participants were found through convenience sampling. Convenience sampling is a technique where the researchers find respondents who are convenient to them, either because they are easy to reach or because they are willing to help [93]. In this case, convenience sampling was acceptable since the only criteria for the participants was that they had to be a university student. This criteria was developed based on the research problem, which concerned university students in general. Snowball sampling, where a participant introduces other potential participants to the researcher [93], was also used. This was advantageous since it resulted in participants who were not familiar with the interviewer from before, which contributed in reducing potential bias.

The participants were found through:

- Contacting people who were relevant to the study directly.
- Sharing a post that announced the need for students to participate in a study on social media

(Slack, Facebook wall, Facebook chats). The post included information about the study as well as a form that could be filled out if they were interested.

- Participants in the study contacted their friends voluntarily and asked if they wanted to join them in the study.

The form the interested participants filled in, included fields for first name, last name and email. After the participants had been contacted, this data was deleted.

In the recruiting of the participants, no compensation was promised due to not receiving definite confirmation for funds from the faculty. It is probable that this led to fewer participants being willing to participate, since there was no external incentive (reward) to participate. However, it should be noted that since one of the goals was to reveal if the participants were motivated by the application, the promise of a material reward to participants in advance of the testing could possibly interfere with the results. Since no compensation was promised, it could be certain that the possible motivation experienced did not originate from his.

In total, 13 participants installed the application on their device. Of these, 12 ($n = 12$) were willing to participate in the follow-up interviews. Only the participants who were interviewed will be included in the study.

All participants were Norwegian university students who were spread across different years of study ($M = 4.17$, $SD = 1.34$, $\text{min}=2$, $\text{max}=5$) and enrolled in different study programs. Most of the students were in their last year of study and were writing their master thesis (66.7%, $n=8$). The different study programs were Master of Science in Informatics ($n=4$), Environmental Physics and Renewable Energy ($n=1$), Sociology ($n=1$), Marine Technology ($n=2$), Marine biology ($n=2$), Mathematics ($n=1$) and Biotechnology ($n=1$).

The students were aged 21-25, ($M = 23.75$, $SD = 1.42$), and there were 7 females (58.3%) and 5 males (41.6%) that tested the application.

5.1.2 Procedure

The following subsection describes the process the participants of the study went through during the treatment and data collection.

Step 1: Information

A short period of time after the test subjects had filled in the interest form to participate in the study, they received an email explaining the process of the testing. The email included an information sheet which explained the test process, the concept of the application, the assignment, bugs in the application, instructions regarding what they should focus on (concept, not design) and a to-do list. The to-do list said they had to sign the consent form, sign up for an interview and download the application. Appendix A contains the complete letter. Appendix C contains the consent form. A few moments later, they received an email from TestFlight, which included a guide on how to install the application on their phone. After installing the application, the participants could start the testing.

Step 2: Testing of application

The duration of the testing varied between the different test subjects, based on how much time they had and when they were contacted. The application was tested the last two weeks before Easter, which led to some of the testers' test period being cut short due to traveling and so on. Unexpected factors like illness also affected the test period of some of the test subjects. The test period ranged from two to ten days. After the initial test period had started, more students were recruited and joined the study. The assignment the testers received in the information email was:

"Your assignment is to download the application, add one or more friends and start a challenge where you decide a reward that the loser should owe the winner. A cooperation can only include two people, but you can create multiple cooperations. Besides that, you are free to use the application however you want."

The purpose of giving the testers an assignment was to make sure they understood what they should do to test the applications' main concept. Since it was not the system of the application that was supposed to be tested (how the application worked, the user interface and experience etc.), but rather the concept and mechanics, it was concluded that this would not affect the results in the wrong way. Rather, it would make sure the testing was more probable of producing the desired data.

Six days after the testers had received the first email, an additional email was sent out to remind the testers that the test period was soon over and that they should remember to test the application.

During the test-period, the activities of the testers were monitored in Firebase. This made it possible to follow-up testers who failed to do the assignment, i.e. adding friends and starting a cooperation. When this was the case, those it concerned were contacted with a reminder to test the application properly. Example of a reminder that was sent out: "I can see that you have not started a competition with a friend yet. In order to test the application properly, it is desirable that you do". In all cases, only a short period of time passed before they did. This made it possible to collect the intended data in the interviews. The main reason why some had not started a competition was that they waited for their friends to sign up for the application.

Step 3: Interviews

The interviews were conducted digitally using the video conferencing software Zoom [132] at the end of the test period. Zoom provides tools for recording a meeting, which was used with the consent of the interviewee. Only the audio of the recording was used after the interview for transcribing. After the transcription the recording was deleted. All interviews were done in Norwegian, since this was the mother tongue of all interviewees and the risk of losing important information due to "live translation" problems was undesired.

Twelve out of the thirteen testers were willing to be interviewed. The last tester did not want to give an interview due to unknown reasons. An alternative approach (receiving the questions by mail and providing the answers in writing) was suggested, but the tester rejected the offer.

More details regarding the interviews are provided in 5.2.2.

5.2 Data Collection

This section presents the collection of the data that was analyzed in order to evaluate the testing of the application. As previously mentioned, the data was collected through interviews.

To ensure the testers had used the application enough to provide valid answers to the questions in the interview, data regarding the usage of the app was collected from Firebase and App Store Connect. This data is presented in subsection 5.2.1.

5.2.1 Firestore and App Store Connect

Firestore and App Store Connect were to collect data regarding app usage. The developer can follow the installation process on App Store Connect, which is the service where the app is published to TestFlight. App Store Connect shows, among other things, when the testers installed the application and how many sessions each tester has. In this case, a session is when the app has been used for at least two seconds. It should not be confused with the session feature in the application.

Firestore Database made it possible to access all data stored for each user, which provided some insights into how the users used the application. Data stored included if the users had added friends, started co-operations, set a personal goal, started a competition and their workload and points.

The collected data from Firestore Database and App Store Connect regarded usage of the application. It was collected to get an overview of the amount of time the users had tested the application. The workload of each user, i.e. the amount of hours logged by the user in the application when using the session feature, was stored in the Firestore Database. This gave an approximation of how much each tester had used the application, since the main use of the app regarded logging hours with the timer. Firestore also stored the points each user had received. A user had to finish a session to receive the points if the timer feature was used. Therefore, the amount of points can provide indications of how the person used the application. If the users chose the stopwatch feature they had to hold for at least ten minutes to get points. Ten points were added each ten minutes. This data can be used to see if a user started a session but gave up after three minutes, or if the user managed to stay focused.

Based on the hours logged in Firestore, and the amount of sessions stored in App Store Connect, it was possible to ensure that the testers had actually tested the application when the interviews were conducted.

5.2.2 Interviews

The first two interviews were conducted with note-taking, but due to information being lost in the process, the rest of the interviews were recorded. Before recording the interviews, the testers signed a form with their permission.

Interviews were conducted the subsequent days after the completion of the test-period. As mentioned in subsection 1.4.2, the interviews were semi-structured. Semi-structured interviews were chosen because it gives the interviewer an opportunity to ask additional questions that arise during

the interview. An interview guide, available in Appendix B with predefined questions was used.

The primary goal of the interviews was to generate data that could be used to evaluate the application. This data consisted of feedback from the testers on their experience with the testing, as well as their thoughts regarding the concept and mechanisms of the application.

Each interview was divided into themes, with each theme having a separate goal describing what the intended outcome was. This way, it was easier to understand what type of information outcome to expect from the interviews. Table 5.1 presents the different themes and the goal of each theme.

The questions in the interview were designed based on the desire to understand:

- Were the testers motivated to work with school?
- Did the application help them manage time, and thereby reduce procrastination?
- Were the testers motivated by the competition?
- Were the testers motivated by the reward?
- Where the testers motivated by setting personal goals?

Table 5.1: Interview themes

Theme	Goal
Experience with performance measuring applications or devices	To discover whether the test subject had experience with similar performance-measuring applications or other devices/methods from before.
Procrastination and delaying school related work	To find out whether the test subject had experienced any troubles and consequences of procrastination from before
The application	To reveal whether the UI of the application was understandable and straightforward.
Use of the application	Understanding how the tester used the application and for what purpose.
Motivation	Finding out whether the tester found the application useful and motivating. Did it affect the way the tester studies?
Study habits (added after the two first interviews)	Get background information regarding the testers' study pattern and behavior which later can be related to the application.

In the first two interviews, the theme "study habits" was not yet included. After the completion of these interviews, it was realized that the interviews did not provide enough information about the test experience. The interviews also felt too structured, and it was desired to inspire the interviewees to talk more "freely". This is more likely to happen the more open the question is. To solve this issue, it was decided that the interview should be started with the question "What are your feelings regarding how the testing went?" in order to encourage the tester to start talking

freely about thoughts regarding the testing. Additionally, the theme "study habits" was included, as an attempt to get more information regarding the existing study habits of the tester. These two changes, in addition to the interviews now being recorded, led to an increased amount of data produced from the interviews.

The interview included both open and closed questions. The closed questions belonged in the category "Procrastination and delaying school related work", where a Likert-scale was sent to the participant in the video-software chat. The scale used was: "completely agree, strongly agree, agree, neither, disagree, strongly disagree, completely disagree". A statement was read, and the interviewees answered with how much they agreed.

Below are some examples of the predefined questions in the interview-guide:

- Can you describe what a normal week of studying is like to you?
- Do you have any previous experience using performance-measuring applications where you set a goal?
- Have you experienced any issues with procrastination school work?
- Were you motivated by the application?
- What did you think of the display showing the competition?
- Were you most motivated to win by the reward or just to beat the other person?

5.3 Data Analysis

When analyzing the data, it needs to be segmented into different categories. This can be done either deductively, inductively, or as a combination of the two [93]. Deductive approach is when you use a theory, either one that is found in literature or one that you have developed yourself. Inductive is when you have a complete open mind, and find categories based on what is observed in the data.

5.3.1 Qualitative Data Analysis

The data was analyzed qualitatively using a deductive approach. When using a deductive approach it is common to start with a hypothesis that will be attempted verified through the data collection. It is also common to have predetermined categories that the data will be segmented in. Since the categories were already determined, a deductive approach was used, illustrated in figure 5.1. The categories emerged from the prestudy in chapter 2; procrastination, motivation, time-management and goal-setting.

The transcribed interviews were reviewed based on the themes. Quotes and patterns were gathered and identified for each theme, with the main goal of finding support for the hypothesis and test it. To analyze the data the following steps were taken:

- Identify the desired findings within each theme

-
- Review an interview based on a theme
 - Find and gather relevant quotes which either supports or rejects the hypothesis
 - Analyze the quotes and identify emerging patterns

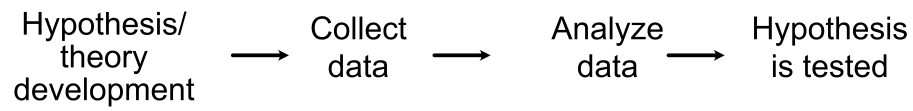


Figure 5.1: A deductive approach was used

Chapter 6

Results and Discussion

In this chapter, the data collection and the analysis of this data will be presented in order to attempt to support or reject the main hypothesis of this thesis as well as addressing the research questions. The hypothesis was that students are motivated to increase student activity and reduce procrastination if they participate in a challenge where they work towards a goal. In the following sections, the aim is to investigate how the testers experienced the effects the application had on their motivation, what features they found motivating, whether they believed the app changed/could change their study behavior and if a challenge against a friend was a good enough incentive to increase their student activity.

Section 6.1 presents numbers and graphs regarding the usage of the application. This is to prove that the users had sufficiently enough experience with the application to answer the questions in the interviews. Each subsequent section represents one of the predetermined themes. These sections contain quotes and discussions relevant to the theme of the section. The themes were: procrastination, motivation, goal-setting and time management. After reviewing each theme in relation to the evaluation of the application, the research questions will be discussed.

Since the data collection was qualitative, the findings are presented through quotes from the interviews. The quotes are translated from Norwegian to English. All the names related to the quotes are pseudonyms and cannot be connected to the participants' identities in any way. To maintain the correct focus, part of the material in a quote is eliminated if it is unrelated. This is indicated by "[...]". Some places help-words are added to a quote to clarify the context. The help-word looks like this: [Help-word]. Example:

"I used it [Hold] to force myself to work with school. [...] and then I start the timer to lock the phone."

6.1 App Usage

In this section, the data collected from App Store Connect and Firebase will be presented. It should be noted that this data will not be used to answer the research questions of the thesis, but to prove the extensiveness of the testing of the application.

Figure 6.1 shows the number of sessions each user had in the application, according to App Store Connect. A session is registered if the app has been used for at least two seconds.

Sessions: in total 716 for all 12 users, (SD=35.58, m=59.67, min=5, max=125)

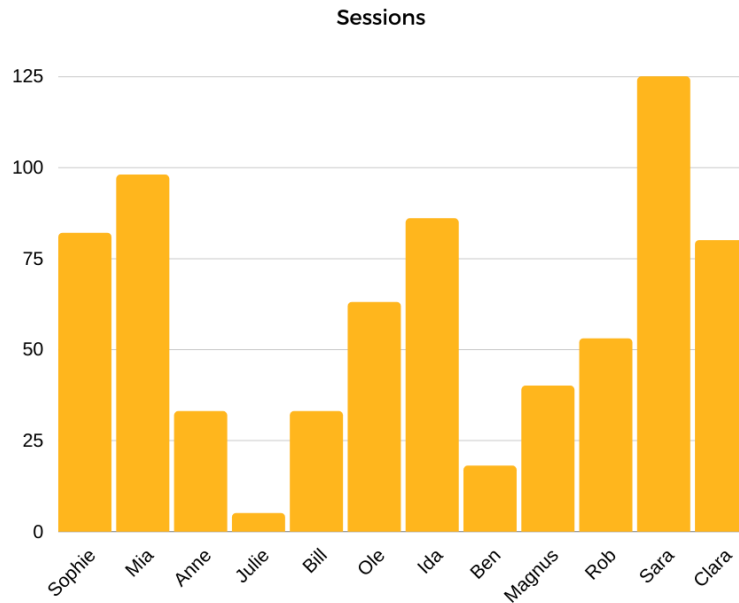


Figure 6.1: Amount of sessions each user had in the application

Figure 6.2 shows the amount of hours each tester in total used the session-feature (timer/stopwatch) in the application. This was logged as "workload" in the database. Since this was one of the main features of the application, it gives an indication of how much the application was used.

Hours logged: in total 167.17 for all 12 users, (SD=11.26, m=13.93, min=0.66, max=37.4)

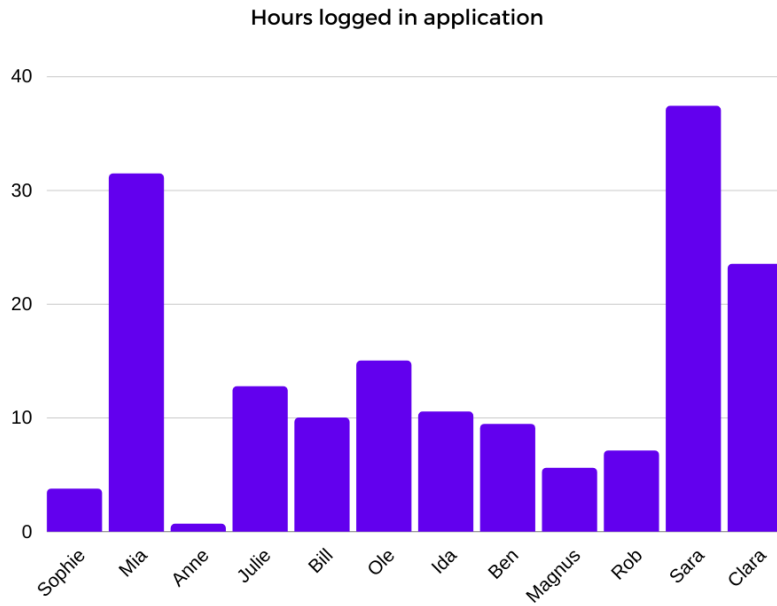


Figure 6.2: Amount of hours logged by each user

Figure 6.3 shows how many points each user received in total. Points were received if the user completed a timer-session, or if the user lasted for at least ten minutes in a stopwatch-session. Points received gives an indication of whether the user actually managed to stay focused when starting a session.

Points: in total 9250 for all 12 users, (SD=616.99, m=770.83, min=40, max=1990)

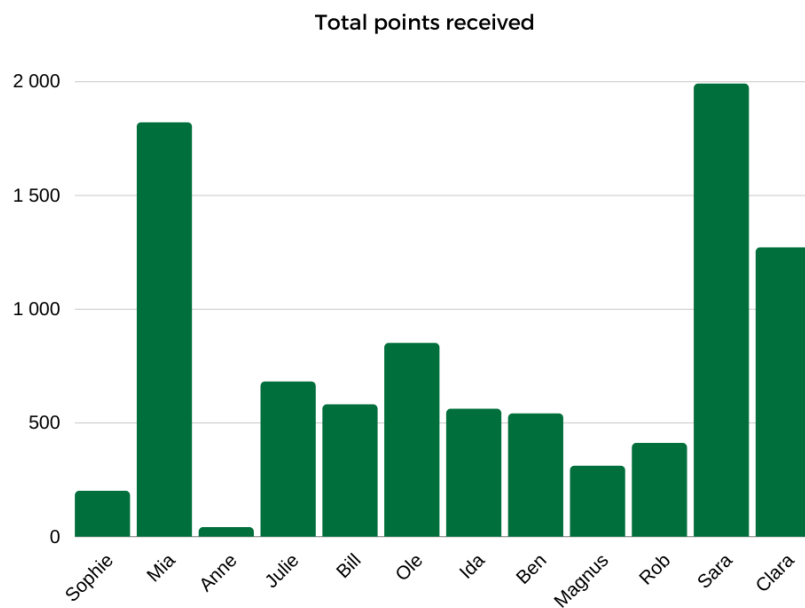


Figure 6.3: Amount of points each user had in the application

Figure 6.4 shows an example of a user document in the user collection in the database.

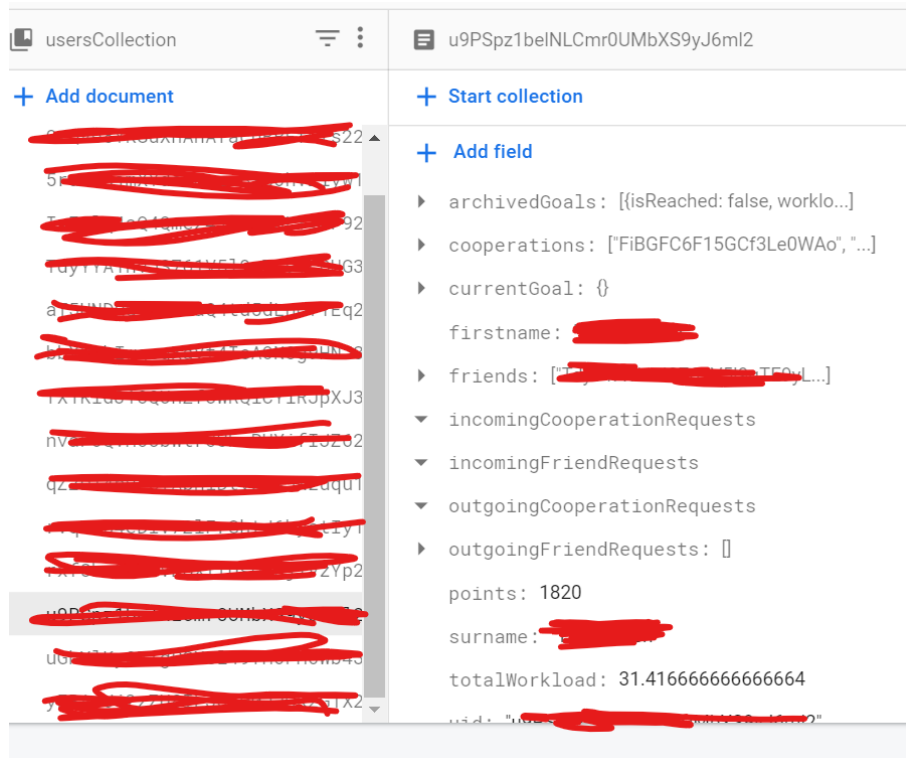


Figure 6.4: An example of a user document in Firestore Database

As the graphs show, more sessions does not necessarily mean more hours logged in the application. For example, Anne had 33 sessions, but she only logged 0.66 hours and received 40 points, while Julie had 5 sessions, but logged 12.75 hours and received 680 points. This can be explained by the fact that some users had fewer sessions, but used the application longer each time. If the user logged few hours, but many sessions, it can also mean that the user did other things when using the application, like checking who was in the lead in the competition.

Figure 6.4 shows an example of a user document in the database. As we can see, one of the fields in the document is called "cooperations". This field showed a list of ID's of the cooperations a user was involved in. From the database it was possible to confirm that all users had engaged in at least one cooperation, which was important to know in order to see if they had tested the main mechanic of the application (competition with a friend) when they were interviewed.

The graphs shows us that points received are consistent with hours logged, which means that the users did not tend to stop a session before it was over, but waited until it was done in order to complete a session. That being said, it should be noted that since the app did not manage to track whether or not the user exited the application and started doing something else, or if the person did something completely different while tracking hours, it cannot be said for sure that this is correct.

The graph in figure 6.2 shows us that the least logged hours was 0.66, but that the second to least was 3.75 hours. This means that besides one user only testing it for 0.66 hours (= 39.6 minutes), all users tested the application for at least three and a half hours. The average test period was 13.93 hours and the average amount of sessions was 59.66. There is no conclusion to what amount

of time an app should be tested in order to get valid results, which means it is difficult to conclude whether the application was tested enough. However, since the graphs shows that each user used the app for a decent amount of time and engaged in several sessions, and the database confirmed that all users had participated in a competition, the experience base each tester had with the app was considered good enough.

As the data collected from Firebase and App Store Connect is somewhat sparse and only twelve people tested the application, it only provides indications of how the application was used. Because of this, the data will not be used to conclude any further about the usage of the application. Rather, it will be used to conclude that the app was thoroughly tested which gives the users a good enough foundation to answer the questions in the interview. The data collection from the interviews is what will be used to answer the research questions.

6.2 Procrastination

The research problem identified at the beginning of this thesis was that students tend to procrastinate school related activities due to lack of motivation.

From the interviews, it was desired to find out whether the testers had any previous experience with procrastination, and whether the app had helped them or had the potential to help reduce procrastination

6.2.1 Previous experience with procrastination

Q1: As a student, have you experienced any problems with procrastination?

The answers ranged from "not really" to "yes absolutely". Some of the testers had struggled a lot with procrastination and felt like it really affected their performance. Some answered that they rarely procrastinated, but when they did it had negative consequences. There were also a few of the testers who had not experienced procrastination as an issue.

Clara was one of the students who made it clear that she did not indulge in postponing school work by saying *"No, I don't really procrastinate. I like to finish early"*, which was also confirmed by Mia who stated: *"No, not really. I usually get it together pretty quickly"*. Others could share that they had experienced it before, but not to the extent that it affected their work, like Julie who said: *"Hmm, no not really. I think that I, in a way, procrastinate to a certain degree, but never in a way that it actually affects anything. I always manage to meet the deadlines."*

Even though some of the testers did not mention any problems with procrastination, the majority had experienced it to some degree before. When Q1 was posed to Ida, she answered: *"Yes, I don't work very well under pressure, so those times it happened that I postponed until the last minute, I think it really affected the quality of the work."* Another interviewee that could agree procrastination had affected performance, and who also was worried about the health consequences it brought, was Rob. *"Yes, it kind of has.[...] I work better under pressure. One thing is to work under pressure on the last day, but it is pretty bad for your health when you work under pressure for three weeks straight. [...] Another consequence is that I work poorer in courses than what I planned, since [the work] is postponed so long that in the end there just is not enough time to get a satisfactory result."*

This substantiates what was found by both Kim et al. [59] and Beswick et al. [13] who found that procrastination directly affects performance. Prem et al. [98] reported that procrastination leads to stress, depression, discouragement and reduced sense of mastery, which could be confirmed by Sara who answered that: *"Yes absolutely, those times I do procrastinate, it is because I am demotivated since there is something that doesn't work. Then I am frustrated and postpone it even more and after a while I get in a really bad mood"*.

Smartphones and other technologies are viewed as common sources of distraction, and we saw that smartphones were positively related to academic procrastination [70] in section 2.1.1. We also saw a study that showed the prevalence of social media multitasking among learners [19] which is proven to significantly negatively predict academic performance [66]. Sophie's response to Q1 is illustrative of this correlation between smartphones and procrastination:

"Yes, absolutely. I know that before, in high school, when there weren't as many phones, social media and freedom, I worked much more efficiently and frequently in the 'zone'. Procrastination for me is sitting on the phone and doing things I know is more fun. I am stimulated just by opening an application, but I am not stimulated by writing a sentence. So it's like, the fact that I always have the freedom to be stimulated makes me procrastinate all the time, because I want the dopamine. So yes, it is a problem. I think I had learned a lot more if I did not procrastinate as much."

There were also several others who confirmed this issue throughout their interviews, both by directly stating that the phone distracted them (*"The phone is very distracting"*) and by explaining how different apps and features helped them stay off the phone, which made them work more (*"For me, the most important motivation was that it forced me not to use my phone or procrastinate"*).

Even though the answers varied, it emerged that most of the users had experienced and struggled with procrastination to some degree. This proves that the problem is indeed prevalent, even though research on the field in Norway is sparse. Since only qualitative data was collected, the findings cannot be used to conclude the extensiveness of the problem. However, the fact that the majority of the testers confirmed that it was an issue indicates that it is a common problem among Norwegian testers. The findings also show that the users expressed concerns about procrastination affecting their mental health and that smartphones are a distraction which contributes to procrastination. From the findings, it seemed like procrastination was undesirable for most of the users even though they had tendencies to practice it. There were not enough participants to conclude with anything, but based on the findings it can be assumed that this is an area that needs further research and innovative solutions.

RQ2 regarded the evaluation of a solution that aimed to reduce procrastination. This was also the focus of the main hypothesis. The perceived effects Motiwork had on procrastination was evaluated through the testers' responses regarding time management which is presented in section 6.3.

6.3 Time Management

As mentioned in subsection 2.1.4, studies have found a significant relationship between students' time management skills and their academic achievement [57, 11]. Wolters et al. [127] conducted a study where the results suggested that time management strategies are correlated with decreased procrastination and delay of work. This formed part of the basis of Motiwork's concept.

The main principle of the productivity apps (removing the phone as a distraction) reviewed in section 2.3 was included and further developed in Motiwork. One of the goals of Motiwork was to help students *manage time* in order to *reduce procrastination*. When evaluating the testing of the application, one of the goals was to find out whether the app had accomplished this.

To evaluate the effects the application had on the tester's time management skills, questions regarding their workload, learning outcomes and perceived experience of studying while using Motiwork were asked. This was to reveal whether they felt like their time spent studying had increased and if they believed that using Motiwork over a longer period of time could change their study behavior. The following questions were asked:

Q2: Did you work more, the same amount or less when you used this application than what you would have done in the same period without using the application?

Q3: Did using the application change your experience of working with school? Or do you think it would if you have used it over a longer period of time?

Q4: If you had used this application over a longer period of time, do you think you would experience increased learning outcomes?

To Q2, the vast majority answered that they to some degree believed that they had worked more. No one believed that they had worked less. Some believed they had spent the same amount of time but used it more efficiently. Time management refers to activities which help individuals use time efficiently, which means that it is not only about setting aside time to work with school, but also about using the allocated time to actually indulge in school related activities. If an individual is at the library to study, but uses the time to explore social media or is distracted by other people, their time management is still poor. Therefore, responses from the interviews which indicate that the tester did not spend *more* time on school, but who spent the time more *efficiently*, are also considered to be positively related to time management. Among the testers whose answers regarded this was Ida and Magnus. When Q2 was asked, Ida answered: *"I think I would have worked the same amount of hours [without the app], but I think I worked more efficiently the days I used it. And I kind of made sure that 'now I have to work 45 minutes, because the timer will pass'. I think I would have worked more efficiently, but probably the same amount of hours"*. This was also stated by Magnus, who said: *"Maybe not more time, but more efficient"*.

Efficient use of time was the focus of several answers during the interview. When Q4 was asked, Magnus answered: *"Yes, I think it would have been more motivating, when you first work it is more efficient. I can be sure that 'in five hours I have done everything I need to'"*. The fact that starting a study session provides a time estimate to relate to when working, motivated several of the testers to use the time more efficiently. Julie also believed that having a 'deadline' to a session would improve efficiency. This was her answer to Q4: *"Yes, it probably could have done that. I think it is advantageous to have sessions like those. If you try to imagine that 'since it is only 45 minutes, it will be an efficient session.' Like, imagining that those 45 minutes are a school session. Whether you get more done, I'm not sure, but maybe you improve your efficiency, since you plan those sessions"*. Julie and Magnus' comments demonstrate that Motiwork's study session feature had some of the desired effect. Starting a session encouraged them to study until it was completed, allowing them to make better use of their time. That being said, the application was only tested for a short period, so there was not enough time to say for certain if the app managed to change study behavior. Because of this, the testers were asked about their thoughts regarding

the potential of the application (Q3). Almost all testers agreed that they thought the app would have changed their experience of working with school related activities if they had used it over a longer period of time. When explaining how they thought the app would have affected their experience, some pointed out that they thought it would have been more fun ("*... in some ways I feel like it would have been a challenge, so it would be a bit more fun*"), while most highlighted that it would have helped them form a habit and get into a routine.

".. if I had used it over a longer period of time, it might have happened that I had improved my time management skills, since you are more aware of the time you spend" - Rob

"I think if I had used it over a longer period of time it would, since then I would have had the time to get into a routine. I think I used it too little to get into the routine" - Sophie

"I don't know, I have to relate to Hold. It [using Hold] does affect my experience since I am more focused, so I would say it has. I believe it would have if I had used it" - Anne

Anne was one of the testers who compared the timer-functionality with the one in the Hold app. While the testing of Motiwork only lasted one to two weeks, some of the testers had used Hold for a significant period of time earlier. This was relevant due to the similarity between the timer features. Motiwork's session feature was inspired by the timer in Hold, which adds points when you manage to stay away from the phone. Therefore, experience with Hold would also be applicable to understand the effects that the session-feature in Motiwork potentially can have on time management.

Anne, who was the tester that spent the least time testing Motiwork due to time constraints, had used Hold frequently earlier. She noted the similarity between the two applications, and said that Hold had motivated her a lot when it came to studying. She stated that: "*On a daily basis when I use for example Hold, and I have set a goal, then I actually want to earn those points and not use the phone, but work with school*". Further, she also said that: "*I used it [Hold] to force myself to work with school. It worked really well, [...] you start the timer and then lock the phone, and you can't exit the app without ruining the time spent. That helps a lot*". This shows that providing an extra incentive (like points) which is lost if you exit the session, can be motivating. Sophie was another tester who had positive experience with using Hold to manage time: "*.. I used Hold when I read for courses or exams before. [...] it was easier to have a structure with the Hold app when I was dependent on being in the zone, because it was very specific like '45 minutes and then your are done'. [...] its mostly that it is a specific way to stay away from social media for 40 minutes*". Sara stated that: "*[I used] Hold to put away the phone and avoid using it.[...] It helped move the focus away from the phone*". Ben mentioned how both Hold and Motiwork have helped him increase study activities: "*I deal with it [Motiwork] the same way I deal with Hold, which makes me stop doing everything else and start doing what I intend to when I start the timer. So I would say it has helped me work more, it helps me "get a grip"*". Because the characteristics that were mentioned to motivate people in Hold also are present in Motiwork, these responses suggest that the session feature in Motiwork is motivating. It should be noted that a few users tried Hold without being motivated, or were motivated at first but stopped using it after a while. The users this regarded either stated that the rewards were insufficiently motivating or did not provide any explanations. This confirms what was found in the review of the app in subsection 2.3.2, where unsatisfactory rewards were highlighted as the main issue with the app.

One tester said that she was a bit demotivated by the fact that she often forgot to start a study

session when she was reading. Other testers also mentioned that they often forgot it, which made them use the application less than they intended. A possible solution to this problem is to add notifications to the app which can pop up regularly. This way, the users can be reminded to start a session when they are studying. Additionally, it might work as a motivation to study if they get the notification when they are doing something else.

As mentioned in subsection 6.2.1, it was pointed out by some of the interviewees that the application had helped them spend less time using their phone to procrastinate. When Clara was asked how she felt the testing had gone, the first thing she mentioned was: *"It was fun! I have used the phone much less now than before"*. Later, when Clara was asked Q3 she answered *"It depends. [...] it might result in being more efficient and getting more done in a shorter period of time. That you don't take up the phone all time"*. Further, her response to Q4 was *"Yes, maybe. The phone is very distracting. It would probably have become a habit not to use it while studying"*.

As mentioned in section 6.2, using social media is a common activity related to procrastination. Since one of the main features of the app was to start a study session (and thereby removing the phone), the effects the testers experienced on phone usage can tell us something about the effect the app had on time management. From the interviews, we have seen that several of the testers were positive to the session feature. Both when they used Motiwork and when they used Hold, they were motivated to finish the study session before taking a break. They further said that this helped them stay focused and avoid being distracted by the phone, since they did not want to "break" the session. These findings confirm what Duckworth et al. [33] found about successfully increasing students' performance by using strategies such as blocking social media and muting the phone. This implies that a feature like this, in which students must deliberately put their phones aside rather than depending on willpower, can improve students' time management skills.

6.3.1 Increased Learning Outcomes

As mentioned, the testers also got a question regarding learning outcomes (Q4). This question was meant to reveal what thoughts the testers had regarding the effects Motiwork had on their study habits. The majority of the students believed that they would experience increased learning outcomes if they used the application over a longer period of time. An interesting trend among the answers to Q4, was that it came clear that several of the testers associated enhanced time-on-task with increased learning outcomes. That being said, the responses also indicated that increasing time-on-task only influences learning outcomes if it involves spending the time efficiently, i.e. assigning more time to a task, but not using the time for studying, was not associated with increased learning outcomes.

One of the responses that was illustrative of this was from Rob. To Q4 he answered: *"Maybe. [...] if you manage your time better, you might increase your learning outcomes. But at the same time, my main objection is that I don't necessarily think that more time equals more learning. Rather, I think quite the opposite"*. This shows a hesitation towards encouraging students to spend more time on studies. Previously in his interview, Rob had stated that he felt like setting goals in the form of tasks might be a better way to motivate students. Another response that shared some of the same skepticism was from Bill: *"That is hard to say. I will probably work more if I use the application, but I don't know if that necessarily means that I will have an increased learning outcome, or if I am just going to finish faster. I would probably just work until I was finished"*. Bill's response surfaces

the same element of hesitation which should be considered when understanding Motiwork's effects on learning outcomes. If the time allotted for studying is not well managed, more time spent studying does not necessarily imply more work done.

To Q4, Sophie answered that *"Yes, implicitly that would happen since I would have worked more efficiently. But the question is whether I would have worked fewer hours more efficiently, or fewer hours less efficient.[...] In a way, it might increase the learning outcomes since I would have been more focused when I worked. Maybe I would just have ended up working less, but more efficient"*. Another student who agreed that she believed that the learning outcomes would increase if the efficiency improved was Ida: *"Yes, actually I do think so, if it would mean that I had worked more efficiently over a longer period of time"*. From these responses, we can see that some of the testers believed that there was potential for improvement when it comes to how they utilized their time. They admitted that using an application like Motiwork could result in increased learning outcomes, since it could help them manage their time.

6.3.2 Effects on Procrastination

The testers' feedback on Motiwork's impact on learning outcomes, experience of working with school and time spent on studying, provides indications that can be interpreted in relation to procrastination. The above findings tell us that most of the testers' responses regarding effects on time management were positive. Participants who believed the app would help them use their time more efficiently also claimed that if they used Motiwork for a longer period of time, they would have better learning outcomes.

The majority of the participants agreed that the app had helped them spend time more efficiently, and they believed that it could also do so in the long run. It emerged that a study session feature was regarded as helpful in removing the phone as a source of distraction, and that it is motivating to have a time estimate for a study session. Starting a session also encouraged some of the users to start doing their intended tasks and stop wasting time.

There is not enough data to draw conclusions about the application's potential effects on a general audience. That being said, the findings show that the app was perceived as helpful by the users when it came to increasing student activity and efficiency. This, together with the fact that testers said it helped them 'get a grip and get started on their tasks,' are impacts that could be linked to reduced procrastination. The ability to resist distractions and temptations were mentioned as skills indicating self-efficacy and self-control in section 2.2. People with high self-efficacy and self-control have lower tendencies to procrastinate [61]. While there was not enough evidence to state for sure that the app helps reduce procrastination, the results suggest that it did.

6.4 Goal-Setting

In section 6.3 we saw that several of the users said they believed the app helped them spend their time more efficiently. Among other things, by putting their phone away while they studied which helped them stay more focused, and by wanting to keep studying until a session was completed. In this section, we will see how Motiwork motivated the users to start studying, and the effects it had on the users.

To motivate the users, goal-setting was implemented in the app through different features. Goal-setting was chosen based on the review in subsection 2.1.5, which showed that it is a well-known motivational theory. It was gamified to make it more fun and appealing through challenge and competition. The users could set a personal goal and work towards it, or set a goal with a friend and compete to reach it first. In the interviews, it was desired to reveal whether the users perceived the goal-setting features as motivating.

6.4.1 Previous Habits in Goal-Setting

First, the testers were asked about their current habits regarding goal-setting. This was to see if they had ever set goals before, and if so, what kind of goals they had set. The answers here were very deviating. Some of them liked to set goals and sub goals in order to structure their week and tasks (*"I am much more motivated when I have goals to relate to"*), some used it once in a while and some did not set goals at all. There was not found any relation between those who did not tend to set goals, and those who did not set a personal goal in the application.

When asked about habits regarding goal-setting, one of the interviewees said that she had used Hold (the app) to set workload goals, and that she found it very motivating: *"I have used that app [Hold] to set goals, [...] I actually want to earn the points and not use my phone, but rather work with school. [...] the goal can be to work for one hour straight maybe, and then take a break, and then work another hour and so on. Like the Pomodoro concept, with work and breaks. I find that very motivating"*. As we saw in section 6.3 (Time Management), she was not the only person that had used productivity apps previously to study. There, it was revealed that several of the interviewees liked to set time-based goals (e.g. "work 40 minutes before taking a break") to increase productivity. A time-based goal gives an individual a time estimate to relate to, and it was noted by some that they were motivated to start studying when they knew "in 40 minutes I will take a break". When asked about using other apps in relation to measuring performance and setting goals, quite a few mentioned that they liked fitness apps that tracked their steps, and that they were motivated to walk more by the "10 000 steps a day" goal. Some had also used health apps to reach goals regarding nutrition, and some had used Strava to reach fitness goals. Other than that, apps that were used to set and track goals were not mentioned. This shows that some of the users like to use apps when setting goals.

Another theme that emerged when asked about their habits related to goal-setting was sub-goals. A handful mentioned sub-goals as a way to structure their 'todos' (*"I use to make a plan with a detailed list that I can split into smaller subgoals"*), and this was also brought up by Rob as a feature that he missed in Motiwork: *"Maybe subgoals. [...] I think that it is not necessarily true that more time spent equals better work"*. Rob had previously mentioned that he didn't think that "measuring work in hours" was ideal, but that one should rather measure work in completed tasks. He further proposed that an app like this could have tasks to check off while working, so that the focus was not only on time spent.

6.4.2 Personal Goals

One of the mechanics that was evaluated through the testing of the application was setting personal goals. Setting personal goals was thought to motivate testers to enhance their student engagement

since goal-setting is one of the most well-established motivational theories [74]. However, the interviews quickly revealed that setting a personal workload goal did not appear particularly motivating to any of the testers. Rather, they found working toward a goal when it was based on a competition to be more motivating. This was either stated directly by the interviewee, or the interviewee made it evident by emphasizing the competition feature over the personal goal feature, when asked about what motivated them. As an example, when asked about what features she found motivating, Sophie answered competitions. She further stated that: *"Working against myself was not as motivating, since I knew the reward had to come from my own pocket"*. Here, she referred to the reward mechanism of the personal goal-setting, which was based on a "treat yourself x if you reach the goal" principle. When Bill was asked what features he found motivating he answered: *"Competition. I think it is more fun to compete against others than myself. It was more motivating to study when I had a competition against someone else, then when it was only me"*. One of the testers also said that: *"I forgot that I had a personal goal, because I was very immersed in the community and competition. I used the community tab more than the home tab. The goal functionality got a little lost due to that"*. These findings indicate that the personal goal-setting feature was not particularly successful in motivating the users to increase their student activity. This was a surprising finding, since it emerged from the pre-study that goal-setting is a well-known motivational theory which is positively related to academic performance. For example, the results from the study by Bryan et al. [15] suggested that specific goals can be used to motivate subjects with low motivation. However, it should be noted that the study had a set of predefined mathematical tasks that two groups should solve, where the experimental group received specific goals. In Motiwork, there was no specific predefined tasks, and it was optional to set a personal goal.

Some users tested out the personal goal feature on their own initiative (seven out of twelve). Two of the users didn't know it was an option and three users didn't provide a reason why they did not test it. The testers might have been affected by the clear focus on the competition feature, both in the app and in the assignment. An interesting thing to consider is whether the users had been more motivated by setting personal goals in Motiwork if there was more focus on that feature. A possibility is that setting goals in itself is not motivating enough for the students if the goal is time-based. If the goal is more specific ("finish assignment 2") or more intrinsically related ("improve my skill in ..") it might have had a different effect. Another aspect to consider was the reward. Some of the users that had used Hold, mentioned that they were motivated by the external rewards (discounts, a free coffee etc). If they reached their personal goals in Motiwork, they were accountable for their own rewards. If the reward in Motiwork had been provided by an external source (e.g movie tickets from the local cinema), the feature might have been more motivating.

6.4.3 Goal-setting And Gamification

The main hypothesis of this thesis was "students are motivated to increase student activity and reduce procrastination if they participate in a challenge where they work towards a goal". We saw that gamification is used for the same purpose as goal-setting theory, and that it therefore is natural to see the one in the context of the other. Especially if the intention is to motivate someone to work towards a goal. As presented in subsection 2.1.3, Tauer et al. [121] conducted a study where the findings suggested that cooperation and competition have positive aspects that can facilitate high levels of intrinsic motivation and performance. Yee [129] identified competition as one of the key elements in games that motivates people to play and Malone [82] stated that it

is motivating because it provides a challenge at an appropriate difficulty level which can serve to make the goal meaningful.

The personal goal-setting feature used gamification mechanics like progress bars, rewards and challenges. In table 2.1, we saw what type of psychological need each game mechanic fulfilled, which related them to intrinsic motivation. Rewards, progress bars and challenge were all associated with competence (mastery and feeling of accomplishment) and autonomy (feeling in charge of one's behavior). None of the mechanics from the personal goal-setting feature applied to relatedness (feeling connected to peers). An interesting finding was that when relatedness was added to the goal through competition and challenge against others, the perceived effects of the feature changed drastically. The goals were still the same (e.g. "work 25 hours next week"), but leaderboard and competition were added as game mechanics, which fulfilled the last of the three psychological needs necessary to achieve SDT. In accordance with what Ryan et al. [107] stated about self-determination, fulfilling the three psychological needs implies that the competition feature enabled the users to become self-determined. Hsu et al. [53] found that self-determination enhanced the motivation to self-regulate, which further increased achievement and perceived knowledge transfer. The data generation of this study did not provide information that confirms anything about changes in performance and knowledge, but the participants responses regarding learning outcome implies that usage of the application over a longer period of time can lead to increased learning outcomes. This, in turn, can affect academic performance. However, this is only speculation without proper evidence, which means it can not be established and it should be further researched.

In section 6.5, findings and discussions related to competition and motivation will be further elaborated.

6.5 Motivation

The most important part when evaluating the application was to find out whether the testers were motivated by the features that were implemented. RQ2 addressed features that can be implemented in an application to provide a good foundation for a motivational application. As already mentioned, gamification is a concept which is frequently used for this purpose, and it is increasingly popular to use it in educational settings in order to create engagement. Therefore, an app was developed with various game mechanics that targeted student behavior.

6.5.1 What Motivates Students

In the first part of the interviews, the testers got a question regarding motivation related to school. The goal was to reveal what motivates the students to engage in school related activities. Among other things, it was of particular interest to find out whether they were more motivated by good grades and results (extrinsic motivation) or by learning and interest (intrinsic motivation). In the prestudy we saw that Taylor et al. [122] and Lei [69] found that intrinsically motivated students perform better.

To get more knowledge regarding what the testers were motivated by when studying, the following question was asked:

Q6: What motivates you to work with school?

To Q6, the majority of the interviewees answered performance in one way or another. It was consistently mentioned, either as the main motivation or as a part of their motivation. Results, good grades and performing well were the main incentives brought up. The responses to Q6 showed that the motivation of the students was a continuum from intrinsic to extrinsic. On one side, there were the students who only mentioned external motivation. This was illustrated by Clara's answer (*"It's to get good results and not wanting to perform bad, really"*), Anne's answer (*"Right now, performing well on my master thesis"*) and Bill's answer (*"I am motivated by the thought of performing well. [...] I want a good grade to show for"*) to Q6. This shows that many students study due to extrinsically motivating objectives, even though it is proven that intrinsically motivated students perform better.

At the center of the spectrum, there were responses such as this one from Sara: *"Good results, naturally. Especially when talking about a master thesis, then you are dependent on having good grades in order to be competitive regarding jobs. [...] Also, it's of course very motivating to work with something you find interesting, that is key"*. This quote illuminates how some students both wanted good grades, and found that their personal interest in the subject was motivating.

Lastly, there were the students who only mentioned intrinsic incentives. Some of them were motivated by learning, some by finding the subject interesting and some by the feeling of mastery, all of which are connected to intrinsic motivation. Sophie's response is illustrative of this type of answer: *"What motivates me is that I want to learn something. It's very rarely grades that motivates me"*. Another representative response of this type, which also included the feeling of mastery, was from Rob: *"To do well, to get better, to learn. The feeling of mastery when you get things done. That is perhaps the most important thing"*. This was also reflected in the answer from Ben: *"[...] completing something and making progress. I think it is interesting. Enthusiasm regarding the subject you are working on, but also feeling of mastery"*. This shows that even though grades are what motivates some students, others are motivated by a personal interest to improve their skills.

In subsection 2.1.2, the effect that autonomy has on motivation was brought up. It was stated that: *"autonomy is about a persons' own ability to make their own choices. The feeling of autonomy is enhanced if the individual is provided with a choice, but when an activity is mandatory the feeling decreases"*. This was confirmed by Julie, who said that: *"[...] I notice that even though I chose [the field of study] myself and think it is interesting, school tends to feel very "homework-like". It's not always super fun"*. This shows that even though a student is intrinsically motivated to learn, this motivation can be undermined by the fact that schools generally tend to remove autonomy by making activities mandatory. This might also be why so many of the users answered results and grades as motivational factors, since their intrinsic motivation is undermined by their school activities mainly being mandatory.

In general, the students were motivated by results, grades, learning, feeling of mastery and performance. Some of them shared both intrinsic and extrinsic motivation, while some were mainly motivated by one over the other. This shows that it is important to keep in mind that there is no correct answer to what motivates students, but a wide range. When developing solutions, it is therefore important to keep this in mind in order to carefully design a fitting solution that manages to motivate.

6.5.2 The Motivational Effect of the Features

To answer RQ2 *"what features can provide a good foundation for a motivational application?"*, different game mechanics were implemented in the application and evaluated through testing and interviews. Based on the hypothesis (*"students are motivated to increase student activity and reduce procrastination if they participate in a challenge where they work towards a goal"*) which emerged from the prestudy, competition ended up being the main game mechanic of interest which was implemented. This was also the main focus in the information letter the testers received and in the interviews.

To reveal what features the users perceived as motivating, the following question was asked:

Q7: What features (if any) were motivating?

Q7 was an open question which did not specifically target the competition feature. This was because it was desirable to see if the testers would bring up competition as an answer by themselves.

All testers except one brought up competition as the most motivating feature of the application. It was thought of as the most motivating feature for a variety of reasons, most of which included the social aspect. This was interesting since it enhanced what was mentioned in subsection 6.4.3 about the testers not perceiving the goal feature motivating before the social aspect was implemented. Consider Bill's answer to Q7: *"Challenges. I think it is more fun to compete against others than myself. It was more motivating to study when I had a competition against someone else, than when I competed against myself"*. Bill was one of several who used the word "fun" when talking about Motiwork. It was mostly used when discussing the competition feature, which corresponds with what Vorder et al. [126] said about competition being regarded as an important factor for entertainment and fun. According to Deci et al. [29], motivation arises when a person is doing something because she or he thinks it is fun, interesting or enjoyable. Another response which pointed out competition as the most motivating feature came from Sophie: *"Competing against others motivated me the most [...]. I sort of experienced that it was motivating to know that it was a competition. [...] I made sure I clocked in the hour at once, because I knew it would feel good to rub it in his face. So that was motivating"*. Sophie's response to Q7 shows that she was directly motivated to start studying because she wanted to win the competition. Mia also stated that she got competitive: *"[...] especially the challenges, the competitiveness kicked in there"*. The fact that the testers agreed that they were motivated by the competition, and that it brought out the "competitiveness" in them, confirms what was stated about competitive behavior being generated by individuals' drive to minimize difference between their own and other's level of performance [41]. It should be noted, however, that the desire to win the competition might overshadow the desire to complete their school related tasks. It should be considered whether too much focus on the competition can affect the learning outcomes. Additionally, it is not possible to control whether the users are cheating (e.g. watching television while starting a session on the phone), which should also be considered when evaluating features like this.

The ability to customize the rewards was also pointed out as a motivational feature, among others by Sara: *"I really liked that you could customize personal challenges when working with someone. That you don't necessarily have to spend money on something. It could be anything. So when we tested the application I absolutely found that a motivating factor to beat the other person"*. Ida also acknowledged that she liked this feature when she was asked to compare Motiwork with Hold: *"I think the rewards were better in [Motiwork], that you can choose yourself what you want to*

give". However, few others mentioned the rewards in Motiwork as a motivating feature. Some also mentioned that they liked the rewards in Hold better. They further justified this with the fact that they were more tangible and they knew they could cash the rewards out, opposite to Motiwork where they had to rely on their opponent to give it to them. This was a surprising finding, since a theory was that the thought of having to cook dinner (or similar) to an opponent if they lost the competition, would be very motivating. This was mainly based on the insights after the review of motivational applications in section 2.3. Firstly, from the reviews of StepBet: "[...] *the possibility of losing \$40 gets me off the couch more than anything*" and "[...] *StepBet is a really fun concept and seems to have twofold method that make it work: 1.) Avoidance of loss: You worry if you lose, you will lose the ten or so bucks you invested into the game. 2.) Win: If you win, you gain money*". These reviews were a representative selection, and from these it appeared as if the concept was encouraging to the users. Another reason why it was imagined to be motivating was based on the insights from the interviews in the design process (subsection 3.2.2), and the review of Hold. Both of which gave the impression that material rewards were very motivating to the users. The review also revealed that the users wanted even better rewards, ("*I want more free offers and not small discounts*"), which was also considered when designing the reward system where the users could decide the rewards themselves.

A possible reason why some people did not find the rewards motivating was identified when one of the testers answered that he did not really believe that his opponent would give him the decided reward if he won. "*It might be because I didn't imagine that the winner was going to get the reward, no matter who won. [...] I think if we had agreed that the person who loses is going to give the winner the reward, no matter what, it would have been more motivating to participate in the competition*". Additionally, it seemed like some, although very few, of the testers did not take the competition that seriously, which made them less motivated to win. This was illustrated by Anne's response when she was asked if they had decided on a reward for the winner: "*Yes, we did [agree on a reward], but it was very silly. I think it would have been better if we chose a real prize. We called ourselves 'Astrologigutta', and the reward was to get our own star sign. I believe that if we had used it for real, and studied and agreed on a beer as a reward, it would have been different. I think that would have been really good*". Even though very few specifically answered that they were not motivated by the reward or did not take the competition seriously, it should be taken into consideration. A possible solution to what was said about the rewards could be to do something similar to StepBet, where the users deposit the reward in advance. Then, the users would no longer have to be concerned about the loser not giving the reward to the winner.

Something else that was brought up besides competition as a motivating feature was the study session. To Q7, Sophie answered: "*Timer was [the feature] I used the most [...], additionally to creating challenges*". Another similar response was from Ida: "*I liked the timer, because I studied until it was finished even when I wanted a break*". This illustrates that the timer had the desired effect on some students; giving the students an incentive to keep studying when they were demotivated. The fact that Ida responded that she kept studying because she wanted to finish the session, combined with what we have already discussed regarding users who liked this feature in Hold, shows that this feature has the potential to motivate students to increase study activities. Ida continued by saying: "*I also found it very motivating when I had the challenges. I think that was something that I liked very much, especially compared to Hold; that you actually could have challenges with others. It made me like 'okay, I have to win'. I am a very competitive person [...] the competitiveness kicked in! When I saw the other person was in the lead, I was like 'now I have*

to stay for four more hours’’. The last part of Ida’s answer shows that the app inspired some of the users to study more.

The study session in combination with personal goals was indirectly brought up as something that was motivating, since a few of the users mentioned that they were motivated by seeing how much they worked. The feature that showed the total workload was the progress bar for the personal goal. Rob answered *”Mostly that it was easy to get an overview of the total workload”* to Q7, which illustrates this. This confirms what was found in a study by O’Donovan in [92], where progress bars were reported as one of the most motivating gamification elements.

Only one response to Q7 did not include anything about the competition. This was the response from Julie, who said: *”Mostly the points. I tried to finish the sessions in order to get the points [...]. I tried to keep it on and get as many points as I managed in a day or a week”*. However, when Julie was later asked if she found the competition display motivating, she answered: *”Yes, it was pretty nice. Once you have a competition like that and you can see who is in the lead, it is pretty motivating in itself. I think it worked pretty well, it sort of helped that it was like that. [...] I think I was more motivated by competing against another person, than to collect points just to collect points. So yes, it had an effect”*. Since the respondent admitted that competition was more motivating, it emerges that all testers found the competition to be the feature who affected their motivation the most. Julie was the only person mentioning the points as something she was motivated by, and since it was not one of the main features that the study focused on, it will not be discussed further.

Some of the answers highlighted the design of the competition as something that motivated them. An example is Anne’s answer: *”It was the collaboration. I had a collaboration with a friend and he worked a lot. It affected me when the red color with the warning was displayed, telling me the other person was in the lead. I was like ‘oh no, he is in the lead and I have not done anything”*. The color Anne referred to was the color of the competition display, which was changed according to who was in the lead. As mentioned in subsection 3.3, the competition display was a modified leaderboard, showing the score (measured in time) and ranking in the competition. Later on in the interviews, the testers were specifically asked about their perception of the leaderboard.

Q8: Was the competition display motivating?

The feature was referred to as ‘competition display’ instead of leaderboard in the interviews. This was because in the community page, all the users’ friends were displayed in an (unsorted) list with their acquired points, which could easily be confused with a leaderboard. Additionally, the competition display did not look like ‘a typical leaderboard’ with a list of names and points. However, the concept and the intended effects were the same as in a leaderboard, so from now on, it will be referred to as the ‘leaderboard’.

As we already saw from Anne’s response to Q7, the design of the leaderboard contributed to motivate the testers. A pattern that emerged from the responses to Q8 was that several of the users mentioned *seeing who was in the lead* as something that contributed to motivate them. This is consistent with what Malhotra et al. [81] found about the powerful effects triggering the desire to win can have on behavior. Consider Clara’s response: *”It was nice. It was motivating since you want to be in the lead”* and Mia’s response: *”Yes, I really liked that it was red when you were losing. Then you knew that ‘now I have to get a grip and start working’. I think it was very good, it worked for me at least”*. It was clear from their answers that the leaderboard motivated them.

Rob also agreed to this: *"Yes, it was motivating. It might be because I was in the lead. But if I was not in the lead, that might have been motivating as well. It sort of doesn't matter whether you are in the lead or not, you are motivated by losing as well"*. These answers are consistent with what Looyestyn et al. [75] found regarding increased engagement as an effect of leaderboards. It also confirms what we saw in subsection 2.1.3 regarding social comparison being an important source of competitive behavior.

Not all users were equally convinced about the motivational effects of the leaderboard. Bill's response is illustrative of this: *"I am not sure if it is motivating, it depends a little. [...] when I was in the lead it was not as motivating. When he was in the lead it was motivating"*. However, as we saw earlier, Bill answered *"it was more motivating to study when I had a competition against someone else"* when asked what features he found motivating. This is consistent with what was said in subsection 2.1.3, where it was mentioned that competition might not work as a motivational factor for all participants [119], but that it can be a very effective gamification element to enhance engagement and enjoyment regardless [114].

6.5.3 Intrinsic and Extrinsic Motivation in the App

From the prestudy, the impression was that both intrinsic motivation and extrinsic rewards are important factors in motivation and performance. The prestudy emphasized the importance of intrinsic motivation. Among other things, we saw that Taylor et al. [122] and Lei [69] found that intrinsically motivated students perform better. On the other side, the review of existing applications revealed how much extrinsic rewards, like money, can motivate individuals. For example, one of the main complaints towards Hold was that the users wanted the app to improve the rewards and have better discounts. Based on this, it was desired to design a reward for the winner of the competition that could extrinsically motivate the users to work. The final design was based on StepBet's reward system, where the users put their own money in a pot that is divided among the winners.

Initially, a theory was that the users would be motivated by the fact that they could win a reward from the opponent, or by the fact that they had to provide the reward to the other person if they lost. However, as mentioned above, it was quickly noticed that rewards were not of particular interest when asked what features worked as a motivation. To get more insight regarding this, the following question was posed:

Q9: In the challenge, were you most motivated by the fact that you could win a reward or just that you wanted to win?

All testers who got the question agreed that they were more motivated by actually winning than the reward. Some of the testers found that the reward was a nice bonus, but said that it was not their main motivation for starting a session. Representative responses of this type came from Sara: *"Absolutely by beating the other person. That I could have a free coffee was just an added bonus"* and Mia *"Only by beating the other person"*. Most of the answers were similar to this and it came clear that the testers did not really care about the reward.

Something worth noting, was that when the users who had used the Hold application were asked why they used it, some answers revolved around the extrinsic rewards.

"[I used] Hold for the reward, you receive points that you can use on scratch cards etc" - Bill

"[when using] Hold, where you compete against yourself and you have this leaderboard where you can see your old Facebook-friends on the top keeping their productivity up. Then it is a little carrot that you can have reduced prices on the kiosk" - Ben

It was an interesting finding that rewards were not pointed out as something that was particularly motivating in Motiwork, but was what most testers (who had used Hold) found motivating about Hold. This was examined further when asking the last question in the interviews:

Q10: What do you think of Motiwork compared to Hold?

Q10 was only asked to the testers who had said that they had used Hold earlier. To this question, several of the respondents highlighted the competition feature of Motiwork as something that made Motiwork attractive. Some of the answers who were illustrative of this was from Sophie and Sara:

"I think they cover different needs, because with the Hold app it is easier to motivate myself to work alone since the reward is external. But with this app it was more motivating to work together, since you have the element of competition. In Hold, you can 'hold' with others to get more points, but it's kind of still just you. This [app] was more competition and more playful, which differs it from Hold" - Sophie

"I think the concept of [Motiwork] is more interactive and exciting, because you can personalize it more by starting cooperations and creating personal challenges. In Hold you can hold together to achieve more points, but the gimmick is very repetitive with the discounts and getting a coffee from Narvesen" - Sara

This enhances what was said earlier about the competition feature being the feature that was perceived as the most motivating one by the users. It also suggest that the implementation of the feature was successful in encouraging the users.

It should be noted that in April 2022, Hold released a new feature called "Challenge a friend to a 7-day competition". This feature allows the users to compete in the same way Motiwork does. Since this feature was released after the development and testing of Motiwork, it will not be discussed any further, and was not considered in this project. However, the fact that a commercial application has released this feature can be argued to confirm the relevance of the solution.

6.5.4 The Effects the App Had on Motivation

Even though many factors and findings are relevant when trying to understand whether Motiwork actually motivated the users, one question wanted to address directly whether the users actually perceived the app as motivating.

Q11: was the app motivating?

To this question, everyone's answers were positive. To some degree each user agreed that the app had motivated them to study. Ida's response is representative of this: *"Yes, I feel like I studied pretty well those days we actively used it. So actually, I think it worked pretty well"*. Another response that is similar to this was Ben's: *"Yes, I found it amusing to create challenges with friends and so on. I was motivated to that degree. It was motivating to watch my progress on the community page, it was cool to look at. [...] if I enter the app and it says that I am losing, I am motivated, so the motivation is mostly in that part"*. As these responses illustrate, the

users perceived the app as motivating. Further elaboration on the discussion regarding the apps motivational effects is provided in subsection 6.6, where RQ2 is assessed.

6.6 Research Questions

The goal of this thesis was to develop an application to explore solutions for reducing procrastination and increasing motivation. Based on this goal, three different research questions were posed. In this section, these questions will be discussed based on the insights and findings.

RQ1: How are motivational applications used in education to increase student activity?

The first research question assessed the prevalence of applications that aims to motivate students to study in order to increase their student activity. To map these, a prestudy was conducted in chapter 2 that both researched the literature on the subject and reviewed motivational applications.

Procrastination is a well-known problem among college students and several studies proves that it has negative effects on academic performance and well-being. Nevertheless, there are few solutions that addressed this problem. Some applications which addressed part of the problem (procrastination), but which did not specifically target increased student motivation and activity, were found and reviewed in section 2.3. Their effects on motivation were indicated by reviews in the App store, but studies which provided empirical evidence were not found. In the literature, there seems to be no studies so far on the effects motivational apps had on students regarding procrastination and motivation. One study was found on the effects of gamification on procrastination (and whose results indicated success). However, this was based on an experiment using a learning management system in a course module, and did not address self-regulated learning. Some papers discussing the development of applications that aimed to reduce procrastination were found, but neither of them tested nor researched the effects of such applications. Other than that, the overall research on the topic was sparse, and additional studies were not discovered.

Studies which researched the effects of gamification on student engagement and participation were the most relevant found on the topic. Even though the results were mixed, several of the studies found positive effects. The empirical evidence of the positive effects gamification can have on motivation and participation were considered to be an important foundation for the development of Motiwork.

RQ2: What features can provide a good foundation for a motivational application?

In this project, several different features were implemented and gamified in an application that was real-life tested on users and evaluated through interviews. The main features that were implemented were:

- Setting a personal goal
- Starting a study session
- Creating a competition
- Tracking progress

The design and implementation of these features were presented in chapter 4. These features included game mechanics such as competition, progress bars, leaderboards, challenge and points. The game mechanics aimed at fulfilling three different psychological needs (autonomy, competence, relatedness) to help users feel self-determined, with the ultimate goal of motivating students to stop procrastinating and start studying.

A qualitative research approach was taken to answer the research question. Therefore, the discussion was based on trends among the users' responses when asked about motivation and time management related to the app. The findings revealed that the feature which was mentioned by the majority of the users when talking about motivation was competition. This is consistent with what Malhotra et al [81] found about the powerful effect the desire to win can have on behavior. Several users also mentioned that they were encouraged to study when they saw the progress of the other person and the colors on the progress bars (green if the person was in the lead, red if not), indicating that the leaderboard also was a motivating feature. This was consistent with what Landers et al. [65] and Looyestyn et al. [75] found about leaderboards being an effective gamification feature to increase engagement and participation. It also corresponds with what Garcia et al. [41] said about social comparison being an important source of competitive behavior. Motiwork's leaderboard clearly displayed who was in the lead for this exact purpose; triggering the participants' competitive behavior and desire to win.

None of the testers brought up personal goal-setting as a motivational feature, even though the feature was similar to competition. This was a surprising finding, since personal goal-setting was suspected to have a positive effect on motivation. This suspicion was based on the many findings of positive correlation between goal-setting, academic performance and motivation [130, 23, 111, 87, 15]. Especially the findings from Bryan et al. [15], which showed that goal-setting had positive effects on motivation and performance. Two possible reasons why so few were encouraged by the personal goal-setting feature were identified: 1) it was overshadowed by the competition feature and 2) personal goals only fulfilled two of the psychological needs (autonomy, competency), while competition fulfilled all three (+ relatedness). It was mentioned in subsection 2.1.2 that satisfying all three basic psychological needs of SDT can result in intrinsic motivation. The findings which shows that the students were more motivated by the feature that fulfilled all the needs of intrinsic motivation, correlates with what Taylor et al. [122] stated about intrinsic motivation being more motivating than extrinsic motivation.

The users in general liked the study session and said that they were motivated to "finish the session" and to "start doing what I intended to do" by the feature. Several of them had also used applications with a similar feature over a longer period of time, which they expressed had helped them reduce procrastination. Since the testing of Motiwork only lasted a couple of weeks, their experience with other apps that had a similar feature was useful to get a more accurate indication of the effect.

The insights from the interviews made it clear that the testers had more positive feedback regarding Motiworks' influence on their motivation than negative. Although it varied to what degree each participant felt motivated, everyone could point out at least one feature they perceived as motivating. Some also mentioned that they thought it was fun to use the application, which was a positive indication of motivation since motivation can be generated by doing something because it is fun. Seeing that competition was highlighted as a particularly motivating feature, and that several of the users indicated that it motivated them to use their time more efficiently, the hypothesis

of this thesis is strengthened.

Based on these insights, the features perceived as motivating by the users were competition, progress tracking (leaderboard) and study session. Thus, these are the features suggested to provide a good foundation of a motivational application.

RQ3: What can we learn from testing the application?

The last research question assessed the knowledge acquired from testing the application. The majority of the testers had experienced and/or struggled with procrastination related to studying before. It was for the most part undesired, and some of them reported unfortunate consequences such as stress and reduced quality on their work. Some of the users explained that they struggled with distractions such as phones when studying, which was often cited as the cause behind the procrastination. The interviews revealed that several users were encouraged to start on their intended tasks and stop procrastinating by the study session feature, which counted the minutes the users were studying. They were also motivated to start studying by "clocking in hours" in the competition, in order to beat their opponent. Some of the testers said that they found the study-session feature motivating since it gave them a time-estimate to relate to. They decided a goal when they sat the timer, e.g. "work 25 minutes", and knew that they would take a break when the session was over. This made it easier to put away distractions and start doing their intended tasks, according to several of the testers.

When the users were asked about their personal motivations related to working with school, the responses varied from extrinsic to intrinsic motivation. Some testers were extrinsically motivated to study by grades and similar, while others were intrinsically motivated by personal interest in the subject. This showed that students are motivated to study by different factors, which should be taken into consideration when designing a solution.

One of intended outcomes of reducing procrastination and increasing motivation is to improve academic performance. Motiwork was not tested extensively enough to provide any information about changes in learning outcomes, but the participants were asked to share their thoughts regarding the subject. The findings showed that several of the testers believed that they would have an increased learning outcomes if they used the application over a longer period of time. This was mostly because they believed that Motiwork would help them use their time more efficiently when studying, which in turn would result in them getting more work done. As we saw in subsection 2.1.4, increased time-on-task has been found to be associated with producing more knowledge and skills, as long as the time spent is used efficiently [65, 90]. This indicates that the participants' notion of increased learning outcomes as a result of using Motiwork over a longer period of time might be correct.

One of the most surprising findings from the interviews was how little the participants cared about the rewards. The reward system was carefully designed and was imagined to be one of the more motivational features. Despite this, as we saw in the findings, the users did not perceive the rewards as motivating. Rather, they were only concerned about winning the competition.

6.7 Limitations

In retrospect of the research, some limitations were identified which affected the study. For the most part, the research went according to the plan, but there were some factors which are worth mentioning.

- **Finding testers** - It was challenging to recruit testers. A selection of media platforms (such as Slack, Facebook, Messenger) was used to find participants, but the response was minimal. One of the reasons why so few were willing to test was the lack of economic compensation. Funding for the compensation was requested, but was never granted. As a result, the testers were either individuals who wanted to test the app out of personal interest or as a favor.
- **Representative testers** - Due to the small sample size of the testers, it can not be assumed that they are a representative selection. Although the requirement for the tester (being a student) was fulfilled, it was desired to, among other things, have more variation in the year of study. Most of the testers were writing the master thesis, which could affect the results since they have more self-regulated learning than students in their first year.
- **Lack of technical competence** - Quite a few problems arose when developing the app due to lack of technical experience in certain fields. This resulted in the development period dragging out which in turn reduced the testing period of the app, since it came too close to the Easter holidays. It also resulted in some of the features being somewhat buggy.
- **Test period** - Because of the duration of a project like this, there was only enough time for one to two weeks of testing. Since not all the participants could test the app for the entire period, some tested it even less. Due to this, the test period of each person varied, and some testers did not test the app for the desired amount of time.
- **Inexperienced researcher** - The researcher of the thesis is not experienced in conducting research, which affected the planning and execution of the research. This could be seen after the first two interviews, which were not recorded and had few follow-up questions. Consequently the data from the two first interviews was sparse. This could have been avoided if the researcher had more experience and planned the interviews better.

Chapter 7

Conclusions and Further Work

The goal of this research was to develop and test a gamified application to explore solutions that can help students reduce procrastination and increase motivation. Based on an extensive prestudy, the hypothesis was that students could be motivated to increase their student activity and reduce procrastination if they participated in a challenge. Procrastination was identified to be an extensive problem among students, but hardly any motivational applications which addressed this problem were found.

Three research questions were developed to investigate the effects of different features on student motivation and procrastination. To answer these questions a design and creation strategy was used, where an application was developed and tested. The application was successfully developed over a three month period and distributed to twelve testers who downloaded it on their phones. Over a two week period the testers used the application periodically while studying, before a subsequent interview was conducted. The evaluation of the system was done through the data that was generated by these interviews.

The findings from this evaluation revealed that the users perceived competition, leaderboard and study session to be motivating features. Competition was emphasized as the most motivational feature and had promising potential to increase academic performance according to the users. This strengthened the hypothesis of the thesis. Further, it was found that the users were not really motivated by rewards, but by their own desire to win. Additionally, many admitted to have struggled with procrastination and found that the app helped them manage their time and use it more efficiently.

This thesis contributes with a thorough review of the state-of-the-art in the field of student procrastination and motivation. An application was developed and real-life tested on users to explore the motivational effects of four different features. The results suggest that competition was the feature that the users were most motivated by, and that it can provide a good foundation of a motivational application in combination with study session and leaderboard.

7.1 Further Work

The results in this study opens up for further research on the subject to extend and complement the findings. Additionally, some features and UI-improvements that can enhance the user experience and potentially increase motivation are suggested.

- Conduct an experiment. The findings in this study are mainly indications based on the testers' perceptions of Motiwork's effects. A suggestion is to conduct an experiment over a semester with a treatment group and a control group, where the treatment group uses the application. Questionnaires, interviews and academic results can be used at the start and the end of the semester to measure the effects of the app. Through a mixed methods research study, both qualitative and quantitative data can be collected, and the data can be triangulated, which can strengthen the outcome significantly. Results from the study can then be used to provide stronger indications regarding Motiwork's effect on motivation and procrastination, as well as the following effects on academic performance.
- Student procrastination is an extensive problem, and it should be further investigated. The fact that it is a well-known issue yet barely addressed in Norway shows that the field requires extensive research. Based on the limited statistics, a recommendation is that a quantitative study on student procrastination is initiated to map out the extensiveness.
- Investigate further why personal goals were not perceived as motivating. The findings can potentially be used to improve the feature in order to make it more motivating.

There are also some changes in the user interface and additional features that could be implemented and tested:

- Based on how motivated the testers expressed that they were by beating the other person and seeing both participants progress, a suggestion is to add notifications. A theory is that adding notifications, where the testers get a notification on their phone (e.g. "Ola is in the lead by 1 hour! Start studying now to catch up!"), could be a motivating feature that could engage the users even further. Notifications could also be a great way to remind the users to use the applications, as some of them mentioned that they sometimes forgot to start a study session when reading.
- To see if the reward-system has potential to be motivating, it should be modified to not require trust. For example: integrate a payment solution (e.g. Vipps or similar). This way, participants can lock the reward, which in this case would be money, which would automatically be transferred to the winner of the competition.
- Since the social aspect of the app received positive feedback, this could be expanded. The possibility to send a message to the friend (e.g. "you better study if you want to win that reward!"), to see a leaderboard of all users and to start a study session with a friend are some examples of features that could be implemented and researched.
- As of now, a competition is limited to only two participants. Expanding this limit could potentially change effects on motivation, and should be further tested.

Lastly, the findings from this study can be used in other cases related to students and motivation. For example, the concept and features could be modified and used by schools to increase motivation and student activity. However, if the concept is adapted to mandatory activities (which is often the case in schools), it should be carefully designed due to the fact that loss of autonomy can reduce the motivation.

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Appendix A

Information Letter

Informasjonsskriv vedrørende testing av appen "Motiwork"

Hei!

Her kommer litt informasjon til deg som skal teste appen 'Motiwork'.

Først og fremst vil jeg si tusen takk for at du har sagt ja til å teste applikasjonen. Din testing vil bidra til å produsere verdifull data som kommer til å være essensiell når det kommer til min forståelse av applikasjonens effekt.

Motiwork er en applikasjon som skal motivere studenter til å jobbe jevnt med skole. Gjennom å lage en applikasjon hvor man kan starte samarbeid med venner og å lage utfordringer, ønsker jeg å se om studenter blir motivert av å konkurrere mot hverandre når man potensielt kan vinne og tape en premie man selv blir enige om.

Din oppgave er å laste ned applikasjonen, legge til en eller flere venner og sette opp en utfordring hvor dere blir enige om hva taperen skal skyldes vinneren. Et samarbeid kan bare bestå av to venner, men man kan lage flere samarbeid. Utenom det står du fritt til å bruke applikasjonen som du selv ønsker.

Samtidig som du får denne mailen vil du også få en mail fra "TestFlight" som kommer med instruksjoner om hvordan du kan laste ned applikasjonen til telefonen din. Det skal være relativt enkelt, men hvis du støter på noen problemer er det bare å ta kontakt. Etter du har lastet ned applikasjonen er det bare å sette i gang med testingen.

Testperioden vil foregå fra tirsdag 29.03.2022 til torsdag 7.04.2022. Etter testperioden ønsker jeg å intervju deg for å høre om din opplevelse med appen. Dette intervjuet vil ta omtrent 20-30 minutter og vil foregå digitalt. Siden det er uken før påske har jeg forståelse for at tidspunktene kan passe dårlig, men i så fall er det bare å si ifra så finner vi løsning på det. Fyll inn det tidspunktet som passer best for deg her:

<https://docs.google.com/spreadsheets/d/18IFHo6gk7FZcYhugmG5mkKZZXBd9Zsu2363E50N8e5A/edit?usp=sharing>.

OBS! Når du tester appen er det viktig at du ikke fokuserer på designet og den tekniske funksjonaliteten, men heller hva du tenker rundt *konseptet* til appen. Målet med testingen er ikke å avdekke feil og mangler ved applikasjonen i seg selv, men å få en forståelse av hvorvidt konseptet fungerer.

Dette må du gjøre:

1. Fyll ut samtykkeskjemaet (se vedlegg) og sende det til meg på mail (annikers@stud.ntnu.no)
2. Sett deg opp på tid for intervju
3. Last ned appen (link har kommet på mail fra testflight)
4. Start testingen!

Det er også verdt å merke seg at dette er en beta-applikasjon, som vil si at appen kan krasje, og noe av funksjonaliteten kan være ustabil.

Til slutt vil jeg nok en gang takke for at du har sagt ja til å teste appen, og håper at koser deg med testingen! Det er bare å ta kontakt med meg hvis du har noen spørsmål.

Anniken Syvertsen
annikers@stud.ntnu.no

Verdt å merke seg:

- Noen av inputfeltene kan være litt treige til å aktiveres når du trykker på de. Men hvis du trykker midt i feltet skal det gå
- Hvis du skal bruke 'stopwatch' for å registrere tid du arbeider må du passe på å skru av skjermlås, siden den ikke klarer å tracke tiden med låst skjerm. Eller så kan du bruke timer, da den ikke har samme problemet.
- Det å sette seg et mål er ikke det samme som å lage en utfordring med en venn, da mål kun gjelder for én person

Appendix B

Interview Template

Intervjugal

Starte med en åpen dialog for å komme i gang:

- Hvordan synes du testingen har gått?

Tema: studie-rutiner. Mål: få bakgrunnsinformasjon om studentens studievaner

- Kan du beskrive en typisk studieuke for deg?
- Hvordan planlegger du og jobber med oppgaver?
- Hva motiverer deg?
- Pleier du å sette deg noen mål? I så fall hva slags?
- Er det noe forskjell på hvordan du arbeider i ulike emner? Hva, og hvorfor?
- Har arbeidsformen og holdningene dine, eller tilnærmingen til studiet, endret seg i løpet av studiet?

Tema: lignende prestasjonsmålede applikasjoner. Mål: finne ut om testeren har erfaring med måle prestasjoner

- har du brukt/bruker du Strava?
 - Hva bruker du strava til?
 - Blir du motivert av Strava?
 - Hvilke features blir du motivert av?
- har du brukt hold?
 - hva brukte du appen til?
 - ble du motivert av appen?
 - Hvilke features ble du motivert av
- har du brukt noen andre apper til å sette deg mål? (trening, sparing, produktivitet e.l)
 - hva brukte du appen til?
 - ble du motivert av appen?
 - Hvilke features ble du motivert av

Tema: prokrastinering og utsetting av arbeid. Mål: finne ut av behovet for en slik app for den personen som testet den

- Hvor enig er du i denne påstanden: "Jeg utsetter ofte skolearbeid"
 - helt enig
 - veldig enig
 - nokså enig
 - verken eller
 - litt uenig
 - ganske uenig
 - helt uenig
- Hvor enig er du i denne påstanden: "Jeg synes det er lite motiverende å jobbe med skole"
 - helt enig
 - veldig enig
 - nokså enig
 - verken eller
 - litt uenig
 - ganske uenig

- helt uenig
- Hvor enig er du i denne påstanden: "Jeg utsetter ofte skolearbeid fordi jeg jobber bedre under press"
 - helt enig
 - veldig enig
 - nokså enig
 - verken eller
 - litt uenig
 - ganske uenig
 - helt uenig
- Hvor enig er du i denne påstanden: "Hvis det hadde vært hyppigere frister, hadde jeg jobbet mer jevnt med skole og ikke utsatt like mye"
 - helt enig
 - veldig enig
 - nokså enig
 - verken eller
 - litt uenig
 - ganske uenig
 - helt uenig
- Som student, har du følt på at det har vært problematisk med prokrastinering? At det har hatt negative konsekvenser for prestasjonene dine?

Tema: applikasjonen. Mål: finne ut om brukergrensesnitt fungerte greit

- Hvordan synes du det var å forstå hvordan appen fungerte?
- Hvilke features fant du motiverende?
- Var det noen features som virket mot sin hensikt, som var demotiverende?
- Hva synes du om utfordring-rubrikken? Var den motiverende? Hvorfor/hvorfor ikke?
- Følte du at applikasjonen manglet noe? I så fall, hva?
- Er det noe som hadde fått deg til å bruke applikasjonen mer?

Tema: bruk av applikasjonen. Mål: finne ut av bruksmønsteret til testeren

- Hvor mye brukte du applikasjonen?
- Var det noe forskjell på hvor mye du brukte applikasjonen i starten og i slutten av testperioden?
- Hva fikk deg til å fortsette å bruke applikasjonen?
- Satt du deg et personlig mål?
- Lagde du en utfordring med en venn?
- Ble dere enige om en premie taperen skulle gi til vinneren?
- Jukset du?

Tema: motivasjon. Mål: finne ut om testeren synes appen var motiverende

- Var appen motiverende?
- Hva ved applikasjonen var motiverende?
- Synes du det var gøy å bruke applikasjonen?
- *Har du jobbet mer, mindre eller likt når du har brukt applikasjonen, som du hadde gjort i denne perioden uten applikasjonen?

- Har det å bruke applikasjonen endret noe på din opplevelse av å arbeide med skole denne uken? Evt. tror du appen vil endre noe på din opplevelse av å arbeide med skole?
- *Hvis du hadde brukt applikasjonen over en lengre periode, tror du at det hadde påvirket læringsutbyttet ditt?
- Ble du mest motivert av å sette deg et personlig mål eller å lage en konkurranse med en venn?
- Hva gjorde applikasjonen attraktiv?
- Tror du at du hadde brukt applikasjonen?
- Hva ville du ha brukt applikasjonen til?
- Vant du eller tapte du utfordringen?
- Etter en endt utfordring, hadde du lyst til å lage en ny?
- Hvis testeren har brukt andre apper til å måle prestasjon: hva tenker du om denne applikasjonen i forhold til hold?

Appendix C

Consent Form

Vil du delta i forskningsprosjektet

«Belønningssystemer for å øke studenters arbeidsmotivasjon»

Dette er et spørsmål til deg om å delta i et forskningsprosjekt hvor formålet er å teste ut en applikasjon som skal motivere studenter til å arbeide jevnt med studier. I dette skrivet gir vi deg informasjon om målene for prosjektet og hva deltakelse vil innebære for deg.

Formål

Forskningsprosjektet er en del av en masteroppgave hvor en beta-app skal utvikles og testes i en periode samt et intervju i etterkant av testingen. Appen skal undersøke hvordan man kan utnytte belønningssystemer for å motivere studenter til å jobbe jevnt med skole gjennom semesteret. For å teste appen logger man seg inn med en e-post adresse som registreres. Denne lagres i databasen, men vil slettes i etterkant av prosjektet.

Hvem er ansvarlig for forskningsprosjektet?

Institutt for datateknologi og informatikk (IDI) er ansvarlig for prosjektet.

Hvorfor får du spørsmål om å delta?

Du har fått spørsmål om å delta fordi du er en student som enten har

- Svart på en utlysning på en læringsplattform (blackboard)
- Svart på en utlysning på sosiale medier
- Meldt interesse for å delta på prosjektet ved å ta kontakt med meg etter å ha hørt om prosjektet
- Blitt kontaktet av meg fordi jeg har kjennskap til deg fra før og tror du er en relevant person for prosjektet

Hva innebærer det for deg å delta?

Hvis du velger å delta i prosjektet innebærer det at du tester applikasjonen over en periode på fire uker og stiller til intervju i etterkant av testingen. Intervjuet vil ta deg omtrent 30 minutter. For å teste applikasjonen må du logge deg inn med en mailadresse som lagres elektronisk. Intervjuet vil inneholde spørsmål om din studie-motivasjon og arbeidsmengde, samt din opplevelse av testingen av applikasjonen. Intervjuet vil bli tatt opp og dine svar fra intervjuet blir registrert elektronisk, men vil bli slettet i etterkant av prosjektet.

Det er frivillig å delta

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

Ditt personvern – hvordan vi oppbevarer og bruker dine opplysninger

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 er ingen andre som har tilgang til personopplysningene, da den er lagret på en passord-beskyttet database.

Personopplysningene som registreres (e-mail) vil ikke publiseres, og vil slettes etter prosjektet. Det vil ikke være mulig å gjenkjenne deg i publikasjonen av prosjektet.

Hva skjer med opplysningene dine når vi avslutter forskningsprosjektet?

Opplysningene anonymiseres når prosjektet avsluttes/oppgaven er godkjent, noe som etter planen er i august 2022.

Dine rettigheter

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

- innsyn i hvilke personopplysninger som er registrert om deg, og å få utlevert en kopi av opplysningene,
- å få rettet personopplysninger om deg,
- å få slettet personopplysninger om deg, og
- å sende klage til 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 Institutt for datateknologi og informatikk har NSD – Norsk senter for forskningsdata AS vurdert at behandlingen av personopplysninger i dette prosjektet er i samsvar med personvernregelverket.

Hvor kan jeg finne ut mer?

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

- Institutt for datateknologi og informatikk ved
 - o Anniken Syvertsen, epost: annikers@stud.ntnu.no, telefon: 95127174
- Veileder: Trond Aalberg, epost: trond.aalberg@ntnu.no, telefon: 97631088
- Vårt personvernombud: Thomas Helgesen, epost thomas.helgesen@ntnu.no, telefon 93079038

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

- NSD – Norsk senter for forskningsdata AS på epost (personverntjenester@nsd.no) eller på telefon: 55 58 21 17.

Med vennlig hilsen

Trond Aalberg
(Forsker/veileder)

Anniken Syvertsen

Samtykkeerklæring

Jeg har mottatt og forstått informasjon om prosjektet «Belønningssystemer for å øke studenters arbeidsmotivasjon» og har fått anledning til å stille spørsmål. Jeg samtykker til:

- å delta i testing av applikasjon
- å delta i intervju i etterkant av testingen

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

(Signert av prosjektdeltaker, dato)

Appendix D

Interviews

Dato og tid: Torsdag 7.april, 16:00

Lokasjon: Digitalt, over Zoom

Opptak: Ja

Intervjuer: Anniken Syvertsen

Intervjuobjekt (alias): Anne

Starte med en åpen dialog for å komme i gang:

AS: Hvordan synes du testingen har gått?

Anne: Har testet den litt, og jeg synes det har gått greit. Jeg synes det er et kult konsept liksom. Jeg har jo brukt hold (appen) en del tidligere og det er jo ganske likt. Og det synes jeg er veldig motiverende å bruke. Så synes at det er et kult konsept, at det er som hold, men at man kan bruke det sammen med andre.

Tema: studie-rutiner. Mål: få bakgrunnsinformasjon om studentens studievevaner

AS: Kan du beskrive en typisk studieuke for deg?

Anne: Ja, det er jo veldig annerledes fra uke til uke da, siden jeg skriver master. Jeg pleier å være på skolen, ja det kommer litt an på, men kanskje sånn fem timer. Kanskje fra ni om morgenen. Det kommer litt an på oppgaven man har, sånn i det siste har det vært mest praktisk, så det har gått i implementasjon og de siste ukene har det vært forberedelser til eksperimenter.

AS: Hvordan planlegger du og jobber med oppgaver?

Anne: Tror det er litt fra dag til dag. Jeg er litt sånn, drar på skolen og ser hva som må bli gjort også prøver jeg å gjøre jeg så mye som mulig i løpet av dagen. Også er det det samme neste dag. Har ikke sånn ukentlig planlegging liksom, jeg gjør så mye som mulig når jeg kan.

AS: Hva motiverer deg?

Anne: Nå er det mest det å gjøre det bra på masteroppgaven. I tillegg har jeg litt ekstern motivasjon med tanke på veiledere og veilederen fra kunden, spesielt siden jeg har møte med de regelmessig så føler jeg at jeg må levere noe. Det var kanskje litt mer i fjor, nå er det litt mer det å skrive en bra oppgave. Og få noe ut av den dataen jeg har samlet inn. Litt sånn 50/50 mellom kunden og meg. Jeg leverer jo noe til de, men jeg vil gjøre det bra for min del. Veldig annerledes fra tidligere, nå som jeg skriver. Tidligere har det jo vært eksamen som har vært motivasjonen, det å gjøre det bra på eksamen og komme seg gjennom semesteret.

AS: Pleier du å sette deg noen mål? I så fall hva slags?

Anne: Ja, det og kommer litt an på. Nå har jeg jo noen milepæler. Sånn i februar skulle jeg være ferdig med implementasjon og mars så skulle jeg ha eksperimentet ferdig. Sånne mål da, for masteroppgaven. Jeg merker at jeg blir mye mer motivert når jeg har mål å forholde meg til. Spesielt som er så korte som mulig, at ikke jeg har et halvt år eller et semester på å gjøre én ting. På daglig basis, når jeg bruker hold f.eks., jeg har jo satt mål der også, og da har jeg faktisk lyst til å opptjene de poengene og ikke gå inn på telefonen, men å jobbe med skole. Og da kan målet være å jobbe én time i strekk kanskje, også ta pause også jobbe en time i strekk osv. Mer som det konseptet med pomodoro, med jobbing også pause. Det synes jeg er veldig motiverende.

AS: Er det noe forskjell på hvordan du arbeider i ulike emner? Hva, og hvorfor?

Anne: Ja, det har det. Du tenker på hva, mengde?

AS: Nei, bare litt hvordan du arbeider med de forskjellige fagene på en måte.

Anne: Med tanke på motivasjon?

AS: Nei, litt mer sånn hvordan du arbeider med et fag.

Anne: Sånn ja. På informatikk er det veldig praktisk da, så jeg tror jeg har sånn, eller i forhold til matte og fysikk så er det mer teoretisk og mer lesing, men på informatikk er det mer praktisk. Tror ikke jeg har lest så mye på informatikkstudiet. Litt lesing i noen fag.

AS: Har arbeidsformen og holdningene dine, eller tilnærmingen til studiet, endret seg i løpet av studiet?

Anne: Ja, det har det absolutt. Jeg vet ikke helt hvordan det endrer seg, men tror jeg chiller litt mer på studiet. I 1.klasse var det litt sånn alt var nytt og alt var vanskelig. Brukte mye mer tid på å prøve å skjønne ting. Nå er fagene litt enklere, og jeg har blitt mer vandt med hvordan ting er på universitet. Men ja, så jeg brukte mer tid uten å få mer igjen for det i begynnelsen. Nå bruker jeg litt mindre tid, men får mer igjen for det.

Tema: lignende prestasjonsmålede applikasjoner. Mål: finne ut om testeren har erfaring med måle prestasjoner

AS: Har du brukt/bruker du Strava?

Anne: Nei

AS: har du brukt hold?

Anne: Ja

AS: Hva brukte du appen til?

Anne: For å tvinge meg til å jobbe med skole. Synes det fungerte veldig bra. For der er det sånn at man starter timeren, og kan låse mobilen, men kan ikke gå ut av appen uten at det ødelegger for tiden man har brukt. Det hjelper veldig mye. Også er det og veldig gøy at man kan bruke poengene på faktiske ting, at man kan få en kaffe eller et flakslodd.

AS: Ble du motivert av appen?

Anne: Tror ikke jeg ble motivert, eller jo kanskje med tanke på premiene. Men den viktigste motivasjonen var at den tvang meg til å ikke bruke mobilen eller prokrastinere. Men at den fikk meg til å faktisk jobbe med det jeg skulle jobbe med. Men selvfølgelig, premier er jo motiverende

AS: Har du brukt noen andre apper til å sette deg mål? (trening, sparing, produktivitet e.l)

Anne: Eneste jeg kommer på i farten er helse-appen til apple. Der er det hvor mange skritt man har gått. Og det har vært litt gøy når man er på ferie og gått veldig mye, så er det gøy og se hvor mange skritt man går. Men bruker det ikke til å sette mål på hvor mye jeg skal gå.

Tema: prokrastinering og utsetting av arbeid. Mål: finne ut av behovet for en slik app for den personen som testet den

- Hvor enig er du i denne påstanden: "Jeg utsetter ofte skolearbeid"
 - helt enig
 - veldig enig
 - **nokså enig**
 - verken eller
 - litt uenig
 - ganske uenig
 - helt uenig
- Hvor enig er du i denne påstanden: "Jeg synes det er lite motiverende å jobbe med skole"
 - helt enig
 - veldig enig
 - nokså enig
 - verken eller

- litt uenig
- **ganske uenig**
- helt uenig
- Hvor enig er du i denne påstanden: "Jeg utsetter ofte skolearbeid fordi jeg jobber bedre under press"
 - helt enig
 - **veldig enig**
 - nokså enig
 - verken eller
 - litt uenig
 - ganske uenig
 - helt uenig
- Hvor enig er du i denne påstanden: "Hvis det hadde vært hyppigere frister, hadde jeg jobbet mer jevnt med skole og ikke utsatt like mye"
 - helt enig
 - **veldig enig**
 - nokså enig
 - verken eller
 - litt uenig
 - ganske uenig
 - helt uenig

AS: Som student, har du følt på at det har vært problematisk med prokrastinering? At det har hatt negative konsekvenser for prestasjonene dine?

Anne: Ehm, ja det tror jeg. Ikke sånn ekstremt mye liksom, men altså, hadde jeg jobbet jevnere hadde jeg nok gjort det bedre på en del ting ja.

Tema: applikasjonen. Mål: finne ut om brukergrensesnitt fungerte greit

AS: Hvordan synes du det var å forstå hvordan appen fungerte?

Anne: Ehm. Det gikk egentlig ganske bra. Nå tenkte jeg ikke så mye på selve appen siden vi skulle fokusere på konseptet. Men jeg skjønnte at det var veldig likt hold ganske fort, med den timeren og at det var det som var hoved greia. Også ga det jo mening på hjem-skjermen at det samarbeidet kommer opp først. Synes det fungerte ganske greit.

AS: Hvilke features fant du motiverende?

Anne: Det var i så fall samarbeidet. Hadde et samarbeid med en venn, og han har jo vært veldig flink på å jobbe. Og når det kommer opp sånn rød farge med advarsel om at den andre personen ledet, så hadde det en effekt på meg. Ble litt sånn 'åh nei han andre leder, jeg har ikke gjort noen ting'. Så ja, den featuren var bra. Og timeren da.

AS: Var det noen features som virket mot sin hensikt, som var demotiverende?

Anne: Nei, kanskje litt sånn siden jeg prøvde jo ikke den stoppeklokken siden du sa den ikke fungerte så bra, så jeg brukte jo bare timeren. Eller det var ikke demotiverende, men det kan kanskje ha noe å si at den ikke fungerer. At ikke alle mulighetene er der som egentlig skulle vært der. Men bortsett fra det var det ikke noe som var demotiverende.

AS: Hva synes du om utfordring-rubrikken? Var den motiverende? Hvorfor/hvorfor ikke?

Anne: Den likte jeg. Det var veldig tydelig hvem som ledet. Vet ikke hvordan den ser ut når jeg leder da. Men det var veldig sånn, "nå er det ille, nå leder han andre", med rød advarsel og alt. Så ja, jeg synes det var nice.

AS: Synes du det var motiverende?

Anne: Akkurat den delen?

AS: Ja.

Anne: Ja, det vil jeg si. Jeg tror hvertfall hvis jeg hadde jobbet med han i samme fag, at jeg hadde blitt mer påvirket til å jobbe mer med det faget. Men litt spesielt nå, siden jeg har reist og ikke har jobbet så veldig mye med skole.

AS: Følte du at applikasjonen manglet noe? I så fall, hva?

Anne: Altså, jeg skjønnte ikke helt hvordan det fungerte med den timeren. I hold, så stopper timeren når du går ut av applikasjonen også får du sånn advarsel. Virket ikke som at det var en ting på denne appen. Jeg skjønnte ikke helt. Noen ganger prøvde jeg å starte timeren for å se om den fungerte, og da mistet jeg poengene noen ganger.

AS: Er det noe som hadde fått deg til å bruke applikasjonen mer?

Anne: Ja, altså hvis den hadde vært litt mer smude. Altså design og brukeropplevelsen og liksom uten bugs og sånt, så tror jeg definitivt det hadde vært veldig gøy å bruke den. Spesielt hvis jeg hadde tatt fag på bachelornivå, tror jeg det hadde vært veldig gøy å bruke den og å ha premier og sånt.

Tema: bruk av applikasjonen. Mål: finne ut av bruksmønsteret til testeren

AS: Hvor mye brukte du applikasjonen?

Anne: Kanskje sånn, fem ganger tilsammen.

AS: Var det noe forskjell på hvor mye du brukte applikasjonen i starten og i slutten av testperioden?

Anne: Det var jo mest de første dagene da.

AS: Satt du deg et personlig mål?

Anne: Nei, jeg gjorde ikke det. Brukte kun samarbeid.

AS: Lagde du en utfordring med en venn?

Anne: Ja

AS: Ble dere enige om en premie taperen skulle gi til vinneren?

Anne: Ja, vi gjorde det, men det var skikkelig tulle. Tror det hadde vært bedre hvis vi hadde valgt en ekte premie. Vi kalte oss jo 'astrologi-gutta' så premien vår var liksom 'stjernetegnet sitt'. Jeg tror at hvis jeg hadde brukt den på ekte og gjort skole og satt et mål om en premie om en øl, så hadde det vært annerledes. Det tror jeg hadde vært veldig bra.

AS: Var det en spesiell grunn til at dere ikke gjorde det?

Anne: Altså, det var han andre som satt premien. Og jeg skulle jo reise på ferie så tenkte at jeg ikke skulle jobbe så mye uansett, så ville ikke risikere å miste en øl liksom. Eller det var liksom ikke noe poeng for meg å vedde noe som jeg visste at jeg ikke kom til å vinne uansett.

Tema: motivasjon. Mål: finne ut om testeren synes appen var motiverende

AS: Var appen motiverende?

Anne: Ja, det vil jeg si. Det synes jeg.

AS: Hva ved applikasjonen var motiverende?

Anne: Det sosiale er det mest motiverende. At man konkurrerer mot folk man kjenner.

AS: Synes du det var gøy å bruke applikasjonen?

Anne: Eh, ja. Ja, det var en grei opplevelse.

AS: Har du jobbet mer, mindre eller likt når du har brukt applikasjonen, som du hadde gjort i denne perioden uten applikasjonen?

Anne: Det hadde nok ingenting å si dessverre, fordi jeg ikke jobbet så mye med skole, eller jeg hadde ikke tenkt til å jobbe så mye med skole uansett.

AS: Har det å bruke applikasjonen endret noe på din opplevelse av å arbeide med skole denne uken? Evt. tror du appen vil endre noe på din opplevelse av å arbeide med skole?

Anne: Åh, det er vanskelig å si. Opplevelse av å jobbe med skole. Jeg vet ikke helt. Nå må jeg tenke på hold, det har jo noe å si på min opplevelse siden jeg konsentrerer meg mer. Så det har jo gjort det, så jeg tror kanskje det hadde gjort det hvis jeg hadde brukt den.

AS: Hvis du hadde brukt applikasjonen over en lengre periode, tror du at det hadde påvirket læringsutbyttet ditt?

Anne: Kanskje, faktisk. Det tror jeg kanskje at det kunne gjort. Ser for meg at jeg hadde hatt masse samarbeid med folk på sal og sånt. Sånn mot eksamensperioden, eller mot sommeren. Det hadde vært lettere å komme på sal også kan man snakke om det i gangene og si 'jeg har jobbet mer enn deg, så du må jobbe mer for å få den ølen' og sånt. Så ja, det tror jeg.

AS: Hva tenker du om denne applikasjonen i forhold til hold?

Anne: Jeg tenker at det er et kult konsept og at det har fortsatt en vei å gå med tanke på brukeropplevelse og design. Men sett vekk ifra det da, så synes jeg at det å ha den ekstra featuren å jobbe med andre folk og det sosiale er et veldig kult attributt. Så ja, det tror jeg er veldig kult. Det hadde kanskje vært litt kult at man kan chatte med folk og, sånn at man kan kommunisere med den man har samarbeid med, sende små meldinger eller noe.

Dato og tid: Onsdag 6.april, 14:00

Lokasjon: Digitalt, over Zoom

Opptak: Ja

Intervjuer: Anniken Syvertsen

Intervjuobjekt (alias): Ben

Starte med en åpen dialog for å komme i gang:

AS: Hvordan synes du testingen har gått?

Ben: Jeg synes at det har vært problemfritt å finne andre brukere som jeg vet at har vært på appen. Jeg synes det var veldig greit å opprette utfordring og sette mål. Fint at man fikk forslag til hvilke rewards som var naturlige. Jeg prøvde å sette eget mål, ved opprettelse av appen, men da var jeg mer i testing-fase, så da trykket jeg bare litt og satt opp at jeg skulle jobbe ti timer de neste dagene. Men jeg glemte at jeg hadde et internt mål, fordi jeg ble veldig opptatt i fellesskap og konkurranse. Jeg var mer på fellesskap taben enn hjem-taben. Mål-funksjonaliteten falt litt bort på grunn av det. Det har vært kult å gå innom og sjekke progresjon og se hvem som ligger best an. Jeg synes det fungerer veldig bra. Hver gang jeg har recordet så forholder jeg meg til poeng som er basert på hvor lenge jeg jobber, når jeg da forholder meg til timer når jeg har challenger med andre, blir det litt mye tall. Og da ser det litt lite ut når man har 0.7 i progresjon. Selve tracking: stopwatch har jeg ikke funnet anledning til å bruke, timer har jeg brukt og det krever litt ekstra at man faktisk passer på og går inn og stopper den. Noe jeg ikke tenker ofte over. Tillitsbasert: de gangene jeg har gått ut så har jeg fått kommentarer på at jeg må stoppe appen fra han jeg konkurrerer mot. Så det skjer fort misforståelser her. Deilig å sette hvor mange timer man skal jobbe. Hadde vært litt nicere om man kunne justere hvor mange timer man har arbeidet i ettertid.

AS: Hva mener du med nice å justere?

Ben: Det med at man faktisk har tracket tid, og man ser at noe har blitt gjort feil og man ser at forrige session ikke er riktig, så kan man endre på den i ettertid. Litt kjipt å ha den ledelsen over han andre. Hadde vært fint å kunne endre på tidligere session, kunne gjøre de kortere. På profil-siden så er det litt depressivt å se på arkiverte mål, siden jeg faillet på den ganske tidlig. Hadde vært bedre hvis det var achievements enn arkiverte mål, nå blir jeg minnet på en failure hver gang jeg går inn på profil-siden. For eksempel at man sjekker achievements så står det "jobbet tre timer i strekk. Wow!" istedenfor at det står "du nådde ikke målet ditt".

Tema: studie-rutiner. Mål: få bakgrunnsinformasjon om studentens studievaner

AS: Kan du beskrive en typisk studieuke for deg?

Ben: Veldig preget av master-skriving, som ikke er så rettet mot forelesninger og den slags. Tidligere var det veldig basert på øvinger som skulle inn og det krevde en enorm konsentrasjon der. Nå er det store deler av dagen hvor jeg ikke konsentrerer meg så mye, men noen ganger jeg setter meg ned og prøver å være effektiv og jobbe. Mandager prøver jeg å ha konsentrasjon på topp, starter tidlig, prøver å legge bort distraksjoner, sitte og gå over hva jeg skal gjøre den uken. Pleier å ta helt pause når jeg tar pause. Legger fra meg pcen for å koble helt av. Senere på dagen så er det tilbake og prøve å kartlegge det jeg skal gjøre dagen etterpå for da har jeg brukt så mye hjernekapasitet. Det er ganske Monotont, annet enn rett før veiledermøter, siden jeg må konsentrere meg i større perioder fordi jeg skal svare for meg selv i møte med veileder.

AS: Hvordan planlegger du og jobber med oppgaver/master?

Ben: Veldig glad i å lage små punktlister som går ut på hva er det jeg faktisk skal se på. Før jeg skal skrive noe liker jeg å skrive seksjoner og underseksjoner, og gå inn på google

scholar og finne kilder til det jeg skal skrive om. Det krever ikke så mye hjernekapasitet, men holder interessen litt ved like. Også må jeg heller senere gå inn og ta i et ordentlig tak, ta på headset og finne ro. Sette meg ned og konsentrere.

AS: Hva motiverer deg til å jobbe med skole?

Ben: Godt spørsmål. Jeg synes jo at det å fullføre noe, det å få fremgang. Jeg synes at det er interessant, entusiasme over emnet man jobber med. Men vel så mye mestringsfølelse, det er jo i bunn motivasjon at selv om man har jobb, så har man jo økonomiske insentiver som kommer frem hvis man ikke fullfører. Jeg synes også det sosiale, det at man har andre informatikere som gjør det samme og som har fulgt et studieløp.

AS: Har arbeidsformen og holdningene dine, eller tilnærmingen til studiet, endret seg i løpet av studiet?

Ben: Ja, den største overgangen var nok fra 4-5 klasse. Snarere forrige semester til dette semesteret. Det ble et stort taktskifte i formen på studiet, det at man har jobbet så mye med eksamen, plutselig skal man bli akademiker og lese papirer og få ting ut av det. Noe som var veldig fremmed for meg. Jeg synes at man kanskje har divergert litt fra det som hadde vært interessant på informatikk-studiet, det å dypdykke mer og evaluering av koding og kundedrevne prosjekter som jeg synes er veldig gøy. Jeg har kjent på det etterhvert som man går over til master trinn.

AS: Føler du at det har vært vanskelig å motivere deg selv til å jobbe mer med skole nå som det ikke har vært like hyppige frister som man typisk har med øvinger?

Ben: Det er en annen form for selv-disiplin på en måte. Så jeg føler det. Man har jo delmål, møter med veileder, må ha delmål for at det skal gå fremover, og gjøre det og det frem til møte med veileder. Jeg har jo absolutt kjente på det helt i starten. Men samtidig får man mye motivasjon av å snakke med andre og høre hvordan de gjør ting. Og å høre at de har mye interesse rundt å gjøre en oppgave. Det blir en liten omstilling der.

Tema: lignende applikasjoner. Mål: finne ut om testeren har erfaring med måle prestasjoner

AS: Har du erfaring med applikasjoner eller andre verktøy som måler prestasjon?

Ben: Har en klokke som måler skritt, senest i sta fikk jeg melding om at "you can soon reach your step goal". Jeg er veldig fan av å måle ting. Smartklokken tracker også det meste av søvn. Jeg har faktisk hatt en litt lignende konkurranse som i motiwork med mamma, som er skrittkonkurranse. Og da går det faktisk så langt som at jeg går lange turer på kvelden bare for å vinne mot mamma. Jeg har også vært borti andre applikasjoner som f.eks. hold, hvor du konkurrerer mye mot deg selv og du har dette leaderboardet hvor du kan se gamle facebookvenner rocke på toppen, og du kan se at de holder produktiviteten oppe. Og da er det jo en liten gulrot at du kan få rabatterte priser på narvesen eller mulighet. Også har jeg brukt forest, hvor du har denne hagen med planter og trær. Der har du jo en timer også kan du bestemme f.eks. at du ikke skal være på telefonen på to timer. Og da tenker jeg typisk "nei, jeg kan faktisk ikke la det treet der visne". Også kjenner jeg også på, ved bruk av sånne apper at, f.eks. med skrittmåler er at hvis du har gått 9998 skritt, så kan du sette ned målet med to skritt også når du målet. Og samme med hold-appen, her har jeg jo funnet ut at hvis du går kjapt ut og kjapt inn igjen så kan du sjekke den snappen. Så jeg finner måter å lure meg selv på. Jeg har god kjennskap til det sånn.

AS: har du brukt/bruker du Strava?

Ben: Ja, det stemmer.

AS: Hva bruker du strava til?

Ben: Primærfunksjonen er jo at den deler opp turen i ulike segmenter, så du kan sammenligne efforten din på ulike deler av turen. Som er veldig kult, for da kan du sammenligne deg selv. Da kan man f.eks. se at i dette segmentet løp jeg raskere enn tidligere. Men også det at man deler treningsglede, jeg synes det er morsomt å løpe og tenke på hva man kan skrive etter en tur og sånne ting. Så man får det sosiale aspektet der. Og at man kan gi kudos etter en tur, bli anerkjent.

AS: Blir du motivert av Strava?

Ben: Ja, går litt i bølgedaler, innimellom er jeg veldig motivert. De har jo disse medaljene på 5 km, 1 mil og halvmaraton, som man kan melde seg opp til hver måned. Hvis jeg er helt inni det blir jeg motivert til å løpe fordi det skal stå på profilen, og da må jeg løpe den mila eller den 5km tur og prøve å få inn et halvmaraton. Man blir veldig drevet av dette, selv om det er litt idiotisk også. Som jeg nevnte tidligere, er det jo sånn at hvis mamma ser en aktivitet og sånt så blir hun jo å si sånn 'hvilken medalje skulle du ha nå' på en måte. Så det er mye sånne teite ting også.

Tema: prokrastinering og utsetting av arbeid. Mål: finne ut av behovet for en slik app for den personen som testet den

- Hvor enig er du i denne påstanden: "Jeg utsetter ofte skolearbeid"
 - helt enig
 - veldig enig
 - nokså enig
 - verken eller
 - **litt uenig**
 - ganske uenig
 - helt uenig
- Hvor enig er du i denne påstanden: "Jeg synes det er lite motiverende å jobbe med skole"
 - helt enig
 - veldig enig
 - nokså enig
 - verken eller
 - litt uenig
 - **ganske uenig**
 - helt uenig
- Hvor enig er du i denne påstanden: "Jeg utsetter ofte skolearbeid fordi jeg jobber bedre under press"
 - helt enig
 - veldig enig
 - nokså enig
 - verken eller
 - litt uenig
 - ganske uenig
 - **helt uenig**
- Hvor enig er du i denne påstanden: "Hvis det hadde vært hyppigere frister, hadde jeg jobbet mer jevnt med skole og ikke utsatt like mye"
 - helt enig
 - **veldig enig, hvis det hadde vært obligatorisk.**
 - nokså enig

- verken eller
- litt uenig
- ganske uenig
- helt uenig

AS: Har du følt på at det har vært problematisk med prokrastinering? At det har hatt negative konsekvenser for prestasjonene dine?

Ben: Ganske uenig, føler egentlig ikke det, fordi det er kanskje litt mer mindsett mitt, hvis jeg føler at jeg gjør mitt beste og det ender opp med at jeg prokrastinerer e.l. så var det det jeg trengte da. Hvis jeg er tåkete i hodet er det ikke vits i å dytte inn mer informasjon. Det er veldig sjelden jeg starter dagen med å se på netflix. Men de dagene jeg kjenner at det ikke fungerer så starter jeg gjerne med prokrastinering. Føler jeg blir ganske motivert av å komme inn i noe, føler ikke at jeg hadde klart å gjøre det. Prokrastinering er også viktig verktøy for å få motivasjon når det gjelder.

Tema: applikasjonen. Mål: finne ut om brukergrensesnitt fungerte greit

AS: Hvordan synes du det var å forstå hvordan appen fungerte?

Ben: Da åpner jeg appen nå for å se litt. Synes det var ganske plug and play, tydelig hvordan man skulle opprette bruker og logge på. Og når det kom til venner opplevde jeg det som ganske greit. Det var jo en liste med alle brukerne så man kunne bare trykke på pluss-tegnet og ta det derfra. Det eneste som var litt dumt var at man må sende en request og vente på svar, som en sånn dobbel handshake. Det kjente jeg var en liten hickup, at jeg gjerne vil teste alle funksjoner med en gang. Ja også tok det jo litt tid, fordi jeg slet litt med å skjønne stopwatch. Begynte å lure på om jeg hadde misforstått noe der siden den var lite brukervennlig.

AS: Var appen motiverende?

Ben: Ja, jeg synes det var gøy å kunne opprette challenges mot venner og sånt. Jeg blir motivert i den grad. Motiverende å gå inn på fellesskap og se hvordan jeg ligger an, det har vært kult å se på det. Men så krever jo det også at man tenker på appen når man setter seg ned for å jobbe. Jeg vet at jeg har jobbet mer med skole enn det jeg har fått logget. Men om jeg går inn på appen og ser at jeg begynner å tape blir jeg motivert, så motivasjonen ligger litt der. Egentlig hver gang det står at jeg taper så blir jeg motivert til å bruke den.

AS: Var det noen features som virket mot sin hensikt, som var demotiverende?

Ben: Ja, litt det jeg nevnte tidligere med arkiverte mål. Det opplevde jeg som demotiverende. Og det følte litt demotiverende med stopwatch funksjonen, siden jeg ikke skjønnte helt at den ikke fungerte.

AS: Hva synes du om utfordring-rubrikken? Var den motiverende? Hvorfor/hvorfor ikke?

Ben: Den synes jeg er kul, det er veldig tydelig om den er grønn eller rød, det er bra å forholde seg til. Men det at applikasjonen bruker så mye poeng og så er det timer, er litt forvirrende, kanskje bare en av delene. Det hadde vært enklere hvis det bare var poeng, men skjønner at det kanskje er bedre ift at man skal sette mål. Det er litt dumt at man kan endre på challengen, og jeg fant jo ut at man kan endre antall timer til de timene jeg har etterpå. Jeg havner jo litt fort i et modus, kanskje nettopp når jeg skal unngå prokrastinering, så har man muligheten til å hoppe inn her og tenke 'hvilke limits er det her'. Kanskje spesielt for meg siden jeg er it-nerd og ønsker å limit-teste tingen og se 'fungerer dette'?

AS: Følte du at applikasjonen manglet noe? I så fall, hva?

Ben: Det er ganske vanlig med en enkel kommentar-feature, e.l., det at man kan ha en slags dialog med den man utfordrer. For da kan man knive litt med den sekseren med øl, eller si at man skal ta et skippertak i morgen og da ligger den andre tynt an. Og da kan den

andre få notifications. At man kan nudge eller gjøre noe sånt for litt ekstra motivasjon. Fint å kunne ha profilbilder og kallenavn, litt mer humoristisk preg over det.

Tema: bruk av applikasjonen. Mål: finne ut av bruksmønsteret til testerene

AS: Hvor mye brukte du applikasjonen?

Ben: Det står her at jeg har tracket 9 t og 26 minutter, brukt den innimellom og gått inn og sjekket. Det er veldig sporadisk hva jeg går inn og sjekker der. Men jeg har jo vært innom ca 12 ganger kanskje, vet ikke helt.

AS: Var det noe forskjell på hvor mye du brukte applikasjonen i starten og i slutten av testperioden?

Ben: I starten før jeg fikk kontakter glemte jeg det litt, men med en gang jeg fikk venner følte jeg at jeg brukte den en del. Det var kult når man så at man hadde blitt lagt til av andre. Føler ikke at det er to forskjellige konkurranser når jeg er i konkurranse med forskjellige venner, forholdene er de samme, det er ikke noe unikt på de ulike.

AS: Satt du deg et personlig mål?

Ben: Ja

AS: Lagde du en utfordring med en venn?

Ben: Ja

AS: Ble dere enige om en premie taperen skulle gi til vinneren?

Ben: Ja, en sekser med øl, men den er ikke innkassert enda, men jeg ligger veldig bra an nå.

AS: Tror du at dere kommer til å fortsette å bruke applikasjonen/konkurrere mot hverandre etter test-perioden nå for å se hvem som vinner?

Ben: Jeg tror nok kanskje at hvis vi skulle fortsatt å bruke den må nok bruken av appen bli mer seriøs på en måte. Per dags dato ser jeg jo at han andre jobber mye uten å tracke tid her. Og det har jo jeg kjent på også. Men det at man har en dropdown hvor jeg kan gå inn og endre på rewarden til noe annet uten at det endrer noe, jeg kan jo endre i siste øyeblikket til noe annet, gjør at man ikke føler den commitenten. Bedre om man må sende en request på det.

Tema: motivasjon. Mål: finne ut om testerene synes appen var motiverende

AS: Synes du det var gøy å bruke applikasjonen?

Ben: Jeg tror det hadde vært morsommere hvis den hadde blitt håndhevet helt, hvis man hadde interne regler fra start. Nå ble det litt sånn at man sender friend-request når man er fra hverandre, ikke noe videre oppfølgende dialog. Derfor det hadde vært kult med kommentarfeltet. Med skrittelleren får jeg jo varsel hver gang mamma leder over meg og da blir jeg motivert. Det at den ikke brukes aktivt går utover motivasjonen der.

AS: Har du jobbet mer, mindre eller likt når du har brukt applikasjonen, som du hadde gjort i denne perioden uten applikasjonen?

Ben: Har tenkt mer på det når jeg faktisk aktiverte den, så jeg har hvertfall ikke jobbet noe mindre. Og jeg har jo tenkt på det når jeg går inn på den og ser at den tracker tid. Jeg forholder meg likt til appen som hold, som gjør at jeg stopper å gjøre noe annet, og begynner å gjøre det jeg faktisk tenkte når jeg satt på timeren. Så jeg vil jo si at den har fått meg til å jobbe mer, den tar meg litt i nakkeskinnet.

AS: Har det å bruke applikasjonen endret noe på din opplevelse av å arbeide med skole denne uken? Evt. tror du appen vil endre noe på din opplevelse av å arbeide med skole?

Ben: Ikke slik jeg har brukt den nå, nå er det mer en bonus. En sekser med øl er på en måte heller ikke noe jeg hadde inkassert i skolesammenheng. Det hadde kanskje vært mer hensiktsmessig med ukentlig utfordring, et ukesperspektiv, også vet jeg at det er bolletorsdag. Det hadde vært kult å planlegge noe sånt, og få det til å dreie seg rundt det. Det at man kanskje kan hente seg inn igjen de neste ukene. Men sånn som det er brukt nå føler jeg ikke helt broen, mellom systemet og skole.

AS: *Hvis du hadde brukt applikasjonen over en lengre periode, tror du at det hadde påvirket læringsutbyttet ditt?

Ben: Ja, i den grad at man kan ta den antakelsen at hvis man legger fra seg mobilen så gjør man mer skole. I praksis er det ikke sikkert, fordi når man blir distraheret er det kanskje et tegn på at man trenger pause, noe jeg da ikke tar hvis jeg bruker appen. Så akkurat det kan variere veldig fra dag til dag. Er det klokken tre har det ikke så mye å si, men er det halv ni er det ganske viktig at jeg ikke begynner å sløve allerede der. Så jeg er vel enig i at jeg hadde fått et større læringsutbytte da, til en viss grad.

AS: Ble du mest motivert av å sette deg et personlig mål eller å lage en konkurranse med en venn?

Ben: Jeg er veldig konkurransedrevet, så i mye større grad det egentlig. Kanskje når alt er en intern faktor, hvis applikasjonen er kombinert med at man har en avtale med narvesen om å få en billigere is, så jeg ikke bare setter det opp mot meg selv men også mot andre. Ingenting som stopper meg fra å gjøre ting nå uten at jeg har fortjent det.

Dato og tid: Torsdag 11.april, 10:00

Lokasjon: Digital, over Zoom

Intervjuer: Anniken Syvertsen

Intervjuobjekt (alias): Bill

Starte med en åpen dialog for å komme i gang:

AS: Hvordan synes du testingen har gått?

Bill: Det har gått fint, de gangene jeg har husket å sette den på så har det vært greit. Det har vært gøy å kjempe mot en venn, men samtidig så har jeg lagt merke til at det er kanskje funksjonalitet appen som ikke er laget enda. Si at jeg har hatt på i to timer også har konkurransen gått ut ila de to timene. Den andre har hatt på en time også har han vunnet fordi hans har gått ut etter en time, mens min ikke hadde logget tiden da konkurransen var over. Ellers har det vært greit å teste. Jeg har ikke prøvd ut stopwatch, siden den ikke fungerte med låst skjerm.

Tema: studie-rutiner. Mål: få bakgrunnsinformasjon om studentens studievaner

AS: Kan du beskrive en typisk studieuke for deg?

Bill: Det er veldig varierende, men jeg prøver å komme meg opp tidlig hver dag. Har på alarm mellom 7 og 7:30 hver dag. Står opp og spiser frokost. Litt forskjellig om jeg sitter hjemme og jobber frem til lunsj, spiser lunsj og så stikker til skolen og jobber videre der, eller om jeg stikker på skolen med en gang på morgenen. Liker å tenke selv at jeg er flink til å sitte og være fokusert, men ikke alltid like lett på en master sal hvor det er utrolig koselig å sitte å snakke med andre. Effektive arbeidstimer om dagen er kanskje 5 selv om jeg sitter der og jobber i 8 timer. Så er det hjem og spise middag, og så er jeg stort sett ferdig da. Hender at jeg sitter litt etter middag, men pleier å prøve å ta fri på kvelden så ikke det blir altfor mye.

AS: Hvordan planlegger du og jobber med oppgaver?

Bill: Gjør ikke så mye planlegging, veldig dårlig på det. Tenker at 'nå må jeg gjøre det' og da gjør jeg det. Tar det litt som det kommer, 'nå er det dette som må gjøres, så da gjør jeg det'. Nå f.eks. har jeg nettopp gjort et studie selv, og da er det det jeg har gjort. Jeg har ikke tenkt på hva som er neste steg når jeg er ferdig med det. Litt mer sånn, 'nå har jeg lyst til å gjøre dette'. Velger oppgaver som er litt morsomme, så ikke jeg går helt i bønn. Så jeg ikke kjeder meg altfor mye på en måte.

AS: Hva motiverer deg?

Bill: Godt spørsmål. Jeg blir motivert av tanken på å gjøre det bra. Selv om master karakteren ikke har så mye å s å nå siden jeg har fått jobb. Så en er sikret så lenge jeg står på masteren. Jeg har motivasjon til å få en grei karakter likevel. Vil ikke ha en E eller D på en måte. Vil ha en god karakter å kunne vise til. Spesielt hvis jeg senere skal ta en phd, så må man jo ha en grei karakter. Ellers så synes jeg det bare er gøy å kunne vite selv at jeg har klart å få en A eller en B på masteroppgave. Det er det som motiverer meg mest, det å kunne vite selv at her har jeg gjort et godt arbeid. Og at jeg har en karakter som beviser det.

AS: Pleier du å sette deg noen mål? I så fall hva slags?

Bill: Det er jeg ganske dårlig på egentlig, det å sette meg mål. Jeg setter meg litt frister, kanskje ila den dagen skal jeg ha gjort dette. Men ikke sånn dagsmål i at 'nå skal jeg ha lest fem artikler ila denne uken' eller 'skrevet ti sider ila disse tre dagene'. Ikke sånne mål. Mer sånn at 'ila den dagen skal jeg være ferdig med den oppgaven, eller det jeg jobber med nå'. Jeg har litt sånn interne frister. Mtp appen så har jeg opprettet egne mål, men det har vært mer sånn 'nå skal jeg jobbe i to timer' mål, og ikke sånn 'jeg skal bli ferdig med dette på to timer mål'.

AS: Er det noe forskjell på hvordan du arbeider i ulike emner? Hva, og hvorfor?

Bill: Helt klart. Det avhenger jo også av emnene. Som f.eks. matte-emner er det jo bare oppgaveløsning og praktisk. Sitter bare og løser oppgaver og ser på eksamener og løser de oppgavene. Men i si algdatt som er mer teoretisk er det mer lesing og ikke oppgaveløsning. Men dagene blir på en måte det samme likevel. Istedenfor å lese løser jeg oppgaver, eller istedenfor å løse oppgaver så leser jeg. Programmeringsemner: der er det litt annerledes, da kan jeg gjerne sitte fra 8-8 og bare progge, siden jeg synes at det er så gøy. Sitter og ser på netflix også bare plutselig tenker jeg shit nå har jeg noe jeg kan implementere. Det er litt annerledes med de emnene enn matte og mer teoretiske emner.

AS: Har arbeidsformen og holdningene dine, eller tilnærmingen til studiet, endret seg i løpet av studiet?

Bill: Oi. Jeg tror nok kanskje det. Det varierer med årene. Sånn, siste året på bachelor var jeg kanskje mer gira på å gjøre det bra, siden det var siste året på bachelor, enn hva jeg gjorde første og andre året. Jeg var jo såklart gira på å gjøre det bra, men jeg tok litt lettere på det i 1 og 2 enn det jeg gjorde i 3.klasse. Også kom jeg jo over på master. På master har jeg jobbet utrolig mye mer enn hva jeg gjorde på bachelor. Det føles litt proffere, bedre med master, jeg føler at jeg må prestere litt bedre enn hva jeg gjorde på bachelor. Det har vært en ganske stor omvendning fra bachelor til master rutinemessig. På bachelor sov jeg til jeg våknet og gadd ikke så mye mer. Orket ikke ha på alarm med mindre det var forelesning. Master har vært forelesninger og øvinger pluss ekstra, så jeg har stått opp åtte hver dag.

AS: Det virker litt som at, basert på det du sier, at selv om om master ofte er mer selv-disponering av tid, så har du vært strengere med rutiner og stå opp?

Bill: Ja, det stemmer. Det kan ha noe med at jeg flyttet inn med kjæresten og blir påvirket av henne. Legge seg tidlig, stå opp tidlig. Jeg har noen som pusher meg. Har vært strengere på rutiner selv om det har vært mer selvstudie og selvdisiplin. Påvirket av samboeren som har gode rutiner. Og det er litt sånn med appen når man har konkurranse, gøy å ikke jukse. Når man setter den på, så er den på og da skal man jobbe. Og det er gøy. Konkurranse.

Tema: lignende prestasjonsmålede applikasjoner. Mål: finne ut om testeren har erfaring med måle prestasjoner

AS: Har du noe erfaring med prestasjonsmålede applikasjoner?

Bill: Jeg har vært litt borti hold, den er jo litt lik. Problemet med den er at den låser telefonen din så du ikke kan bruke telefonen for da slutter timeren. Jeg er mer sånn når jeg har på en timer så gjør jeg så godt jeg kan for å la telefonen ligge. Men jeg vil ha muligheten til å kunne sjekke opp noe på telefonen under jobbing selv om timeren går. Bruker den mest hvis jeg blir minnet på det. På sal kan man jo se hvem som holder i nærheten. Har vært litt borti den appen hvor man skal plante et tre. Har vært litt borti den, men ikke brukt den veldig aktivt. Bruker det kun hvis noen minner meg på det.

AS: Hva er det du hovedsakelig har brukt de to appene til?

Bill: Hold har vært for premien sin del, du får poeng du kan bruke på flakslodd og sånt. Men hovedsakelig så er det det at det er gøy å kjempe mot de andre på sal, og å gjøre det sammen. Jeg har også prøvd å bruke det for å hjelpe meg til å faktisk sitte å jobbe, men vet ikke om det faktisk hjelper eller om jeg bare tenker på om den er ferdig snart. Har brukt for å prøve å tvinge meg selv til at 'nå skal du jobbe'.

AS: Har du brukt/bruker du Strava?

Bill: Ja, det har jeg også brukt, men veldig lite. jeg er ikke ute og løper og står på ski eller sykler eller noe som helst. Jeg har prøvd den på en løpetur.

AS: Ble du motivert da du brukte den?

Bill: Nei, jeg ble ikke motivert når jeg brukte den, men når vi snakker om sånne apper har jeg brukt Fitness appen som følger med iPhone. Jeg har skaffet meg klokke. Da er det veldig gøy å sette på gåtur når jeg går til skolen. Da blir det inne i den appen, og jeg kan lukke exercise ringen. Det synes jeg er gøy. Klokken sier ifra hver time opp og stå. Og det er veldig gøy. Jeg synes det er veldig gøy å lukke ringene, f.eks. at det står at jeg har ti min igjen å gå for å lukke ringen og da vil jeg jo gå for å lukke den. Kommer kanskje an på hvordan type prestasjon det er, om det er å gå en tur eller sitte å jobbe en time. Det er lettere for meg å få en sånn prestasjon av en halvtimes gåtur enn en halvtimes jobbing. En halvtime jobbing krever mye mer konsentrasjon og selvdisciplin enn en halvtimes gåtur. Det kan være derfor jeg har vært mer opptatt av fitness-appen enn andre studieprestasjonsapper som hold. Jeg skal ta en rask titt gjennom telefonen og se om jeg har noen. Ja, den helse-appen! Det er gøy å prøve å få skritt ganske høyt opp hver dag. Se at jeg har vært litt aktiv faktisk. Se hvordan vo2 maks endrer seg bare ved å være flink til å gå turer. Og at appen sier ifra at nå du er i bedre form og kroppen din er fin. Basert på disse sirklene du kan lukke hver dag.

Tema: prokrastinering og utsetting av arbeid. Mål: finne ut av behovet for en slik app for den personen som testet den

- Hvor enig er du i denne påstanden: "Jeg utsetter ofte skolearbeid"
 - helt enig
 - veldig enig
 - nokså enig
 - verken eller
 - **litt uenig**
 - ganske uenig
 - helt uenig
- Hvor enig er du i denne påstanden: "Jeg synes det er lite motiverende å jobbe med skole"
 - helt enig
 - veldig enig
 - nokså enig
 - verken eller
 - litt uenig
 - **ganske uenig**
 - helt uenig
- Hvor enig er du i denne påstanden: "Jeg utsetter ofte skolearbeid fordi jeg jobber bedre under press"
 - helt enig
 - veldig enig
 - **nokså enig**
 - verken eller
 - litt uenig
 - ganske uenig
 - helt uenig
- Hvor enig er du i denne påstanden: "Hvis det hadde vært hyppigere frister, hadde jeg jobbet mer jevnt med skole og ikke utsatt like mye"
 - helt enig
 - **veldig enig**
 - nokså enig

- verken eller
- litt uenig
- ganske uenig
- helt uenig
- Som student, har du følt på at det har vært problematisk med prokrastinering? At det har hatt negative konsekvenser for prestasjonene dine?
 - Nei, selvom jeg har prokrastinert så har jeg alltid kommet meg i mål. Det har blitt noen dager som har blitt mye stress, men det er konsekvensene av prokrastinering. At man får to dager med stress. Men så får man jo også to uker med lite stress, så det er litt balanse. Jeg har alltid kommet i mål uansett.
 - Man får noe tid med mye stress, men også tid med ikke så mye stress.

Tema: applikasjonen. Mål: finne ut om brukergrensesnitt fungerte greit

AS: Hvordan synes du det var å forstå hvordan appen fungerte?

Bill: Det var veldig greit. Det var en guide i starten som forklarte hva poenget med appen var. Timeren var veldig lett å forstå. Det er ikke noe sånn 'trykk her for å endre tiden', men det er veldig intuitivt at man trykker på tiden for å endre på tiden. Fellesskapet er veldig fin. Jeg ble litt forvirret når jeg skulle legge til venner, pga plusstegnet på samarbeid, fordi jeg så ikke plussen på venner. Men annet enn det var det veldig lett å forstå. Noen ganger har jeg vært litt forvirret når timeren har vært i gang, også skjønte jeg etterhvert at disse utfordringene og målene oppdateres først når timeren går ut. Når jeg er inne og ser på timeren på en oppdatering, også så står det at han andre leder selv om han ikke tracker tid og jeg har to timer på timeren. Men jeg skjønte etterhvert at det var fordi jeg måtte få poengene først. Lurte litt på hvor det hadde blitt av målet som hadde gått ut, men fant den inne på profil etterhvert. I tillegg så var det sånn at jeg satt opp at den skulle gå ut dagen etterpå eller dagen etterpå, og tenkte at jeg da hadde ut dagen, men så var det jo 48 timer etter jeg hadde startet den. Så jeg trodde jeg hadde flere timer enn jeg hadde, så da satt jeg kanskje opp litt for høyt mål for meg selv. Det var ikke ut dagen så det var kanskje mest forvirrende. Men ellers veldig bra, den har krasjet én gang. Men sendte en feedback på det.

AS: Hvilke features, hvis det var noen, fant du motiverende?

Bill: Utfordringene. Synes det er morsommere å konkurrere mot andre enn meg selv. Det var mer motiverende å sitte å jobbe når jeg hadde en konkurranse mot noen andre, enn bare en konkurranse med meg selv.

AS: Var det noen features som virket mot sin hensikt, som var demotiverende?

Bill: Ingen features, men lurte på om det er en bug. Var vel en gang jeg hadde hatt på timeren en god stund, også fikk jeg null poeng.

AS: Hva synes du om utfordring-rubrikken?

Bill: Den var veldig fin. Utrolig, hva skal jeg si, du ser med en gang hvordan du ligger an og hvor mye du har igjen. Den er lett å forstå. Og, ja har ikke så mye mer å si enn det. Har ikke prøvd inn så mye å gå inn å endre på en utfordring. Men selve denne siden synes jeg var intuitiv.

AS: Synes du at den var motiverende?

Bill: Hmm. Vet ikke om den er motiverende, det kommer litt an på for min del. Sånn, nå leder jeg med 2.75 timer her, og da er det litt sånn 'okei jeg leder', men hvis han leder så er jeg sånn okei jeg må ta han igjen. Blir mer motivert hvis den jeg spiller mot leder, hvis siden viser at han andre sin bar er lengre enn min og jeg må ta igjen og få min bar grønn. Når jeg leder er det ikke like motiverende. Men hvis han leder er det motiverende.

AS: Følte du at applikasjonen manglet noe? I så fall, hva?

Bill: Tror ikke det er noe jeg har tenkt på at mangler, nei.

Tema: bruk av applikasjonen. Mål: finne ut av bruksmønsteret til testeren

AS: Hvor mye brukte du applikasjonen?

Bill: 10 timer står det her. Jeg brukte den kanskje annenhver dag. Men de dagene jeg brukte den så brukte jeg den et par timer hver gang. Grunn til at jeg ikke brukte den noen dager var at jeg glemte det, og måtte bli mint på å bruke den.

AS: Satt du deg et personlig mål?

Bill: Ja

AS: Lagde du en utfordring med en venn?

Bill: Ja, eller det var vennen som lagde en utfordring som jeg ble lagt til i.

AS: Ble dere enige om en premie taperen skulle gi til vinneren?

Bill: Ja

AS: Ble du motivert av premien?

Bill: Hmm. Nei, men det kan være fordi jeg ikke tenkte at den premien kom til å bli gitt til den som vant uansett hvem som vant. At vi har bare en konkurranse oss i mellom uten noen premie egentlig. At premien er mer at du vinner og har lov til å si at du vant. Konkurransen og premien er mer det at man vinner.

AS: Mer motivert av å slå den andre av at man faktisk vinner en premie?

Bill: Mhm, det stemmer. Men tror at hvis vi hadde blitt enige om at den premien skal noen gi uansett, så hadde det motiverende å være med i en utfordring. Si at premien hadde vært at den andre skulle gi en burger, og vi hadde vært enige om at dette skulle skje, så hadde jeg jobbet hardt for å vinne. Grunnen til at vi ikke tok det så høytidelig var at telefonen ikke ble låst med timeren, så vi har ingen mulighet for å sjekke at den andre ikke jukset.

AS: Jukset du?

Bill: Innimellom, ja, men jeg var stort sett flink til å ikke bruke telefonen. Jeg har en tendens til å bare trykke på skjermen hele tiden for å se at det er noe nytt, men jeg anser det ikke som juks å se på notifikasjoner. Juks er mer å åpne telefonen å gå inn på snapchat og sånt. Men var stort sett flink til å ikke gjøre det. Jeg glemte litt at den var på noen ganger, og da brukte jeg telefonen. Litt sånn ufrivillig juks.

Tema: motivasjon. Mål: finne ut om testeren synes appen var motiverende

AS: Synes du det var gøy å bruke applikasjonen?

Bill: Ja, det var gøy å kjempe mot andre. Mot meg selv var det ikke like gøy. Men det er gøy når du har noen å kjempe mot. Jeg likte også at man får timer på sitt eget mål og utfordring samtidig. Det er ikke sånn at du må velge en av de, det går på begge.

AS: Har du jobbet mer, mindre eller likt når du har brukt applikasjonen, som du hadde gjort i denne perioden uten applikasjonen?

Bill: Likt.

AS: Har det å bruke applikasjonen endret noe på din opplevelse av å arbeide med skole denne uken? Evt. tror du appen vil endre noe på din opplevelse av å arbeide med skole?

Bill: Det kan nok være hvis det hadde blitt en rutine. Komme på skolen og sette på den med en gang, og setter si tre kvarter og times intervaller også et kvarter pause og så på igjen. Det å få det som en rutine hadde hjulpet meg, tror jeg. Men, det var litt vanskelig å komme inn i rutinen. Spesielt på en master sal, selv om jeg setter den på setter ikke resten på, og da blir jeg fort forstyrret og vil være med i samtalen. Tror alle på sal måtte vært enig om at nå skal

vi bruke appen. Eller, hvis jeg hadde vært hjemme hele testperioden kan det hende jeg hadde kommet inn i rutinen. Da hadde jeg nok fått jobbet bedre ved hjelp av appen.

AS: Hvis du hadde brukt applikasjonen over en lengre periode, tror du at det hadde påvirket læringsutbyttet ditt?

Bill: Det er vanskelig å svare på. Hvis jeg bruker appen så kommer jeg nok til å jobbe mer, men jeg vet ikke om det nødvendigvis sier at jeg får høyere læringsutbytte eller om jeg bare blir raskere ferdig. Tror jeg uansett bare hadde jobbet til jeg hadde blitt ferdig. Jobber mer effektivt, men ikke mer. Like mye over kortere tid.

AS: Hva tenker du om denne applikasjonen i forhold til hold?

Bill: Den er fin, men det er dette med premiene. Det går litt mer på personen enn appen. Premien er litt mer sånn gitt at det faktisk har blitt premier, i hold kan du bruke premiene til å direkte hente premien. Mens her er premien gitt ut i fra at begge er inneforstått med at man kan gi premien uansett. Likte bedre at man kunne kjempe mot hverandre, enn at man kan se hvem som holder i nærheten. Det er gøy, men det blir ikke det samme som konkurranser og utfordringer.

Dato og tid: Torsdag 7.april, 13:00

Lokasjon: Digitalt, over Zoom

Opptak: Ja

Intervjuer: Anniken Syvertsen

Intervjuobjekt (alias): Clara

Starte med en åpen dialog for å komme i gang:

AS: Hvordan synes du testingen har gått?

Clara: Synes det har vært gøy. Jeg har brukt telefonen mye mindre nå enn før. Jeg var litt innstilt på at jeg ikke skulle bruke den så mye siden jeg har vært på jobb også, og jeg startet på jobb samme dag som jeg startet å teste den. Så det som har vært mest stress å huske på å sette på.

Tema: studie-rutiner. Mål: få bakgrunnsinformasjon om studentens studievevaner

AS: Kan du beskrive en typisk studieuke for deg?

Clara: Hvis jeg har mye å gjøre så liker jeg godt å ha sånn at jeg jobber med noe i 45 minutter også har 15 min pause. Også gjør jeg det kanskje i fire intervaller, for da er jeg sliten. Hvis jeg ikke har noe konkret å jobbe med er det kanskje ikke like strukturert, da leser jeg litt her og der. Eller hvis jeg blir stresset over at jeg ikke har gjort noe så haste leser jeg litt på kvelden for å få god samvittighet.

AS: Hvordan planlegger du og jobber med oppgaver?

Clara: Planlegger ikke så mye, jeg bare starter.

AS: Hva motiverer deg?

Clara: Det er jo for å få resultater da og at man ikke vil gjøre det dårlig egentlig.

AS: Pleier du å sette deg noen mål? I så fall hva slags?

Clara: Nei.

AS: Er det noe forskjell på hvordan du arbeider i ulike emner? Hva, og hvorfor?

Clara: Ja, det kommer an på sånn de fagene hvor man har konkrete oppgaver så liker jeg å bruke mest tid på det. Også hvis det ligger eksamensoppgaver ute så gjør jeg de. Men hvis det er mer teoretiske fag så noterer jeg fra powerpoint og leser litt artikler og sånt.

AS: Har arbeidsformen og holdningene dine, eller tilnærmingen til studiet, endret seg i løpet av studiet?

Clara: Eh, nei jeg føler på en måte at jeg alltid har brukt den samme arbeidsstrukturen. Kanskje litt mer avslappet nå enn jeg var i starten, hehe.

Tema: lignende prestasjonsmålede applikasjoner. Mål: finne ut om testeren har erfaring med måle prestasjoner

AS: Har du brukt/bruker du Strava?

Clara: Ja, har brukt det en gang. Logget én økt. Mest for å ha en unnskyldning for å ta et bilde med en jeg løp sammen med, også slettet jeg appen etterpå. Det var ikke motivasjon til å løpe.

AS: Har du brukt hold?

Clara: Ja, det synes jeg faktisk var motiverende i en periode. Helt til jeg aldri vant noen konkurranse, da slettet jeg appen.

AS: Hva brukte du appen til?

Clara: Det var skolearbeid da.

AS: Hvilke features ble du motivert av

Clara: Det var mest at man kunne få poeng, jeg prøvde å vinne et gavekort. Også brukte den en gang for å kjøpe kaffe på seven eleven.

AS: Har du brukt noen andre apper til å sette deg mål? (trening, sparing, produktivitet e.l

Clara: Jeg har jo den fitbit-appen. Jeg har sluttet å bruke fitbiten fordi jeg ikke klarer å gå 10 000 skritt om dagen. Men jeg vet egentlig ikke om jeg blir så motivert av den egentlig.

Tema: prokrastinering og utsetting av arbeid. Mål: finne ut av behovet for en slik app for den personen som testet den

- Hvor enig er du i denne påstanden: "Jeg utsetter ofte skolearbeid"
 - helt enig
 - veldig enig
 - nokså enig
 - verken eller
 - litt uenig
 - **ganske uenig**
 - helt uenig
- Hvor enig er du i denne påstanden: "Jeg synes det er lite motiverende å jobbe med skole"
- kommer an på faget,
 - helt enig
 - veldig enig
 - nokså enig
 - verken eller
 - **litt uenig**
 - ganske uenig
 - helt uenig
- Hvor enig er du i denne påstanden: "Jeg utsetter ofte skolearbeid fordi jeg jobber bedre under press"
 - helt enig
 - veldig enig
 - nokså enig
 - verken eller
 - litt uenig
 - ganske uenig
 - **helt uenig**
- Hvor enig er du i denne påstanden: "Hvis det hadde vært hyppigere frister, hadde jeg jobbet mer jevnt med skole og ikke utsatt like mye"
 - helt enig
 - veldig enig
 - nokså enig
 - **verken eller**
 - litt uenig
 - ganske uenig
 - helt uenig

AS: Som student, har du følt på at det har vært problematisk med prokrastinering? At det har hatt negative konsekvenser for prestasjonene dine?

Clara: Nei, jeg føler egentlig ikke at jeg prokrastinerer noe. Jeg liker bedre å være tidlig ute. Jeg jobber veldig dårlig under press. Det er mer at jeg jobber masse i starten og på slutten når fristen nærmer seg så bare... gir jeg opp.

Tema: applikasjonen. Mål: finne ut om brukergrensesnitt fungerte greit

AS: Hvordan synes du det var å forstå hvordan appen fungerte?

Clara: Eneste jeg ikke forsto var forskjell på timer og stopwatch. Det jeg mest ikke skjønnte var at den ene ikke fungerte. Det forsto jeg ikke. Jeg brukte bare den som teller ned.

AS: Hvilke features fant du motiverende?

Clara: Det var gøy å ha sånn veddemål. Det var det.

AS: Var det noen features som virket mot sin hensikt, som var demotiverende?

Clara: Nei.

AS: Hva synes du om utfordring-rubrikken? Var den motiverende? Hvorfor/hvorfor ikke?

Clara: Den var bra. Den var motiverende, for man vil jo lede.

AS: Følte du at applikasjonen manglet noe? I så fall, hva?

Clara: Nei, kanskje sånn at hvis man ikke har venner som har appen, at man kan få noe utenom venner og på en måte.

AS: Er det noe som hadde fått deg til å bruke applikasjonen mer?

Clara: Nei, samme greia da kanskje, at man kunne bruke poengene sine til litt andre ting også enn å bare konkurrere.

Tema: bruk av applikasjonen. Mål: finne ut av bruksmønsteret til testeren

AS: Hvor mye brukte du applikasjonen?

Clara: Jeg har brukt den sånn fra 8-4 mandag, tirsdag, onsdag også litt i dag

AS: Var det noe forskjell på hvor mye du brukte applikasjonen i starten og i slutten av testperioden?

Clara: Nei

AS: Satt du deg et personlig mål?

Clara: Nei. Burde jeg kanskje det?

AS: Neida det går veldig fint. Lagde du en utfordring med en venn?

Clara: Ja

AS: Ble dere enige om en premie taperen skulle gi til vinneren?

Clara: Ja, middag.

AS: Ble du motivert av å vinne noe eller tape noe?

Clara: Jeg tror det var mer at jeg har lyst til å lede, enn selve premien, som motiverer meg.

Tema: motivasjon. Mål: finne ut om testeren synes appen var motiverende

AS: Var appen motiverende?

Clara: Ja, det vil jeg si.

AS: Hva ved applikasjonen var motiverende?

Clara: Det jeg synes var digg, sammenlignet med hold - appen, fordi hold er sånn med en gang du går inn på telefonen så fucker du opp, men her skal det mer til før den slutter. Så jeg har kunnet bruke telefonen litt. Det hørtes ut som negativt, men jeg synes det var bra at man ikke ødelegger med en gang.

AS: Synes du det var gøy å bruke applikasjonen?

Clara: Ja.

AS: Har du jobbet mer, mindre eller likt når du har brukt applikasjonen, som du hadde gjort i denne perioden uten applikasjonen?

Clara: I går følte jeg faktisk at jeg jobbet mer, for da satt jeg på skolen og da hadde jeg nok scrollet mer på instagram hvis jeg ikke hadde hatt den.

AS: Har det å bruke applikasjonen endret noe på din opplevelse av å arbeide med skole denne uken? Evt. tror du appen vil endre noe på din opplevelse av å arbeide med skole?

Clara: Det kommer veldig an på. Fordi når jeg først jobber med skole er det fordi jeg må jobbe med skole. Men det gjør kanskje at man er mer effektiv og får gjort mer på kortere tid. At man ikke tar opp telefonen hele tiden.

AS: Hvis du hadde brukt applikasjonen over en lengre periode, tror du at det hadde påvirket læringsutbyttet ditt?

Clara: Ja, kanskje. Man blir jo veldig distraheret av telefonen. Det hadde sikkert blitt mer vane å ikke bruke den mens man studerer.

AS: Etter en endt utfordring, hvis den hadde rukket å bli ferdig, tror du at du hadde hatt lyst til å lage en ny utfordring?

Clara: Ja.

Dato og tid: Fredag 8.april, 11:00

Lokasjon: Digitalt, over Zoom

Opptak: Ja

Intervjuer: Anniken Syvertsen

Intervjuobjekt (alias): Ida

Starte med en åpen dialog for å komme i gang:

AS: Hvordan synes du testingen har gått?

Ida: Jeg synes det har vært bra. Jeg har jo på en måte brukt den hold-appen en del før. Det eneste var at jeg synes det var vanskelig å huske på å restarte den hele tiden, så noen dager så brukte jeg den ikke like mye. Jeg har iallefall prøvd de ulike funksjonene og sånt, og sett hva vi likte best. Så jeg synes det har vært greit. Jeg har fått brukt den en del.

Tema: studie-rutiner. Mål: få bakgrunnsinformasjon om studentens studievaner

AS: Kan du beskrive en typisk studieuke for deg?

Ida: Eh, det er jo litt intenst akkurat nå siden det nærmer seg innlevering, men vanligvis er jeg på skolen rundt ni, også sitter jeg gjerne til syv. Også ja, jeg føler egentlig dagene er helt like i ukedager og helger. Men ja, det er jo en veldig intensiv periode nå. Vanligvis er jeg kanskje her bare 8-4 eller 9-5 eller noe sånt.

AS: Hvordan planlegger du og jobber med oppgaver?

Ida: Er veldig på å skrive to-do lister, hver dag skriver jeg liksom to-do lister, både for uken, men og dag for dag. Elsker å skrive lister. Så det er egentlig mest sånn jeg planlegger. Og krysser ut når jeg har gjort det.

AS: Hva motiverer deg?

Ida: Tror det som motiverer meg mest er å krysse ut ting som jeg har skrevet ned at jeg skal gjøre. Jeg tar alltid sånne små ting som jeg krysser ut ofte. Og ja, bli ferdig med det jeg skal

AS: Pleier du å sette deg noen mål? I så fall hva slags?

Ida: Jeg setter meg ofte ukentlige mål, sånn innen uken skal jeg bli ferdig med det og litt større ting. Men det er sjelden jeg kommer i mål med alt. Men det er for å holde litt struktur i arbeidet.

AS: Blir du demotivert hvis du ikke kommer i mål med det du har satt deg som mål?

Ida: Litt der og da, men jeg glemmer det ganske fort.

AS: Er det noe forskjell på hvordan du arbeider i ulike emner? Hva, og hvorfor?

Ida: Jeg er jo flinkere å jobbe i emner jeg interesserer meg for og som jeg liker. Men nå har jeg jo bare en oppgave jeg arbeider med. Men da merker jeg at det er forskjell på de ulike delene på oppgaven. Noen deler jobber jeg bedre med enn andre.

AS: Har arbeidsformen og holdningene dine, eller tilnærmingen til studiet, endret seg i løpet av studiet?

Ida: Jeg tror jeg brukte mye tid de første årene på å jobbe på måter som ikke fungerte så bra for meg. Jeg brukte veldig mye tid på å lære meg noe som jeg kunne brukt kortere tid på. Jeg tror jeg har blitt mer effektiv sånn sett, at jeg funnet måter å jobbe på som fungerer. I begynnelsen var det antall timer som betydde noe, hvis jeg satt 8 timer så var jeg fornøyd. Nå er det mer sånn at hvis jeg har gjort like mye på fem timer så er det greit på en måte.

Tema: lignende prestasjonsmålede applikasjoner. Mål: finne ut om testeren har erfaring med måle prestasjoner

AS: Har du brukt hold?

Ida: Ja, har brukt det før, men datt litt ut av det. Den har jeg brukt, også har jeg brukt mye en app innenfor trening. Jeg synes det er litt motiverende å kunne se hva du har gjort og ja. Bruker å se på hvor mange skritt jeg tar og sånt.

AS: Hvilken app er det du bruker til dette?

Ida: Fitbit appen. Men det er egentlig kun de to.

AS: I fitbit-appen, hva er det du blir motivert av?

Ida: Veldig om skritt, at jeg kan se hvor mange skritt jeg har gått. Og sånn aktive minutter, at man kan registrere økten og sånt.

AS: Hva med Hold, hva var det som gjorde at du ble motivert til å bruke den?

Ida: Det begynte som en greie hvor jeg kunne se og registrere hvor mange effektive timer jeg faktisk hadde hatt. Og at det var sånn at at jeg ikke kunne ta frem mobilen. At det står liksom 'ti minutter igjen' og da jobber jeg ti minutter før jeg tar pause. Tror ikke jeg ble så motivert av det gratis kaffe på narvesen greiene, for det hentet jeg aldri uansett. Så jeg brukte aldri poengene. Men jeg synes det var greit å kunne registrere hvor mye jeg hadde lest.

AS: Så du ble ikke så motivert av premiene, men mer av å se hvor mye du hadde gjort?

Ida: Ja

Tema: prokrastinering og utsetting av arbeid. Mål: finne ut av behovet for en slik app for den personen som testet den

- Hvor enig er du i denne påstanden: "Jeg utsetter ofte skolearbeid"
 - helt enig
 - veldig enig
 - nokså enig
 - verken eller
 - litt uenig
 - **ganske uenig**
 - helt uenig
- Hvor enig er du i denne påstanden: "Jeg synes det er lite motiverende å jobbe med skole"
- Spørs
 - helt enig
 - veldig enig
 - **nokså enig**
 - verken eller
 - litt uenig
 - ganske uenig
 - helt uenig
- Hvor enig er du i denne påstanden: "Jeg utsetter ofte skolearbeid fordi jeg jobber bedre under press"
 - helt enig
 - veldig enig
 - nokså enig
 - verken eller
 - litt uenig
 - ganske uenig
 - **helt uenig**

- Hvor enig er du i denne påstanden: "Hvis det hadde vært hyppigere frister, hadde jeg jobbet mer jevnt med skole"
 - **helt enig**
 - veldig enig
 - nokså enig
 - verken eller
 - litt uenig
 - ganske uenig
 - helt uenig

AS: Som student, har du følt på at det har vært problematisk med prokrastinering? At det har hatt negative konsekvenser for prestasjonene dine?

Ida: Ja, jeg jobber ikke så veldig bra under press, så de gangene det har skjedd at jeg har utsatt til siste liten så tror jeg at det har gått veldig utover kvaliteten på arbeidet. Men jeg vet veldig godt at jeg jobber dårlig under stress, så jeg pleier som regel å starte veldig tidlig.

Tema: applikasjonen. Mål: finne ut om brukergrensesnitt fungerte greit

AS: Hvordan synes du det var å forstå hvordan appen fungerte?

Ida: Jeg synes det var veldig rett frem egentlig, det var lett å forstå alle tingene.

AS: Hvilke features fant du motiverende?

Ida: Jeg synes den timeren var nice, for da leste jeg til den var ferdig uansett om jeg ville ha pause eller ikke. Også synes jeg det var veldig motiverende når jeg hadde sånne utfordringer. Jeg tror det var det som jeg likte veldig godt med den i forhold til hold; at man faktisk kan ha utfordringer med andre. Da ble jeg veldig sånn "okei jeg må vinne, liksom". Jeg er veldig sånn konkurransemenneske. Så det var egentlig kanskje mest den utfordring-delen som var nice.

AS: Var det noen features som virket mot sin hensikt, som var demotiverende?

Ida: Noen ganger så kom jeg i knappen før tiden hadde gått ut så da fikk jeg null poeng. Jeg er vandt med å lukke apper på telefonen ofte, så jeg lukket den uten vilje og da mistet jeg poeng. Så mest det å miste poeng.

AS: Hva synes du om utfordring-rubrikken? Var den motiverende? Hvorfor/hvorfor ikke?

Ida: Synes det var greit, noen ganger visste jeg at selv om vi hadde startet den nesten på likt, så visste jeg at vi lå akkurat likt an, så var det sånn at den andre ledet fordi hun hadde startet den litt før, kanskje et sekund før. Også tenkte jeg 'nei vi er likt'. Man så ganske lett hvem som ledet og hvor mange timer de hadde.

AS: Følte du at applikasjonen manglet noe? I så fall, hva?

Ida: Ikke som jeg har tenkt over egentlig. Ingenting som jeg har kommet på.

AS: Er det noe som hadde fått deg til å bruke applikasjonen mer?

Ida: Kanskje hvis det var sånn at man ikke kunne være på mobilen samtidig. Jeg merket at med en gang jeg hadde den på, men så satt jeg egentlig og hadde pause også ville jeg ikke stoppe den fordi da mistet jeg poeng. Men så leste jeg egentlig ikke effektivt.

Tema: bruk av applikasjonen. Mål: finne ut av bruksmønsteret til testeren

AS: Hvor mye brukte du applikasjonen?

Ida: Tror jeg brukte den nesten hver av de ukedagene etter at vi fikk den. Men det var mange ganger jeg glemte å restarte den også gikk det noen timer også gjorde jeg det ikke så mye da. Jeg prøvde iallefall å bruke den når jeg kom på det, og på slutten ble jeg flinkere til å ha på sånn nedtelling så jeg husket å restarte den og sånt.

AS: Var det noe forskjell på hvor mye du brukte applikasjonen i starten og i slutten av testperioden?

Ida: Tror jeg brukte den likt på starten og slutten, men jeg hadde en periode på midten hvor jeg brukte den litt mindre. Tror det bare var fordi jeg glemte det litt, men så var det hun andre som jeg brukte den mot som minte meg på det.

AS: Satt du deg et personlig mål?

Ida: Ja, men det var et større mål enn det jeg, så den sluttet jeg å bry meg om ganske tidlig, fordi jeg var sånn "jeg har ikke sjanse". Mest sånn utfordring.

AS: Lagde du en utfordring med en venn?

Ida: Ja

AS: Ble dere enige om en premie taperen skulle gi til vinneren?

Ida: Ja.

AS: Ble du mest motivert av å kunne vinne en premie eller å slå den andre personen?

Ida: Egentlig tror jeg, slå den andre personen. Fordi det var bare sånn, det var bare en brus. Så om jeg hadde fått en brus eller måtte gi en brus, så hadde ikke det vært så mye forskjell. Så tror jeg ble mer motivert av å slå den andre. Men det var på en måte et greit pluss.

Tema: motivasjon. Mål: finne ut om testerene synes appen var motiverende

AS: Var appen motiverende?

Ida: Ja, synes at jeg jobbet ganske godt de dagene vi liksom aktivt brukte den. Så jeg synes egentlig at det funket ganske bra.

AS: Hva ved applikasjonen var motiverende?

Ida: Jeg tror det egentlig bare var det konkurranseinstinktet som kicket inn, og når jeg så at hun andre ledet så var jeg sånn 'nei, nå skal jeg sitte fire timer til'. Så jeg tror egentlig det bare var det.

AS: Synes du det var gøy å bruke applikasjonen?

Julie: Ja, synes egentlig det.

AS: Har du jobbet mer, mindre eller likt når du har brukt applikasjonen, som du hadde gjort i denne perioden uten applikasjonen?

Ida: Tror jeg hadde jobbet like mange timer uansett, men jeg tror jeg jobbet mer effektivt de dagene jeg brukte den. Og liksom passet på at nå må jeg jobbe 45 minutter, fordi timeren går ut. Tror jeg hadde jobbet mer effektivt, men hadde nok jobbet like mange timer uansett.

AS: Har det å bruke applikasjonen endret noe på din opplevelse av å arbeide med skole denne uken? Evt. tror du appen vil endre noe på din opplevelse av å arbeide med skole?

Ida: Vet ikke helt, jeg føler på en måte at det har blitt en sånn utfordring så det har blitt litt gøyere, eller at det har vært noe nytt enn å bare høre på musikk og gjøre skole. Hun sitter jo rett ved siden av meg på en måte, så jeg ser jo når hun ikke bruker den også kan vi snakke litt om det også blir det en liten greie på en måte. Så følte at det kanskje gjorde det litt kjekkere.

AS: Hvis du hadde brukt applikasjonen over en lengre periode, tror du at det hadde påvirket læringsutbyttet ditt?

Ida: Ja, jeg tror egentlig det, hvis det hadde gjort at jeg hadde jobbet mer effektivt over en lengre periode.

AS: Etter en endt utfordring, hadde du lyst til å lage en ny?

Ida: Ja, men det var som regel en, jeg tror ikke vi har hatt mer enn en om dagen. Føler at man blir sliten etter å jobbe så intenst. Men jo, jeg ble fristet til å lage en ny.

AS: Hva tenker du om denne applikasjonen i forhold til hold?

Ida: Jeg synes at på en måte premiene var bedre i denne appen, at man kan velge selv hva man vil gi, at det kan være større ting eller mindre ting. Jeg følte det var mer det utfordring-greiene som motiverte meg, og det får du ikke med hold. Så jeg synes egentlig at dette var et bedre konsept. Også er det litt sånn jeg orker aldri å gå til sentrum for å hente den kaffen man kan få, men her er det litt mer sånn okei du kan få en brus på skolen.

Dato og tid: Fredag 8.april, 13:00

Lokasjon: Digitalt, over Zoom

Opptak: Ja

Intervjuer: Anniken Syvertsen

Intervjuobjekt (alias): Julie

Starte med en åpen dialog for å komme i gang:

AS: Hvordan synes du testingen har gått?

Julie: Jeg synes det har gått greit, men jeg har merket at jeg ofte liksom glemmer å starte den timeren. Så jeg har ikke fått så god sånn uttelling, eller hva jeg skal kalle det, siden jeg har jobbet mer enn appen viser. Også tok det litt tid før jeg fikk til å få utfordringer med venner. Men jeg hadde to forskjellige som ble avsluttet i dag. Og jeg tapte begge, haha.Så ja. Men ja, det har gått greit. Det har vært litt morsomt, men skulle ønske jeg var flinkere til å huske å trykke på start sånn at det stemte bedre, eller hva jeg skal si.

Tema: studie-rutiner. Mål: få bakgrunnsinformasjon om studentens studievaner

AS: Kan du beskrive en typisk studieuke for deg?

Julie: En typisk uke, ehm ja. Jeg prøver jo å liksom, ja hva skal jeg si, jeg har jo ganske lite undervisning som jeg må møte på, så jeg pleier som regel bare å, på morgenen å dra på biblioteket, også sitter jeg der fra halv ni til nærmere fire. Og ja, jobber hovedsakelig med at jeg skriver bacheloroppgave. Også har jeg jo et fag ved siden av, så jeg har et seminar og en forelesning hver uke. Utover det er det mest selvstendig arbeid. Og ja, bare sånn helt vanlig mandag til fredag. Jobber kanskje ikke så mange timer hver uke, men det strekker vel akkurat til, ish.

AS: Men du har mest sånn selvstudie virker det som da?

Julie: Ja, så og si bare det. Jeg går ikke så mye i forelesning siden jeg ikke føler jeg får like mye ut av forelesning alltid. Så utover et seminar i uka, så er det så å si bare å lese selv da og jobbe med fag.

AS: Synes du det er vanskelig å strukturere hverdagen når det er så fritt?

Julie: Nei, ikke egentlig, jeg tror jeg er så vandt til det nå, at jeg liksom tar det litt som en selvfølge. At jeg sitter på skolen sånn 7-8 timer hver dag. Prøver å være effektiv, men tror det bare har blitt veldig vane, er jo på 5 år som student.

AS: Hvordan planlegger du og jobber med oppgaver?

Julie: Ja, sånn f.eks. nå med bachelor, da står man jo veldig fritt siden man har 4.5 mnd på å fullføre et prosjekt også må man passe på selv at man blir ferdig til tiden. Jeg har både laget en disposisjon og en tidsplan, hvor jeg har gitt meg selv delmål og datoer, eller uker hvor jeg må være ferdig med én del, også 2-3 uker må jeg være ferdig med noe annet, også ja. Så jeg prøver å sette meg mål da, istedenfor bare å ha én frist som er innleveringsfristen. Sikkert ikke like flink til det i alle fag, men spesielt med en sånn type oppgave da. Så prøver jeg å ha mange små frister i stedet for en stor.

AS: Hva motiverer deg?

Julie: Si det, jeg prøver jo liksom og, eller det er jo først og fremst så er det jo det at man har valgt å studere det man studerer og det er jo gjerne fordi man synes det er spennende og interessant. Men jeg merker jo at uansett, selv om man har valgt det og egentlig synes det er spennende, så kan jo skole føle litt sånn lekse-aktig, det er ikke alltid dritgøy. Men sånn som nå hvertfall er det jo sånn at bachelor synes jeg jo er interessant å jobbe med.

Men det andre faget jeg har er vanskeligere å motivere seg til å jobbe med fordi det er litt mindre spennende. Så ja, jeg vet ikke. Det er kanskje en følelse av at man må jobbe med skole, enn noe man har veldig lyst til.

AS: Pleier du å sette deg noen mål for skolearbeidet? I så fall hva slags?

Julie: Ja, eller jeg har vært mye flinkere tidligere til å lage sånn at jeg for hver uke er sånn "denne uka må jeg gjøre det og det". Ofte er det ut i fra den planen som foreleser har laget. Og da er det jo oversikt over hva man skal lese. Og hvilke uker man skal lese de forskjellige tingene. Men jeg var nok mye flinkere da jeg var ny student til å være mye mer strukturert fordi jeg følte at jeg måtte være strukturert for å komme i mål. Også har man jo studert en stund, og nå føler jeg at jeg kanskje tar litt lettere på ting på en måte. Så jeg er nok ikke like flink nå til å generelt sett lage sånne mål.

AS: Er det noe forskjell på hvordan du arbeider i ulike emner? Hva, og hvorfor?

Julie: Ja, kanskje litt. Eller sånn jeg føler generelt sett er jo eksamen en sånn som man vet at kommer i slutten av semesteret. Men de fleste fag jeg har hatt har jo ofte halvveis i semesteret en obligatorisk innlevering. Så er det jo først å jobbe mot den, også når den er godkjent så blir det mer at da er på en måte den neste fristen man har, det er jo eksamen. Men ja, da har det kanskje litt lettere for å bli litt sånn skippertakaktig.

Tema: lignende prestasjonsmålede applikasjoner. Mål: finne ut om testerene har erfaring med måle prestasjoner

AS: Har du brukt noen prestasjonsmålede applikasjoner eller devices tidligere?

Julie: Jeg tror jeg hadde en sånn treningsapp en eller annen gang i tiden, som jeg ikke husker helt hva heter, men det begynner å bli en stund siden. Så nei, jeg bruker vel ikke det så mye.

AS: Har du brukt Hold eller Strava?

Julie: Nei

AS: Har du brukt andre metoder for å måle dine egne prestasjoner eller fremgang?

Julie: Nei, ikke egentlig, jeg føler bare det er litt mer sånn overordnet, en idé om man bare mestrer, nesten bare ut ifra eksamen og karakterer og sånne ting. Men det er ikke noe jeg tenker sånn veldig mye over i det daglige.

Tema: prokrastinering og utsetting av arbeid. Mål: finne ut av behovet for en slik app for den personen som testet den

- Hvor enig er du i denne påstanden: "Jeg utsetter ofte skolearbeid"
 - helt enig
 - veldig enig
 - nokså enig
 - verken eller
 - **litt uenig**
 - ganske uenig
 - helt uenig
- Hvor enig er du i denne påstanden: "Jeg synes det er lite motiverende å jobbe med skole" - kommer an på dagsformen
 - helt enig
 - veldig enig
 - nokså enig
 - verken eller
 - **litt uenig**

- ganske uenig
- helt uenig
- Hvor enig er du i denne påstanden: "Jeg utsetter ofte skolearbeid fordi jeg jobber bedre under press"
 - helt enig
 - veldig enig
 - nokså enig
 - verken eller
 - litt uenig
 - **ganske uenig**
 - helt uenig
- Hvor enig er du i denne påstanden: "Hvis det hadde vært hyppigere frister, hadde jeg jobbet mer jevnt med skole og ikke utsatt like mye"
 - helt enig
 - veldig enig
 - **nokså enig**
 - verken eller
 - litt uenig
 - ganske uenig
 - helt uenig

AS: Som student, har du følt på at det har vært problematisk med prokrastinering? At det har hatt negative konsekvenser for prestasjonene dine?

Julie: Hmm, nei ikke egentlig. Jeg tror jeg på en måte, jeg prokrastinerer jo til en viss grad, men ikke på en måte såpass at jeg tror det faktisk går utover noe. Jeg klarer alltid å liksom, ja overholde de fristene jeg må holde og sånt.

Tema: applikasjonen. Mål: finne ut om brukergrensesnitt fungerte greit

AS: Hvordan synes du det var å forstå hvordan appen fungerte?

Julie: Det gikk greit. Jeg tror jeg skjønnte ganske fort hva jeg skulle gjøre.

AS: Hvilke features fant du motiverende?

Julie: Det var vel bare mest det at man liksom fikk poeng. Så jeg prøvde på en måte å fullføre de øktene og så at jeg fikk poeng, også ble jeg sånn 'å okei nå fikk jeg poeng'. Prøvde å holde den og få så mange poeng jeg klarte, på en dag, eller på en uke.

AS: Var det noen features som virket mot sin hensikt, som var demotiverende?

Julie: Nei, ikke demotiverende, men bare det at, men det er kanskje mer min egen feil, men at jeg glemte litt å starte øktene, så så jeg litt sånn 'nei nå glemte jeg det igjen' også fikk jeg litt sånn der 'da er det ikke noe vits' følelse, fordi jeg allerede hadde glemte det. Men ja, nei, jeg vet ikke. Jeg prøvde jo på en måte å gjøre det for det.

AS: Hva synes du om utfordring-rubrikken?

Julie: Ja, det var jo ganske greit. Det er jo noe med at med en gang man har en sånn type konkurranse med noen og man ser hvem som leder, det i seg selv er jo ganske motiverende. Jeg synes jo den ja, det fungerte ganske bra, det hjalp på en måte, at den var sånn. Ja.

AS: Var den motiverende?

Julie: Ja, jeg tror jeg ble mer motivert av å konkurrere litt mot en annen, enn å bare sanke poeng for å sanke poeng. Så ja, det hadde en effekt.

AS: Følte du at applikasjonen manglet noe? I så fall, hva?

Julie: Nei, det var vel ikke det. Det eneste jeg tenkte på er at om den hadde hatt sånn, at ved at jeg hadde den så kunne jeg fått med noen som ikke hadde appen.

AS: Ja, at du kunne invitert noen?

Julie: Ja, at jeg kunne invitert noen til å laste ned appen og starte en utfordring med meg. Det var det eneste jeg tenkte over, fordi jeg skulle prøve å finne noen å ha en utfordring med.

AS: Er det noe som hadde fått deg til å bruke applikasjonen mer?

Julie: Hmm. Nei, jeg tror ikke det, det er vel, eller... nei ikke egentlig, men hvis jeg hadde hatt flere venner på den så kunne jeg hatt flere utfordringer kanskje, også ja. Igjen det å huske å faktisk starte den, men det er jo mer min egen feil

Tema: bruk av applikasjonen. Mål: finne ut av bruksmønsteret til testeren

AS: Hvor mye brukte du applikasjonen? Hvor hyppig/ofte

Julie: Jeg brukte den jo hver dag i en uke, jeg begynte å bruke den for en uke siden. Så brukte jeg den nok ikke i helgen. Men jeg satt et mål for meg selv for at jeg skulle teste den og bruke den hver dag. Også skulle jeg egentlig nå et mål som jeg absolutt ikke nådde, men ja, jeg brukte den hver dag ca i en uke.

AS: Var det noe forskjell på hvor mye du brukte applikasjonen i starten og i slutten av testperioden?

Julie: Ja, jeg tror jeg aller mest i starten bare glemte at jeg hadde den, for det var litt uvant. Også for noen dager siden, når jeg fikk utfordringene så begynte jeg å bruke den mer. Da ble jeg litt sånn "nå må jeg huske det" siden jeg hadde en utfordring. Brukte den vel mest nå de siste to dagene, siden onsdagen.

AS: Ble dere enige om en premie taperen skulle gi til vinneren?

Julie: Ja, hehe. Jeg lagde to utfordringer og i begge foreslo jeg at taperen skulle skyldte vinneren en øl. Og jeg tapte begge utfordringene.

AS: Ble du mest motivert til å vinne av selve premien eller bare det å slå den andre personen?

Julie: Av å slå den andre personen. Det er ikke så farlig for meg å få den ølen på en måte, men det hadde vært morsommere å vinne utfordringen enn å tape den.

Tema: motivasjon. Mål: finne ut om testeren synes appen var motiverende

AS: Var appen motiverende?

Julie: Ja, jeg synes jo det. Hvertfall med de utfordringene så er jo det motiverende.

AS: Synes du det var gøy å bruke applikasjonen?

Julie: Ja, igjen mest med utfordringene da. Men ja. Det var det.

AS: Har du jobbet mer, mindre eller likt når du har brukt applikasjonen, som du hadde gjort i denne perioden uten applikasjonen?

Julie: Jeg tror jeg har jobbet ganske likt.

AS: Har det å bruke applikasjonen endret noe på din opplevelse av å arbeide med skole denne uken? Evt. tror du appen vil endre noe på din opplevelse av å arbeide med skole?

Julie: Ja, den kunne nok det. Jeg tenker at en fordel er hvertfall at man har sånne økter, hvis du prøver på en måte å tenke at, siden det bare er tre kvarter, så er det en effektiv økt også kan man stoppe opp litt. Liksom tenke at det er en skoleøkt da, de 45 minuttene. Hvorvidt man liksom får gjort mer, det vet jeg ikke, men kanskje man blir hakket mer effektiv da, siden man setter seg sånne økter.

AS: Hvis du hadde brukt applikasjonen over en lengre periode, tror du at det hadde påvirket læringsutbyttet ditt?

Julie: Jeg vet ikke helt, kanskje hvis man klarer å være mer effektiv på en måte, i de periodene, men så er det liksom litt lett å på en måte, du kan jo fortsatt sitte på telefonen eller se ut av vinduet, selv om tiden går. Så ja, jeg vet ikke helt.

AS: Etter en endt utfordring, hadde du lyst til å lage en ny?

Julie: Mm, ja, mine ble jo ferdig i sta, så jeg kunne sikkert laget, og spesielt siden jeg tapte, kanskje å lage nye også prøve å vinne.. Så det kunne jeg sikkert gjort ja.

AS: Er det noe annet du vil si, som du føler at ikke kom frem i løpet av intervjuet?

Julie: Nei, kanskje litt det med at det er litt lett å ikke jobbe selv om man tar tiden, hvis du skjønner. Du kan jo jukse liksom, du kan jo bare la den gå. Også, plutselig så har du jobbet 8 timer liksom. Det er jo mer det med at du må jo på en måte også prøve å bruke den til å motivere seg selv.

Dato og tid: Tirsdag 5.april, 18:00

Lokasjon: Digitalt, over Zoom

Opptak: Nei

Intervjuer: Anniken Syvertsen

Intervjuobjekt (alias): Magnus

Notat: Dette intervjuet er ikke en transkribering siden opptak ikke ble tatt. Dette er kun notater som ble gjort under intervjuet.

Tema: lignende applikasjoner. Mål: finne ut om testeren har erfaring med måle prestasjoner

AS: har du brukt/bruker du Strava?

- lastet ned, ikke brukt så mye

AS: Blir du motivert av Strava?

- jaa, til en viss grad, ikke noe behov for at alle skal se hvor dårlig jeg er

AS: har du brukt hold?

- ja, brukt en del i eksamensperioden, men ikke mye utenom det

AS: hva brukte du appen til?

- skole

AS: ble du motivert av appen?

- ja, ble kanskje ikke motivert, men det hjalp å se hvor mye jeg hadde igjen, ville ikke ødelegge poengene

AS: har du brukt noen andre apper til å sette deg mål? (trening, sparing, produktivitet e.l

- Lifesum - legger inn hvor mye du spiser,

AS: hva brukte du appen til?

- skulle gå opp i vekt, kunne se hvor mye jeg spiste, for å gå opp så og så mye, greit å se hvor

AS: ble du motivert av appen?

- ja, motiverende å følge med på

Tema: prokrastinering og utsetting av arbeid. Mål: finne ut av behovet for en slik app for den personen som testet den

- Hvor enig er du i denne påstanden: "Jeg utsetter ofte skolearbeid"

- helt enig
- veldig enig
- **nokså enig**
- verken eller
- litt uenig
- ganske uenig
- helt uenig

- Hvor enig er du i denne påstanden: "Jeg synes det er lite motiverende å jobbe med skole"

- helt enig
- veldig enig
- **nokså enig**
- verken eller
- litt uenig
- ganske uenig

- helt uenig
- Hvor enig er du i denne påstanden: "Jeg utsetter ofte skolearbeid fordi jeg jobber bedre under press"
 - helt enig
 - veldig enig
 - nokså enig
 - verken eller
 - litt uenig
 - ganske uenig
 - **helt uenig**
- Hvor enig er du i denne påstanden: "Hvis det hadde vært hyppigere frister, hadde jeg jobbet mer jevnt med skole og ikke utsatt like mye"
 - helt enig
 - **veldig enig**
 - nokså enig
 - verken eller
 - litt uenig
 - ganske uenig
 - helt uenig

Tema: applikasjonen. Mål: finne ut om brukergrensesnitt fungerte greit

AS: Hvordan synes du det var å forstå hvordan appen fungerte?

- det gikk ganske raskt, kan ha noe med at jeg brukte hold før
- gikk raskt å lage challenges, greit å forstå

AS: Hvilke features fant du motiverende?

- ikke direkte, kommer ikke på noe konkret,
- motiverende å vite at jo mer man jobber jo nærmere er man å vinne

AS: Var det noen features som virket mot sin hensikt, som var demotiverende?

- hvis noen ligger langt foran så er det demotiverende, ikke direkte demotiverende, men hvis det er veldig likt så er det litt mer motiverende

AS: Hva synes du om utfordring-rubrikken? Var den motiverende? Hvorfor/hvorfor ikke?

- ganske fint, grønt hvis du leder, rødt hvis du ikke ligger bra an
- vil si den var motiverende

AS: Følte du at applikasjonen manglet noe? I så fall, hva?

- litt vanskelig å si
- det som er bra med hold appen er at man må jobbe i tjue minutter, her må man legge inn timer og jobbe
- mulighet til at nedtellingen bare går og går, at den starter automatisk på nytt igjen

Tema: bruk av applikasjonen. Mål: finne ut av bruksmønsteret til testeren

AS: Hvor mye brukte du applikasjonen?

- fikk ikke brukt den så mye fordi jeg ble syk

AS: Satt du deg et personlig mål?

- nei, visste ikke at det var mulig

AS: Lagde du en utfordring med en venn?

- ja

AS: Ble dere enige om en premie taperen skulle gi til vinneren?

- ja, en sjokoladeplate

AS:Jukset du?

- nei

Tema: motivasjon. Mål: finne ut om testeren synes appen var motiverende

AS: Var appen motiverende?

- ja

AS: Har du jobbet mer, mindre eller likt når du har brukt applikasjonen, som du hadde gjort i denne perioden uten applikasjonen?

- jobbet nok mer, selv om det ikke ble så mye
 - når jeg vet at jeg har satt en time
 - uten appen blir det sporadisk, blir mer effektivt
 - ikke mer tid men mer effektivt arbeid

AS: Har det å bruke applikasjonen endret noe på din opplevelse av å arbeide med skole denne uken? Evt. tror du appen vil endre noe på din opplevelse av å arbeide med skole?

- ja, tror det hadde vært mer motiverende, når man først jobber er det mer effektivt.
Kan vite at om fem timer har jeg gjort alt jeg trenger å gjøre

AS: Hvis du hadde brukt applikasjonen over en lengre periode, tror du at det hadde påvirket læringsutbyttet ditt?

- ja

AS: Tror du at du hadde brukt applikasjonen?

- ja, tror det, men litt vanskelig å si. Brukte hold ganske flittig,

AS: Vant du eller tapte du utfordringen?

- jeg tapte, ble syk,
 - mer demotiverende å tape, ikke like motiverende

AS: Etter en endt utfordring, hadde du lyst til å lage en ny?

- vanskelig å si siden jeg var syk, hadde jeg vært frisk ville jeg nok

AS: hva tenker du om denne applikasjonen i forhold til hold?

- blir ekstra motivert når man spiller mot venner, at man kan gni det litt inn,
 - heder og ære

Dato og tid: Fredag 8.april, 09:00

Lokasjon: Digitalt, over Zoom

Opptak: Ja

Intervjuer: Anniken Syvertsen

Intervjuobjekt (alias): Mia

Starte med en åpen dialog for å komme i gang:

AS: Hvordan synes du testingen har gått?

Mia: Jeg synes det har gått bra, eh jeg kom litt seint i gang. Men har fått noen venner og laget utfordringer, så jeg synes det har gått bra. Jeg synes den funket veldig fint.

Tema: studie-rutiner. Mål: få bakgrunnsinformasjon om studentens studievaner

AS: Kan du beskrive en typisk studieuke for deg?

Mia: Jeg vil si jeg er ganske strukturert, hehe. Pleier å være på skolen egentlig hver dag, eller ja, prøver hvertfall å være der hver dag. Fra 8-4. Også er det ikke alltid det går, men det er utgangspunktet da. Også pleier jeg å jobbe med venner fra studiet på skolen. Og ja, jeg pleier å planlegge uken på søndag og prøver å følge planen.

AS: Hvordan planlegger du og jobber med oppgaver?

Mia: Pleier egentlig bare å, vi får en en sånn ukeplan med hvilke oppgaver vi skal gjøre hvilken uke. Prøver egentlig bare å sette av tid til å gjøre de oppgavene og prøver å holde meg ajour så langt det går. Pleier å sette av tid, og i de fleste fag så pleier jeg å jobbe med noen.

AS: Hva motiverer deg?

Mia: Å ikke henge bakpå, hvis det er lov å si haha. Hater å ikke være ajour. Også er jeg veldig glad i å krysse av oppgaver.

AS: Pleier du å sette deg noen mål? I så fall hva slags?

Mia: Nei, det er jeg egentlig veldig dårlig på.

AS: Er det noe forskjell på hvordan du arbeider i ulike emner? Hva, og hvorfor?

Mia: Ja, fordi hvertfall, eller det spørs litt da på hvordan fag jeg har, men sånn som nå har jeg et maskinlærings fag og der har vi egentlig bare obliger, så det bruker vi gjerne litt lengre tid på og har kanskje to uker på det. Og da har vi ikke oppgaver i tillegg liksom. Så da setter man jo gjerne av tid flere ganger og ja, man gjør liksom ikke alt ferdig med en gang kanskje. Mens i de fagene jeg har oppgaver pleier jeg liksom å, sette meg ned å prøve å bli ferdig da. Så ja, det er jo litt forskjellig.

AS: Har arbeidsformen og holdningene dine, eller tilnærmingen til studiet, endret seg i løpet av studiet?

Mia: Hm, ja altså det var en liten knekk våren 2020, men det er jo andre grunner enn meg selv. Men, jeg føler egentlig ikke det har endret seg så mye, jeg har jobbet ganske likt hele veien. Var kanskje litt mer stresset i starten, man er litt mer avslappet nå. Men jeg har hatt samme arbeidsrutiner hele veien.

Tema: lignende prestasjonsmålende applikasjoner. Mål: finne ut om testeren har erfaring med måle prestasjoner

AS: Har du brukt noen prestasjonsmålende applikasjoner eller devices tidligere?

Mia: Ja, altså jeg har jo brukt fitbit, eller ja jeg hadde fitbit klokke. Også har jeg fulgt med litt på den appen. Men det går veldig i perioder. Når det går tom for strøm så kan jeg gå noen måneder. Har ikke vært så god, men når jeg først har holdt på så har jeg fulgt med ganske.

Litt sånn “når det er snart 10 000 skritt, nå må jeg bare gå en liten runde” på kvelden liksom. Jeg har ikke brukt noe sånn i forbindelse med studier eller noe sånt, jeg har ikke brukt den hold.

AS: Har du brukt strava?

Mia: Nei.

AS: Så mest den fitbit-appen da?

Mia: Ja.

AS: Ble du motivert da du brukte den?

Mia: Eh ja, men jeg har også vært litt sånn, hvis jeg har vært litt lat så har jeg bare tatt den av. Så jeg vet ikke helt jeg. Veldig opp og ned.

Tema: prokrastinering og utsetting av arbeid. Mål: finne ut av behovet for en slik app for den personen som testet den

- Hvor enig er du i denne påstanden: “Jeg utsetter ofte skolearbeid”
 - helt enig
 - veldig enig
 - nokså enig
 - verken eller
 - litt uenig
 - **ganske uenig**
 - helt uenig
- Hvor enig er du i denne påstanden: “Jeg synes det er lite motiverende å jobbe med skole”
 - helt enig
 - veldig enig
 - nokså enig
 - verken eller
 - **litt uenig**
 - ganske uenig
 - helt uenig
- Hvor enig er du i denne påstanden: “Jeg utsetter ofte skolearbeid fordi jeg jobber bedre under press”
 - helt enig
 - veldig enig
 - nokså enig
 - verken eller
 - litt uenig
 - **ganske uenig**
 - helt uenig
- Hvor enig er du i denne påstanden: “Hvis det hadde vært hyppigere frister, hadde jeg jobbet mer jevnt med skole og ikke utsatt like mye”
 - helt enig
 - veldig enig
 - nokså enig
 - **verken eller**
 - litt uenig
 - ganske uenig
 - helt uenig

AS: Som student, har du følt på at det har vært problematisk med prokrastinering? At det har hatt negative konsekvenser for prestasjonene dine?

Mia: Nei, egentlig ikke. Jeg pleier egentlig å ta meg sammen ganske fort. Så det går liksom greit. Jeg vet at jeg takler sykt dårlig på å bli stresset. Da reagerer hele kroppen med hodepine og alt. Jeg tror det skal litt til før jeg faller helt ut. Men jeg vet at når jeg sitter hjemme, så er det fortere å finne på noe annet, enn hvis jeg er på skolen.

Tema: applikasjonen. Mål: finne ut om brukergrensesnitt fungerte greit

AS: Hvordan synes du det var å forstå hvordan appen fungerte?

Mia: Det var egentlig veldig intuitivt, det var veldig bra. Bra jobbet. Jeg skjønnte den med en gang liksom.

AS: Hvilke features fant du motiverende?

Mia: Nei, jeg fikk jo litt konkurranseinstinkt av å ha en challenge. Også lagde jeg sånn mål til meg selv også, og det, jeg tror jeg overvurderte meg selv litt, også trodde at jeg tok med lørdagen, men det gjorde jeg tydeligvis ikke. Så det klarte jeg ikke. Så spesielt utfordringer da, at konkurranseinstinktet kicker litt ekstra inn.

AS: Var det noen features som virket mot sin hensikt, som var demotiverende?

Mia: Nei, egentlig ikke. Nei, for når man lå bak så var den jo rød så det var veldig motiverende. Og, ja. Nei jeg synes egentlig ikke det, men jo, det som var litt kjipt var at jeg ofte glemte å sette den på om morgenen. Men det har ingenting med at det var demotiverende da, men det var litt irriterende.

AS: Hva synes du om utfordring-rubrikken? Var den motiverende? Hvorfor/hvorfor ikke?

Mia: Den funket bra, det var bare noen ganger den ikke byttet over med en gang man var foran eller bak, at den hang litt igjen. Men når man bare gikk inn og ut så tror jeg at det fungerte.

AS: Men synes du at den var motiverende?

Mia: Ja, jeg likte veldig godt at den var helt rød når man lå bak. Da visste man at "nå er det skjerpings, bare å jobbe på". Det synes jeg var veldig bra, det funket. For meg i hvert fall.

AS: Følte du at applikasjonen manglet noe? I så fall, hva?

Mia: Hmm, nei, men det var en ting. Når utfordringen liksom ble ferdig, om man kunne gått inn og sett hvor mange timer man hadde. Fordi, når den ble ferdig ble den jo sånn uoppgjort. Jeg skulle gjerne kunne trykket inn på den og sett. Men det var vel ikke noe mer. Jo, kanskje at stopwatch fungerte, fordi det var fort gjort å glemme å sette den på på nytt når timeren var ute. Jeg hadde ikke på varsling, jeg burde kanskje hatt på varsling.

AS: Nei, det var ikke varsling uansett, så det var ikke mulighet.

Mia: Hehe, åja.

AS: Er det noe som hadde fått deg til å bruke applikasjonen mer?

Mia: Haha, kanskje varslinger, så jeg ikke hadde glemt meg bort innimellom. Også kanskje at flere av vennene mine her hadde vært med.

Tema: bruk av applikasjonen. Mål: finne ut av bruksmønsteret til testeren

AS: Hvor mye brukte du applikasjonen?

Mia: Jeg har prøvd å bruke den hver dag da, også glemte jeg det litt på morgenen, og da var jeg sånn "nei!". Men jeg har brukt den helt siden jeg lastet ned, jeg tror det var på lørdag eller fredag. Så hver dag.

AS: Var det noe forskjell på hvor mye du brukte applikasjonen i starten og i slutten av testperioden?

Mia: Nei, det tror jeg ikke.

AS: Satt du deg et personlig mål?

Mia: Ja

AS: Lagde du en utfordring med en venn?

Mia: Ja

AS: Hva synes du var mest motiverende av personlig mål og utfordring med venn?

Mia: Utfordring med en venn

AS: Ble dere enige om en premie taperen skulle gi til vinneren?

Mia: Ja.

AS: Ble du mest motivert av den faktiske premien, eller bare det å slå den andre personen?

Mia: Bare å slå den andre, hehe.

Tema: motivasjon. Mål: finne ut om testerens syn på appen var motiverende

AS: Var appen motiverende?

Mia: Ja, det synes jeg. Den hjalp meg liksom, fordi ofte kan jeg dra hjem halv fire kanskje tre hvis man blir litt lei, men det har jeg faktisk ikke gjort denne uken.

AS: Haha, godt å høre. Hva ved applikasjonen var motiverende? Hva var det som gjorde at du fortsatte?

Mia: Nei, det var å prøve å vinne utfordringen. Jeg tapte da, det funket da, jeg jobbet mer mer skole.

AS: Synes du det var gøy å bruke applikasjonen?

Mia: Ja, det synes jeg.

AS: Har du jobbet mer, mindre eller likt når du har brukt applikasjonen, som du hadde gjort i denne perioden uten applikasjonen?

Mia: Tror faktisk jeg har jobbet mer, mhm.

AS: Har det å bruke applikasjonen endret noe på din opplevelse av å arbeide med skole denne uken? Evt. tror du appen vil endre noe på din opplevelse av å arbeide med skole?

Mia: Mmm, ja det kan hende. Jeg er litt usikker siden jeg på en måte har ganske gode vaner fra før da, men den kan kanskje bidra til det lille ekstra da. Eller sånn, den ekstra halvtimen hver dag. Det tror jeg.

AS: Hvis du hadde brukt applikasjonen over en lengre periode, tror du at det hadde påvirket læringsutbyttet ditt?

Mia: Det vet jeg ikke, hmm det var litt vanskelig.

AS: Etter en endt utfordring, hadde du lyst til å lage en ny?

Mia: Ja, det hadde jeg!

Dato og tid: Tirsdag 5.april, 19:00

Lokasjon: Digitalt, over Zoom

Opptak: Nei

Intervjuer: Anniken Syvertsen

Intervjuobjekt (alias): Ole

Notat: Dette intervjuet er ikke en transkribering siden opptak ikke ble tatt. Dette er kun notater som ble gjort under intervjuet.

Tema: lignende applikasjoner. Mål: finne ut om testeren har erfaring med måle prestasjoner

AS: har du brukt/bruker du Strava?

- ja

AS: Hva bruker du strava til?

- Skryte, registrere løping,

AS: Blir du motivert av Strava?

- Nei, fordi du taper

AS: har du brukt hold?

- nei

AS: har du brukt noen andre apper til å sette deg mål? (trening, sparing, produktivitet e.l

- ja, yazio, telle kalorier, gir deg oppskrifter til frokost/middag

AS: ble du motivert av appen?

- ja, ble motivert til å spise mer,

AS: Hvilke features ble du motivert av

- den ga mye forskjellige typer oppskrifter til mitt program

Tema: prokrastinering og utsetting av arbeid. Mål: finne ut av behovet for en slik app for den personen som testet den

- Hvor enig er du i denne påstanden: "Jeg utsetter ofte skolearbeid"

- helt enig
- veldig enig
- nokså enig
- verken eller
- **litt uenig**
- ganske uenig
- helt uenig

- Hvor enig er du i denne påstanden: "Jeg synes det er lite motiverende å jobbe med skole"

- helt enig
- veldig enig
- **nokså enig**
- verken eller
- litt uenig
- ganske uenig
- helt uenig

- Hvor enig er du i denne påstanden: "Jeg utsetter ofte skolearbeid fordi jeg jobber bedre under press"

- helt enig

- veldig enig
 - nokså enig
 - verken eller
 - litt uenig
 - **ganske uenig**
 - helt uenig
- Hvor enig er du i denne påstanden: "Hvis det hadde vært hyppigere frister, hadde jeg jobbet mer jevnt med skole og ikke utsatt like mye"
 - **helt enig - men det er mye frister fra før**
 - veldig enig
 - nokså enig
 - verken eller
 - litt uenig
 - ganske uenig
 - helt uenig

Tema: applikasjonen. Mål: finne ut om brukergrensesnitt fungerte greit

AS: Hvordan synes du det var å forstå hvordan appen fungerte?

- lett, veldig lett, misforsto det å lage et samarbeid også lage en utfordring, viste hvordan jeg ville bruke den før jeg brukte det

AS: Hvilke features fant du motiverende?

- når du tok på nedtellingen, så kunne du ikke bryte av midt i så man måtte jobbe til tiden var ute
- gratulerer, x antall poeng: kult,
- når det var grønt fordi jeg ledet, og når det var rødt fordi jeg ikke ledet
- hele appen var motiverende

AS: Var det noen features som virket mot sin hensikt, som var demotiverende?

- i lengden: det at det ikke går an å bryte midt i en nedtelling, kan være demotiverende, kan ende med at man jukser, hvis stoppeklokken fungerte hadde ikke det vært et problem

AS: Følte du at applikasjonen manglet noe? I så fall, hva?

- ja, hvis du vil gjøre det alene, å få noe ut av det, få belønning av å gjennomføre det alene
- kunne gjøre en utfordring uten å måtte skyldes noen noe, samarbeid med bedrifter
- ellers var det bra
- kanskje, stories (som er der i 24 timer), kunne vært kult å ha turnering, si at du samarbeider med ti personer også blir det en turnering > den som vinner med antall timer hver dag, også blir det en cup

Tema: bruk av applikasjonen. Mål: finne ut av bruksmønsteret til testeren

AS: Hvor mye brukte du applikasjonen?

- jeg har brukt den 15 timer
- + litt til

AS: Var det noe forskjell på hvor mye du brukte applikasjonen i starten og i slutten av testperioden?

- fra første gang jeg fikk en venn var det ganske likt

AS: Satt du deg et personlig mål?

- nei

AS: Lagde du en utfordring med en venn?

- ja

AS: Jukset du?

- kanskje ti min her og ti min her hvor jeg ikke har jobbet like mye med skole siden det er mulig å bruke telefonen samtidig som man klokker tid

Tema: motivasjon. Mål: finne ut om testerene synes appen var motiverende

AS: Var appen motiverende?

- ja, det var den

AS: Har du jobbet mer, mindre eller likt når du har brukt applikasjonen, som du hadde gjort i denne perioden uten applikasjonen?

- lyst til å si mer, men vet ikke. Hadde en del øvinger jeg måtte gjøre, var på skolen på mandag og da jobbet jeg mer bare for å slå en person jeg var i utfordring med

AS: Har det å bruke applikasjonen endret noe på din opplevelse av å arbeide med skole denne uken? Evt. tror du appen vil endre noe på din opplevelse av å arbeide med skole?

- ja, det vil sørge for at jeg ..jeg er veldig glad i konkurranse, det burde være mer konkurranse i skole som gjør at jeg jobber mer med skole. Hvis ikke jeg taper

AS: Hvis du hadde brukt applikasjonen over en lengre periode, tror du at det hadde påvirket læringsutbyttet ditt?

- ja, det hadde det nok

AS: Tror du at du hadde brukt applikasjonen?

- ja, jeg hadde brukt den

AS: Hva ville du ha brukt applikasjonen til?

- lage utfordringer med venner, prøve å knuse dem

AS: Vant du eller tapte du utfordringen?

- vant

AS: Etter en endt utfordring, hadde du lyst til å lage en ny?

- først lyst på en dags pause, etter det hadde jeg definitivt lyst. Det blir intenst for man sjekker appen ganske ofte

Dato og tid: Torsdag 11.april, 11:00

Lokasjon: Digitalt, over Zoom

Intervjuer: Anniken Syvertsen

Intervjuobjekt (alias): Rob

Starte med en åpen dialog for å komme i gang:

AS: Hvordan synes du testingen har gått?

Rob: Bra, altså det har hvertfall fungert sånn som jeg så for meg at det skulle. Og jeg har jo på en måte fått til å ta tiden.

Tema: studie-rutiner. Mål: få bakgrunnsinformasjon om studentens studievaner

AS: Kan du beskrive en typisk studieuke for deg?

Rob: Det er en kombinasjon av forelesninger og selvstudium. Og typisk er at når jeg leser for meg selv så prøver jeg å tenke at selv at jeg skal ha ca en åtte-timers dag. Ofte tilbringes det på lesesalen. Dagene er ganske like.

AS: Hvordan planlegger du og jobber med oppgaver?

Rob: Jeg pleier gjerne dagen i forveien å se for meg hva jeg skal gjøre neste dag. Prøver å få litt oversikt over hva jeg tenker jeg skal komme meg gjennom. Også prøve så godt jeg kan for å rekke det jeg ser for meg at jeg skal få til.

AS: Hva motiverer deg?

Rob: Å gjøre det bra, bli flinkere, lære. Mestringsfølelsen når man får til ting. Det er kanskje det viktigste.

AS: Pleier du å sette deg noen mål? I så fall hva slags?

Rob: Jeg pleier å sette ganske mye mål. Men da er det ofte gjerne kortere delmål, f.eks. "gå gjennom forelesningsnotater fra de tre siste ukene". Skrive en slags oppsummering over det. Det kan være 'få oversikt over spesifikke kapitler' som jeg har om dagen. Se over på en måte, mye av det jeg driver med det nå er at jeg blir presentert resonnementer og utregninger i forelesninger også bruker jeg mye tid på å gå gjennom på egenhånd, og at jeg går gjennom det selv.

AS: Er det noe forskjell på hvordan du arbeider i ulike emner? Hva, og hvorfor?

Rob: Ja, det første er vanskelighetsgrad. Hvor mye et fag krever av meg. Noen fag krever mer tid for at du skal skjønne det. Noen fag er mer beregningskrevende. Mer utregning og mer resonnementer og steg man må fylle ut for å skjønne selv. Mens andre fag er kanskje mer idébasert, og det er bedre å bare lese om det.

AS: Har arbeidsformen og holdningene dine, eller tilnærmingen til studiet, endret seg i løpet av studiet?

Rob: Ja, det vil jeg si det betraktelig har. I begynnelsen brukte jeg sikkert mer tid og var ikke så dynamisk. At jeg mer typisk bare leste og gjorde mye oppgaver. Mens senere har jeg på en måte blitt flinkere til å lage meg mindre delmål og gjøre mer spesifikke ting for å få til det jeg skal lære.

Tema: lignende prestasjonsmålede applikasjoner. Mål: finne ut om testeren har erfaring med måle prestasjoner

AS: Har du brukt/bruker du Strava?

Rob: Ja

AS: Hva bruker du strava til?

Rob: Det er jo på en måte først å dokumentere for min egen del. Rett og slett bare ha statistikk og et slags arkiv for hva du har gjort. Også er det jo for å liksom se forbedring. Man

sammenligner jo hele tiden på en måte hastighet og distanser med tidligere treningsøkter. Det er flott for å holde oversikt over total arbeidsmengde. Hvor mye trening eller løping eller hvor mange km du får på en mnd eller en uke e.l. Eller hvis det er et program du prøver å følge.

AS: Blir du motivert av Strava?

Rob: Ja, veldig motivert. Jeg er veldig glad i det å ha statistikk for det jeg driver med. Man blir motivert av det å se forbedring. Og selv de gangene man kanskje ikke ser så mye forbedring, så er det likevel motiverende at man kan se alt arbeidet som ligger bak.

AS: Hvilke features blir du motivert av?

Rob: Det å kunne ta opp en løpeøkt og se på splits, hvor man ser hastigheten du har hatt på hvert km, også kan man sammenligne det på forskjellige løpeturer.

AS: Har du brukt hold?

Rob: Nei

AS: har du brukt noen andre apper til å sette deg mål? (trening, sparing, produktivitet e.l.)

Rob: Bare den helse-appen til iphone. Den kan også måle skritt og distanser.

AS: Har du brukt den aktivt?

Rob: Ikke veldig. Men typisk dager jeg ikke har løpt så kan det være for å sjekke antall skritt jeg har gått.

AS: Ble du motivert av appen?

Rob: Nei, jeg vet ikke. Ikke veldig. Men det kan også ha en sammenheng med at jeg ikke bruker den så mye. Jeg er over snittet engasjert i bruken av strava, til sammenligning.

Tema: prokrastinering og utsetting av arbeid. Mål: finne ut av behovet for en slik app for den personen som testet den

Hvor enig er du i denne påstanden: "Jeg utsetter ofte skolearbeid"

- helt enig
- **veldig enig**
- nokså enig
- verken eller
- litt uenig
- ganske uenig
- helt uenig
- Hvor enig er du i denne påstanden: "Jeg synes det er lite motiverende å jobbe med skole"
 - helt enig
 - veldig enig
 - nokså enig
 - verken eller
 - litt uenig
 - **ganske uenig**
 - helt uenig
- Hvor enig er du i denne påstanden: "Jeg utsetter ofte skolearbeid fordi jeg jobber bedre under press"
 - helt enig
 - veldig enig
 - **nokså enig**
 - verken eller
 - litt uenig

- ganske uenig
- helt uenig
- Hvor enig er du i denne påstanden: "Hvis det hadde vært hyppigere frister, hadde jeg jobbet mer jevnt med skole og ikke utsatt like mye"
 - helt enig
 - veldig enig
 - **nokså enig**
 - verken eller
 - litt uenig
 - ganske uenig
 - helt uenig

AS: Som student, har du følt på at det har vært problematisk med prokrastinering? At det har hatt negative konsekvenser for prestasjonene dine?

Rob: Ja. Vil du høre om forskjellige konsekvenser?

AS: Ja, du må gjerne utdype.

Rob: Ja, det har på en måte. Det er alltid sånn at jeg, som sagt, jobber jeg bedre under press, og en ting er å jobbe bedre under press dagen før. Men det er liksom ikke helt bra for helse når man jobber under press tre uker på rad. Så det er jo en konsekvens. En annen konsekvens er at jeg jobber dårligere i fag enn planlagt, fordi man har utsatt det så lenge at det det ikke har vært nok tid til slutt til å få et tilfredsstillende resultat.

Tema: applikasjonen. Mål: finne ut om brukergrensesnitt fungerte greit

AS: Hvordan synes du det var å forstå hvordan appen fungerte?

Rob: Veldig greit, det var veldig selvsagt hvordan man skulle bruke den.

AS: Hvilke features fant du motiverende?

Rob: Mest det at det var lett å se, til sammenligning med strava, samlet arbeidsmengde. Man fikk lett se hvor mye man hadde jobbet. Og den samarbeids funksjonen, hvor man holder hverandre litt ansvarlig når man har en sånn utfordring. Konkurransinstinkt da sikkert er jo motiverende.

AS: Var det noen features som virket mot sin hensikt, som var demotiverende?

Rob: Eneste er at det er litt kronglete å hele tiden måtte passe på at man starter den når man starter å jobbe og stoppe den når man stopper å jobbe. Det er jo en ting til å passe på på en måte. Også kan det vel være litt, jeg vet ikke, det kan tilføre litt stress og, sammenheng med at man blir ansvarlig for de man har utfordring med. At man ikke klarer det man hadde sett for seg at man skulle klare.

AS: Hva synes du om utfordring-rubrikken?

Rob: Synes den var grei og oversiktlig og det den trenger å være.

AS: Synes du at den var motiverende?

Rob: Ja, den var motiverende. Kan ha sammenheng med at jeg ledet. Men hvis jeg ikke ledet ville kanskje det også være motiverende da. Det er på en måte uavhengig om du leder eller ikke. Du blir jo motivert hvis du ligger bak også.

AS: Følte du at applikasjonen manglet noe? I så fall, hva?

Rob: Kanskje dette med delmål. At man på en måte, jeg tenker at mer tid brukt blir ikke bedre arbeid nødvendigvis. At det kunne vært en form for at man tok opp en time, men at man hadde noen mål man skulle nå på den tiden man arbeidet og som man kunne huke av.

Tema: bruk av applikasjonen. Mål: finne ut av bruksmønsteret til testeren

AS: Hvor mye brukte du applikasjonen?

Rob: I to dager da. Og da brukte jeg den konsekvent hele tiden mens jeg arbeidet de to dagene. Noen tekniske feil gjorde at ikke alt ble dokumentert. Jeg gjorde mitt beste for å bruke den i den tiden jeg skulle teste.

AS: Følte du at det var vanskelig å huske på å bruke den når du jobbet?

Rob: Ikke nå, men det var nok fordi det var en test. Jeg følte et ansvar når jeg skulle testet den. Me jeg ser for meg at hvis det var noe jeg skulle brukt måtte jeg laget det som en vane. Da hadde jeg nok jobbet mye i begynnelsen med å huske på det, ser for meg at jeg kunne fort glemte å ta det opp.

AS: Satt du deg et personlig mål?

Rob: Nei

Tema: motivasjon. Mål: finne ut om testerene synes appen var motiverende

AS: Var appen motiverende?

Rob: Ja

AS: Ble du motivert til å jobbe mer med skole?

Rob: Ikke mer nødvendigvis, men ble mer motivert til å fortsette. Det at når man ser arbeidsmengden og verdien av det arbeidet man legger inn, så er det motiverende til å fortsette.

AS: Synes du det var gøy å bruke applikasjonen?

Rob: Ja, ganske. Jeg er jo som sagt tilhenger av å føre statistikk. Hovedplusspunktet mitt er at det er gøy å se hvor mye du legger inn. Hovedminus er at det er litt kronglete at man må passe på å ta opp.

AS: Har du jobbet mer, mindre eller likt når du har brukt applikasjonen, som du hadde gjort i denne perioden uten applikasjonen?

Rob: Jeg tenker ganske likt. Jeg føler på en måte at man blir holdt mer ansvarlig når man bruker appen. Hvis man ser at man skal jobbe tretti minutter til for å få et rundt tall, så er det kanskje større sjanse for at man gjør det. Gjør at jeg kanskje jobber litt lengre enn ellers.

AS: Har det å bruke applikasjonen endret noe på din opplevelse av å arbeide med skole denne uken? Evt. tror du appen vil endre noe på din opplevelse av å arbeide med skole?

Rob: Jeg tror ikke det har endret så mye denne perioden her, men jeg tror på en måte den kunne, hvis jeg hadde brukt den over lengre tid, så kan det hende jeg hadde blitt flinkere til å disponere tiden. Etersom man blir mer bevisst på hvor mye tid man faktisk bruker. Etter hvert.

AS: Hvis du hadde brukt applikasjonen over en lengre periode, tror du at det hadde påvirket læringsutbyttet ditt?

Rob: Eh, både og. Som jeg sa, hvis man hadde disponert tiden bedre får man kanskje bedre læringsutbytte, men hovedinnvendingen min mot det er at jeg tror ikke nødvendigvis at mer tid betyr mer læring. Der tenker jeg heller litt motsatt. Sånn sett er er kanskje timer-funksjonen den beste, for det blir å simulere litt det å jobbe under press.

AS: Hvis du hadde brukt applikasjonen etter testperioden. Hva ville du ha brukt applikasjonen til?

Rob: Jeg tror jeg er mest interessert i dokumentasjon for min egen del, og mindre å utfordre venner. Tror jeg hadde hatt mye glede av å både bruke tid-takingen for å få et samlet bilde av hvor mye tid jeg bruker på skolen.

AS: Etter en endt utfordring, hadde du lyst til å lage en ny?

Rob: Ja, litt. Jeg vet ikke, det er jo det med konkurranseinstinkt antar jeg.

AS: I utfordring, ble du mest motivert av at du kunne vinne en premie eller det at du ville vinne?

Rob: Mest motivert av det å konkurrere, og litt den biten at man blir holdt mer ansvarlig fordi man inngår en slags avtale sammen med en annen om at 'nå skal vi prøve å jobbe sånn og sånn'. Da føler jeg mer på å oppfylle det.

AS: Har du noe du ønsker å tilføye som du føler at ikke kom frem gjennom intervjuene?

Rob: Største punktet var nok det jeg sa om noen delmål, at man har et slags system hvor man belønner hva man klarer på den tiden man har jobbet.

Dato og tid: Torsdag 7.april, 12:00

Lokasjon: Digitalt, over Zoom

Opptak: Ja

Intervjuer: Anniken Syvertsen

Intervjuobjekt (alias): Sara

Starte med en åpen dialog for å komme i gang:

AS: Hvordan synes du testingen har gått?

Sara: Jeg synes det har gått bra. Jeg synes at konseptet av appen er ganske kult. Og selv om det er lignende elementer til hold, så blir det mer interaktivt og litt mer gøy fordi man kan lage et samarbeid med de man jobber sammen med. Vi har synes det har vært gøy å teste den sammen. Var litt småting når det kommer til funksjonaliteten, var ikke mye av det. Men jeg var stort sett imponert.

Tema: studie-rutiner. Mål: få bakgrunnsinformasjon om studentens studievevaner

AS: Kan du beskrive en typisk studieuke for deg?

Sara: En typisk studieuke for meg. En rundt 8-10 timers arbeidsdag mandag til fredag. Stort sett veldig lite pauser sånn sett, så det går jo ofte i ett. Ikke så mye variasjon der egentlig. Sette seg ned å jobbe til man ikke gidder mer, eller ikke klarer mer.

AS: Hvordan planlegger du og jobber med oppgaver?

Sara: Ehm, pleier som regel å sette opp en plan med en ganske detaljert liste som man kan dele opp i mindre delmål for å føre litt mer progresjon, selv om man bare gjør litt småting. Så føler man iallefall at man kan sjekke av ting litt mer kontinuerlig, istedenfor å ha en stor oppgave.

AS: Hva motiverer deg?

Sara: Det er selvfølgelig å få bra resultater, hvertfall med tanke på masteroppgave så er man avhengig av å ha god karakter for å være konkurransedyktig når det kommer til jobb. Hvis man ikke har noe jobb som venter på seg. Også er det jo selvfølgelig motiverende å jobbe med noe man synes er interessant, det er jo key.

AS: Pleier du å sette deg noen mål? I så fall hva slags?

Sara: Ja, jeg prøver å lage litt overordnet mål så ikke jeg gaper over for mye av gangen for da blir det fort demotiverende hvis man ikke klarer de målene man har. Om det så er 'ila denne dagen skal du skrive to avsnitt'. Det trenger på en måte ikke å være så mye mye.

AS: Er det noe forskjell på hvordan du arbeider i ulike emner? Hva, og hvorfor?

Sara: Nei, det har egentlig stort sett vært ganske likt, selve fremgangsmåten på hvordan jeg har jobbet har holdt seg ganske konsistent hele tiden. Har kanskje blitt litt bedre på planlegging og utførelsen av planen med årene. Men ideen og tankene har alltid vært det samme føler jeg.

AS: Har arbeidsformen og holdningene dine, eller tilnærmingen til studiet, endret seg i løpet av studiet?

Sara: Det endra seg fra jeg gikk fra bachelor til master iallefall. Det føler jeg. Bachelor var jo drevet av at du må bare pugge fra å bestå dette faget. Mens nå er jeg mer drevet av at jeg finner det interessant og har lyst til å lære. Og at jeg får litt mer ut av det.

Tema: lignende prestasjonsmålede applikasjoner. Mål: finne ut om testeren har erfaring med måle prestasjoner

AS: Har du brukt/bruker du Strava?

Sara: Nei, aldri brukt

AS: Har du brukt noen andre apper til å sette deg mål? (trening, sparing, produktivitet e.l

Sara: Ja jeg har brukt en klokke som logger trening og hold.

AS: Hva brukte du appen til?

Sara: Klokka var for å holde tritt med trening og motivere litt. Det er alltid mer motiverende når man kan logge noe, eller vise til noe. Hold var mer for at da må jeg legge vekk telefonen, og ikke bruke den. Og hvis man ikke bruker den får man jo en liten premie på enden.

AS: Ble du motivert av de appene?

Sara: Klokka, absolutt. Hvertfall når man logger løping, at man kan holde litt tritt med pulssoner og tid man bruker på samme distanser og sånt. Hold, ikke sånn kjempemye. Men det hjalp å flytte fokuset vekk fra telefonen. Men følte ikke at det var sånn super motiverende, det var det ikke.

Tema: prokrastinering og utsetting av arbeid. Mål: finne ut av behovet for en slik app for den personen som testet den

- Hvor enig er du i denne påstanden: "Jeg utsetter ofte skolearbeid"
 - helt enig
 - veldig enig
 - nokså enig
 - verken eller
 - litt uenig
 - **ganske uenig**
 - helt uenig
- Hvor enig er du i denne påstanden: "Jeg synes det er lite motiverende å jobbe med skole"
- Kommer veldig an på
 - helt enig
 - veldig enig
 - nokså enig
 - verken eller
 - **litt uenig**
 - ganske uenig
 - helt uenig
- Hvor enig er du i denne påstanden: "Jeg utsetter ofte skolearbeid fordi jeg jobber bedre under press"
 - helt enig
 - veldig enig
 - nokså enig
 - verken eller
 - litt uenig
 - ganske uenig
 - **helt uenig**
- Hvor enig er du i denne påstanden: "Hvis det hadde vært hyppigere frister, hadde jeg jobbet mer jevnt med skole og ikke utsatt like mye"
 - helt enig
 - veldig enig
 - nokså enig
 - **verken eller**
 - litt uenig

- ganske uenig
- helt uenig

AS: Som student, har du følt på at det har vært problematisk med prokrastinering? At det har hatt negative konsekvenser for prestasjonene dine?

Sara: Ja, absolutt, de gangene jeg faktisk prokrastinerer er det jo fordi jeg er demotivert fordi det er noe som ikke går som det skal. Da blir jeg frustrert og utsetter enda mer og bli i ekstremt dårlig humør etterhvert.

Tema: applikasjonen. Mål: finne ut om brukergrensesnitt fungerte greit

AS: Hvordan synes du det var å forstå hvordan appen fungerte?

Sara: Jeg synes stort sett det var ganske greit og enkelt oppsett. Føler kanskje at noen av disse popup-menyene man brukte for å lage utfordringer ikke var helt intuitivt til å få til å fungere hvordan man ville. Men overall var det relativt enkelt å forstå.

AS: Hvis det var noen, hvilke features fant du motiverende?

Sara: Likte veldig godt at man kunne spesifisere egne utfordringer når man samarbeider med noen. Det må jo ikke nødvendigvis være at man må bruke penger på noe, det kan jo være hva som helst. Så, når vi testet det så synes jeg absolutt det en motiverende faktor til å slå den andre.

AS: Var det noen features som virket mot sin hensikt, som var demotiverende?

Sara: At hvis du ikke når målet så står den og lyser rødt for resten av evigheten, det er jo selvfølgelig et slag i trynet. Men utenom det fant jeg ikke noe som var demotiverende nei.

AS: Hva synes du om utfordring-rubrikken? Var den motiverende? Hvorfor/hvorfor ikke?

Sara: Likte den veldig godt. Jeg synes det var gøy at man kunne følge med in real time. En ting er hvis man sitter ved siden av hverandre og jobber, men hvis man sitter på ulike steder er det jo nice måte å pushe hverandre på, det at man kan følge med.

AS: Følte du at applikasjonen manglet noe? I så fall, hva?

Sara: Det eneste jeg umiddelbart tenker på er at den nedtellingen ikke fortsetter å gå, men at den stopper. For da må man på en måte huske å slå den på hver gang det har gått 45 minutter. Men igjen, så kan jo det også være en god ting med at man skal ta litt hyppige pauser og slappe av.

AS: Er det noe som hadde fått deg til å bruke applikasjonen mer?

Sara: Nei, føler ikke jeg har noen umiddelbare tanker. Jeg føler at det må på en måte ikke bli for mange gimmicks eller for mange elementer fordi det blir for mye å holde styr på, også ender man opp med å ikke bruke det.

Tema: bruk av applikasjonen. Mål: finne ut av bruksmønsteret til testeren

AS: Hvor mye brukte du applikasjonen?

Sara: Tror jeg brukte den hver dag hvertfall siden jeg lastet den ned. Prøvde å holde den på hver gang jeg satt og jobbet de dagene jeg har testet den. Utenom de par gangene hvor jeg glemte å skru den på.

AS: Var det noe forskjell på hvor mye du brukte applikasjonen i starten og i slutten av testperioden?

Sara: Ja, jeg ble litt bedre på å huske på å slå den på og bruke den kontinuerlig nærmere slutten.

AS: Satt du deg et personlig mål?

Sara: Ja, prøvde meg på en test hvor jeg skulle logge og at jeg skulle ha et visst antall effektive arbeidstimer ila en dag. Men utenom det brukte jeg bare egentlig timer og utfordring.

AS: Ble dere enige om en premie taperen skulle gi til vinneren?

Sara: Ja, vi ble enige om kjøp av en kaffe. Og neste så var det en surprise, som endte med å bli en frossenpizza i min fryseskuff.

AS: Ble du mest motivert av at du kunne vinne en premie eller det at du kunne slå den andre personen?

Sara: Absolutt at jeg kunne slå den andre personen. At jeg kunne få en gratis kaffe er jo en ekstra gode, men ja.

Tema: motivasjon. Mål: finne ut om testerene synes appen var motiverende

AS: Var appen motiverende?

Sara: Ja, det synes jeg. Jeg synes det at man får lyst til å, når man logger ting, så blir alt mye mer sånn, man ser det jo på papiret om man har jobbet eller ikke.

AS: Hva ved applikasjonen var motiverende?

Sara: Det var nok de, hvis man startet en utfordring med en annen. Absolutt.

AS: Synes du det var gøy å bruke applikasjonen?

Sara: Ja, det vil jeg si.

AS: Har du jobbet mer, mindre eller likt når du har brukt applikasjonen, som du hadde gjort i denne perioden uten applikasjonen?

Sara: Jeg tror nok jeg hadde jobbet relativt likt, men det jeg føler at kan komme godt ut av en sånn type ting er at hvis man har en veldig demotiverende dag så kan man bruke det som et motivasjonsverktøy til å jobbe litt mer. Vi hadde hvertfall en sånn dag hver, og da brukte vi appen til å motivere, og da fikk vi kanskje jobbet litt mer istedenfor å bare pakke sammen og dra hjem.

AS: Har det å bruke applikasjonen endret noe på din opplevelse av å arbeide med skole denne uken? Evt. tror du appen vil endre noe på din opplevelse av å arbeide med skole?

Sara: Nei, jeg tror egentlig ikke det.

AS: Hvis du hadde brukt applikasjonen over en lengre periode, tror du at det hadde påvirket læringsutbyttet ditt?

Linn: Godt spørsmål, muligens i den grad at i og med at det kan hjelpe på motivasjonen at man da kanskje får gjort litt mer enn hva man hadde gjort uten.

AS: Etter en endt utfordring, hadde du lyst til å lage en ny?

Sara: Ja.

AS: Hva tenker du om denne applikasjonen i forhold til hold?

Sara: Jeg synes egentlig at konseptet til denne appen er litt mer interaktivt og spennende konsept fordi man kan gjøre det litt mer personlig ved at man kan samarbeid og lage litt personlige utfordringer. Vet at man på hold kan holde sammen få mer poeng, men det blir mye samme gimmick på hold hvor man kan få rabatt og kjøpe kaffe på narvesen.

Dato og tid: Fredag 8.april, 13:30

Lokasjon: Digitalt, over Zoom

Opptak: Ja

Intervjuer: Anniken Syvertsen

Intervjuobjekt (alias): Sophie

Starte med en åpen dialog for å komme i gang:

AS: Hvordan synes du testingen har gått?

Sophie: Jeg synes at testingen har gått veldig bra. Jeg kom jo litt sent i gang siden jeg var borte en periode. Men det gikk overraskende bra, hvertfall med tanke på at det var litt sånn proof of concept sånn som jeg forsto det. På slutten der fikk jeg litt problemer med at appen krasjet, men ellers gikk det bra. Følte det gikk veldig bra.

Tema: studie-rutiner. Mål: få bakgrunnsinformasjon om studentens studievevaner

AS: Kan du beskrive en typisk studieuke for deg?

Sophie: Ja, en typisk studieuke så er jeg på skolen hver dag, fordi jeg jobber som regel veldig dårlig hjemme. Så jeg er avhengig av å være i omgivelser som gjør at jeg forstår at jeg må jobbe med skole. Så jeg kommer på skolen hver dag, jeg kommer kanskje i ni-tiden og tar en kaffe med de som er her og catcher opp. Også begynner jeg å jobbe sånn klokken 10, og jobber stort sett uforstyrret frem til lunsj. Kanskje en og en halv time til to timer der, hvor jeg prøver å legge vekk telefonen og prøver å jobbe med det jeg synes er kjipest. Sånn jeg har forstått det, så er det liksom greit å starte en dag med det tøffeste arbeidet når man har mye energi. Også blir det på en måte lettere på ettermiddagen da. Fordi jeg jobber veldig bra om morgenen og ikke så bra på ettermiddagen. Etter lunsj, etter en times lunsj ca, så går jeg tilbake og har litt sånn rolig arbeid frem til sånn klokken 14-15, og etter det så har jeg som regel litt sånn snakking om hva jeg har gjort og hva jeg tenker om i morgen. Ja, det er egentlig det. Med tanke på hvordan jeg jobber, så har jeg litt klassisk musikk på ørene og når jeg skriver så prøver jeg å ikke ha noe mobil og noen forstyrrelser. Men når jeg leser, så er det mer sånn at jeg kan lese et avsnitt også sjekke snap. Og da er det litt lettere å bli forstyrret da men. Ja, ca sånn.

AS: Hvordan planlegger du og jobber med oppgaver?

Sophie: Det første jeg gjør når jeg planlegger å jobbe med noe er å vite hva jeg må ha gjort til hvilken tid. "Hva er deadline og hva er målet". Jeg er jo veldig god på å ikke komme i mål på en måte. Når jeg planlegger setter jeg veldig sjelden opp små konkrete delmål, jeg setter grove mål; "innen den uka skal jeg ha gjort det og gjort det" også klarer jeg aldri å nå de målene, og til slutt så sitter jeg på en måte igjen med et godt skippertak.

AS: Hva motiverer deg?

Sophie: Jeg synes det er artig å, eller det som motiverer meg er at jeg har lyst til å lære noe. Det er veldig sjelden karakterer som motiverer meg. Det er mer det at jeg i slutten av perioden skal kunne det. Og hvis det er noe jeg vet jeg har bruk for i arbeidslivet, så blir det mer motiverende enn ting som bare er der for å bestå et fag liksom.

AS: Pleier du å sette deg noen mål? I så fall hva slags?

Sophie: Nå er det litt enklere å se det for seg siden jeg skriver masteroppgave, og da er det er lett for meg å dele opp i kapittel. Når jeg skriver en oppgave så pleier jeg å dele opp i 'hvor langt skal jeg komme i den oppgaven' innen en uke. Men hvis jeg leser til eksamen for eksempel, eller skal lære meg noe, så pleier jeg å ta kapittel for kapittel. Så innen på en måte 'så og så lang tid' så skal jeg ha lært det kapittelet. Er ikke så god på delmål egentlig,

men når det kommer til skrivning så synes jeg det er enklere for du har på en måte noe håndfast. Sånn kapittel-oppdeling vil være det som beskriver det best.

AS: Er det noe forskjell på hvordan du arbeider i ulike emner? Hva, og hvorfor?

Sophie: De emnene jeg hadde som var veldig matematisk synes jeg var enklere å jobbe med. Det er noe med det å kunne høre på musikk og gå inn i en sone, som er mye enklere når det bare er tall og ikke ord. Da jobber jeg nok litt annerledes fordi det er mer sone-basert, og “nå er jeg inne i en boble”. Men når jeg leser og skriver så pleier jeg å jobbe litt mer sånn oppstykket, fordi da vet jeg at “har jeg fått noe ned på papiret innen klokken elleve så trenger jeg ikke være inne i den sonen”, det er på en måte svart på hvitt hva jeg har gjort. Men når det handler om å repetere og få mengde-øving i fag da liker jeg å komme inn i soner hvor jeg er sånn “ikke snakk til meg, nå er jeg inne i det”. Litt vanskelig å svare på for det er jo lenge siden jeg har jobbet med sånne fag.

AS: Har arbeidsformen og holdningene dine, eller tilnærmingen til studiet, endret seg i løpet av studiet?

Sophie: Ja, det har det. Etter jeg kom inn på masteren så har jeg vært mindre ambisiøs og mindre motivert til å gjøre det bra. Jeg vet at jeg har fått en fot innenfor. Når jeg tok bachelor var jeg mer avhengig av å få gode karakterer, så da hadde jeg et litt mer driv. Og en helt annen tilnærming til det å være student, fordi da var jeg ny i gamet, og hadde alt å tape på å ikke jobbe bra. Mens nå når man er litt mer sikret, og når man har jobberfaring og føler at fremtiden ser lys ut uansett, så blir man litt mindre motivert på en måte. Det er litt mer pausebasert nå de siste to årene og litt mer konsentrasjon og vilje de første årene.

Tema: lignende prestasjonsmålene applikasjoner. Mål: finne ut om testeren har erfaring med måle prestasjoner

AS: Har du noe erfaring med prestasjonsmålene applikasjoner eller devicer fra før?

Sophie: Ja, innen helse så har jeg, jeg har ikke hatt strava eller noe sånt sosialt, men jeg har sett på den iphone-appen, da følger jeg egentlig skritt. Det er egentlig det eneste jeg ser på. At jeg har gått så og så mange skritt hver dag. Ellers er jeg egentlig ikke så investert i sånn der målinger og sånt. Den der hold-appen har jeg brukt. Den minner meg litt om din, litt innen skole da.

AS: Ja det var neste spørsmål, om du har brukt hold og hva du brukte den til?

Sophie: Ja, jeg brukte hold da jeg leste til fag eller eksamener før. Igjen når jeg var litt avhengig av å være inne i den bobla så var det lettere å strukturere seg selv med den hold appen. Fordi det var veldig konkret sånn ‘45 minutter også er du ferdig’. Jeg har ikke brukt den så mye i det siste, men det har også vært fordi jeg brukte opp alle pengene mine, og da synes jeg det var litt vanskeligere å komme seg på hesten igjen. De var gøyere å holde på med når jeg visste at jeg hadde en stor buffer med ting jeg kunne bruke penger på. Men ja, til eksamenslesing var jeg mer avhengig av å være inne i sonen og da brukte jeg den.

AS: Ble du motivert av appen?

Sophie: Ja, jeg ble jo det. Jeg ble motivert til å sitte lenger, og ikke fikle med telefonen. For det gjør jeg jo hele tiden. Det er nesten mest det at det er en konkret måte å holde seg unna sosiale medier på i 40 minutter. Så ja, jeg ble motivert av det.

Tema: prokrastinering og utsetting av arbeid. Mål: finne ut av behovet for en slik app for den personen som testet den

- Hvor enig er du i denne påstanden: “Jeg utsetter ofte skolearbeid”

- helt enig
 - veldig enig
 - **nokså enig**
 - verken eller
 - litt uenig
 - ganske uenig
 - helt uenig
- Hvor enig er du i denne påstanden: "Jeg synes det er lite motiverende å jobbe med skole"
 - helt enig
 - veldig enig
 - nokså enig
 - verken eller
 - litt uenig
 - **ganske uenig**
 - helt uenig
 - Hvor enig er du i denne påstanden: "Jeg utsetter ofte skolearbeid fordi jeg jobber bedre under press"
 - helt enig
 - veldig enig
 - nokså enig
 - verken eller
 - **litt uenig**
 - ganske uenig
 - helt uenig
 - Hvor enig er du i denne påstanden: "Hvis det hadde vært hyppigere frister, hadde jeg jobbet mer jevnt med skole og ikke utsatt like mye"
 - **helt enig**
 - veldig enig
 - nokså enig
 - verken eller
 - litt uenig
 - ganske uenig
 - helt uenig

AS: Som student, har du følt på at det har vært problematisk med prokrastinering? At det har hatt negative konsekvenser for prestasjonene dine?

Sophie: Ja, absolutt. Jeg vet at før, på videregående, når det ikke var så mye telefon og sosiale medier og ikke så mye frihet, så jobbet jeg jo mye bedre og mye oftere i de sonene. Prokrastinering for meg er å sitte på telefonen og gjøre ting jeg vet er ting jeg synes er morsommere. Jeg blir jo stimulert av å åpne en app, jeg blir ikke stimulert av å skrive en setning. Så det er veldig sånn, det at jeg alltid har friheten til å bli stimulert gjør at jeg prokrastinerer hele tiden, fordi man vil jo bare ha det dopaminen. Så ja, det er et problem. Jeg hadde nok lært mer om jeg ikke hadde prokrastinert så mye.

Tema: applikasjonen. Mål: finne ut om brukergrensesnitt fungerte greit

AS: Hvordan synes du det var å forstå hvordan appen fungerte?

Sophie: Det synes jeg var ganske lett å forstå. Det var ikke så mye funksjoner og komponenter som gjorde at jeg rotet meg bort. Det føler jeg ofte skjer når jeg prøver nye apper. Jeg synes på en måte at omfanget på hele appen var såpass lite at det var ikke noe problem å forstå. Alt sa seg egentlig selv veldig bra.

AS: Hvilke features fant du motiverende?

Sophie: Jeg synes det mest motiverende var å konkurrere mot andre, eller challenger eller jobbe med. Jeg opplevde det som motiverende å vite at det var en konkurranse på en måte. Så når jeg, jeg prøvde bare en gang da, men da jeg prøvde mot en venn sørget jeg for at jeg skulle få den timen med en gang, for da visste jeg at det var deilig å gni det i trynet hans. Så det var motiverende. Det å jobbe mot seg selv var ikke like motiverende fordi jeg visste at premien jeg kom til å få kom til å være fra min egen lommebok på en måte. Da var det ikke premien som var det motiverende, da var det sånn 'jeg må bare ha telefonen vekk'. Det å jobbe mot andre var litt sånn "shit det her må jeg få til".

AS: Var det noen features som virket mot sin hensikt, som var demotiverende?

Sophie: Det å se på historikken over oppnådde mål og bare se "ikke oppnådde mål", det var litt demotiverende for da tenkte jeg "shit nå starter jeg i oppoverbakke" liksom. Egentlig ikke så veldig mye demotiverende.

AS: Hva synes du om utfordring-rubrikken?

Sophie: Den var fin, den var veldig bra visualisert. Det som er litt tricky er at du bare ser fulle oppnådde timer. Og jeg og han andre hadde en challenge på, det var vel en times jobbing, og da var det litt sånn 'når som helst nå kan det hende at han vinner' nå. Men da er det sikkert bare det at man må sette seg litt større mål

AS: Men synes du at det var motiverende?

Sophie: Ja, det var jo det konkurranseaspektet, man vil jo på en måte vinne. Jeg vet ikke om det var laget for å være en konkurranse eller om det bare var en klapp på skuldra til begge to, men det var motiverende å se at jeg ledet på et tidspunkt.

AS: Følte du at applikasjonen manglet noe? Var det noe du savnet?

Sophie: Kanskje noe sånn, hva skal jeg si, eksterne, eller sånn at premier kan være sponset av andre, som en kaffe på 7 eleven, noe som motiverte meg til å få noe fra andre på en måte. Fordi nå var det veldig sånn, det var på en måte, bare meg, kanskje om det var noen bedrifter som kunne spyttet inn litt og piffet opp litt. Jeg skjønner jo at det krever penger da.

AS: Er det noe som hadde fått deg til å bruke applikasjonen mer?

Sophie: Ja det er litt det samme, hvis jeg kunne ha fått premier som ikke hadde kommet fra min egen lomme så hadde jeg nok brukt det mer. Det var også litt av grunnen til at jeg brukte hold, at det var veldig mye smude premier som gjorde det verdt det. Tror vi er ganske enkle, tror vi liker å få ting gratis. Det å bare jobbe mot seg selv på en måte, kan på en måte stoppe hvertfall meg.

Tema: bruk av applikasjonen. Mål: finne ut av bruksmønsteret til testeren

AS: Hvor mye brukte du applikasjonen?

Sophie: Jeg brukte den jo litt for lite, men kanskje totalt fire dager. Og da brukte jeg den sånn, ganske mye de dagene. Men jeg satt meg for store mål så fikk ikke til noen av målene mine. Men jeg brukte den av og på i fire dager.

AS: Var det noe forskjell på hvor mye du brukte applikasjonen i starten og i slutten av testperioden?

Sophie: Ja, jeg brukte den mer i slutten. Tror det var fordi da skjønte jeg hvordan det fungerte med venner. Før det var det bare meg selv, men så så jeg at man kunne legge til

kjente folk og da var det litt morsommere og litt mer sosialt. Også skjønte jeg mer av appen etterhvert og da var det litt enklere å bare sette på en timer.

AS: Satt du deg et personlig mål?

Sophie: Ja

AS: Lagde du en utfordring med en venn?

Sophie: Ja

AS: Ble dere enige om en premie taperen skulle gi til vinneren?

Sophie: Ja, eller mer at jeg satt premien også sa han ikke noe imot det. Men vi var enige om det.

AS: Hva ble dere enige om?

Sophie: En kaffe. Det gikk vel an å endre premien underveis, det, sånn hadde jeg ligget an til å tape og premien hadde vært en six-pack med øl, så hadde jeg nok endret den i siste liten.

AS: Ble du mest motivert av at du kunne vinne den premien eller det at du kunne slå den andre personen?

Sophie: Mest motivert av å kunne slå den andre personen. Jeg kan se for meg at etterhvert hvis man bruker den mer og har flere challenges så blir den premien i seg selv mer spennende, og da vil man kanskje heller vinne den, men i begynnelsen når man bruker den så vil man bare slå den andre personen.

Tema: motivasjon. Mål: finne ut om testerene synes appen var motiverende

AS: Var appen motiverende?

Sophie: Eh ja. Jeg merket at jeg satt mer, eller jeg var mye mer i den sonejobbingen. Fordi med en gang du trykker på en timer, for min del iallefall, så er det ikke nødvendigvis det at du vet at det er en timer på gang, og at jeg ikke kan røre telefonen, men jeg føler at det setter i gang en prosess hvor jeg vet at nå er det 40 minutter med jobbing. Uansett hva du gjør med telefonen, så er det på en måte en sånn innstilling. Det var en ting jeg stusset over, og det at jeg kunne være på telefonen selv om timeren gikk. Men, det var litt digg og. Jeg føler det er mer det mindsettet man eier når man trykker på en timer, at man skuffer seg selv litt mer når man er inne på telefonen selv om man vet at det går.

AS: Hva ved applikasjonen var motiverende?

Sophie: Timer, var det jeg brukte mest. Og for det var vel på timeren du kunne låse skjermen, og jeg var avhengig av å kunne låse. Så det, og det å kunne lage challenges egentlig.

AS: Synes du det var gøy å bruke applikasjonen?

Sophie: Med meg selv så var det ikke nødvendigvis så gøy, men mot andre var det gøy. Og det er jo mer at det på en måte, for meg selv var det mer disiplin, det var ikke så mye spennende over det, det var bare sånn 'dette må jeg gjøre'. Mot andre var det jo konkurranse på en måte, og da blir man jo mer motivert.

AS: Har du jobbet mer, mindre eller likt når du har brukt applikasjonen, som du hadde gjort i denne perioden uten applikasjonen?

Sophie: Det å jobbe for meg er å være på skolen. Hadde nok vært på skolen like mye, men tror jeg hadde nok vært mer på telefonen hvis jeg ikke hadde hatt den. Kanskje ikke så mye, men jeg vet at jeg hadde vært mer på telefonen

AS: Så kanskje ikke mer tid men mer effektivitet?

Sophie: Ja det kan man si. Og hvis jeg da hadde vært på telefonen hadde jeg følt mer på dårlig samvittighet, så det er jo bra, at den pusher meg i riktig retning.

AS: Har det å bruke applikasjonen endret noe på din opplevelse av å arbeide med skole denne uken? Evt. tror du appen vil endre noe på din opplevelse av å arbeide med skole?

Sophie: Tror hvis jeg hadde gått over en lengre periode så tror jeg det, fordi da hadde jeg rukket å komme inn i en rutine på det. Jeg tror jeg brukte den for lite til å få den der rutinen, og få den vanen inn. Nå var det mer sånn spennende prøveperiode, det var nytt og spennende. Det er litt mer, hvis jeg hadde fortsatt så tror jeg hadde kommet inn i en god rytme, det rakk jeg dessverre ikke komme inn i.

AS: Hvis du hadde brukt applikasjonen over en lengre periode, tror du at det hadde påvirket læringsutbyttet ditt?

Sophie: Ja, det hadde jo på en måte implisitt gjort det ved at jeg hadde jobbet mer effektivt. Men der er på en måte spørsmålet om jeg hadde gått over til å jobbe færre timer effektivt, eller færre timer mindre effektivt. Kanskje læringsutbyttet hadde vært det samme, men at jeg på slutten av dagen hadde hatt litt flere timer til overs. Det er litt vanskelig å si. På en måte hadde det kanskje økt læringsutbyttet siden jeg hadde vært mer konsentrert når jeg først hadde jobbet. Men jeg hadde kanskje latt det bli til at jeg hadde jobbet mindre, men mer effektivt. Det hadde nok endret seg litt ja.

AS: Etter en endt utfordring, hadde du lyst til å lage en ny?

Sophie: Ja, det gjorde jeg også. Det var litt sånn. Det var det at jeg var gira på å starte en ny, men ingen av de jeg spilte mot hadde lyst eller godtok da.

AS: Hva tenker du om denne applikasjonen i forhold til hold?

Sophie: Jeg synes de dekker to ulike behov, fordi med hold appen, er det enklere å motivere meg selv å bare jobbe med meg siden premien kommer utenfra. Men med denne var det mer motiverende å jobbe mot andre, fordi du har det konkurranseelementet. På hold har den at du kan samarbeide med andre og få mer poeng, men det er på en måte fortsatt bare for deg selv. Denne var litt mer konkurranse og litt mer lekent, det skiller den litt fra hold. Jeg tror hvis den her hadde fått den samme om at hvis du går ut av den så stopper den timeren, så hadde den sikkert blitt litt mer troverdig når man konkurrerer mot andre fordi da er det litt mindre tillit.

AS: Har du noe du ønsker å tilføye som ikke kom frem i intervjuene?

Sophie: Jeg synes det var skikkelig bra, jeg var imponert. Designet var veldig clean, det var veldig lett å forstå. Alt var veldig intuitivt, om det har noe med at jeg har vært mye borti apper det vet jeg ikke, men veldig bra jobbet. Jeg liker idéen.

