

Development and testing of a net-based resource to guide teachers in assisting students with mental health challenges.

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Acknowledgements

This master's thesis marks the end of our study in Multimedia and Educational Technology at the University of Agder. It also marks the end of a demanding, but a highly educational process, which since 2015 has challenged us and given us the opportunity to immerse ourselves in new knowledge within our field. Our choice of topic is highly relevant in terms of mental health and how this affects middle school students today, as well as the corona pandemic that has contributed to affect young people's life quality. The purpose of this thesis is to develop a resource that can help to guide teachers in a hectic school day.

Tankeverk was successful thanks to Prof. Ingrid Lund, Teachers, School health nurses, and Edvin Bru. We want to give a big thank you to Prof. Ingrid Lund for the time you set aside for us. The way you delivered your knowledge about mental health, classroom environment and bullying is invaluable and we appreciate the insight we gained. Thank you to our target group (teachers) and school health nurses who set aside their precious time to help us improve the net-based resource. Many thanks to the author and Prof. Edvin Bru and the publishers (Universitetsforlaget and Fagbokforlaget) for allowing us to use their work in the resource.

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Abstract

This thesis will seek answers to what extent teachers are properly equipped when helping students with mental health problems, how a net-based resource can assist teachers in handling this challenge, and what approaches teachers recommend for an easy-to-use net-based resource. We iteratively prototyped a net-based resource called *Tankeverk.no* using a Human-Centered Design (HCD) approach by involving key stakeholders, experts, health personal, and teachers. The prototype combined with the in-depth interviews and questionnaires gave insights into the relevance, quality, and user acceptance of our solution. The vast majority of teachers who participated in this study expressed that they are in need of low-threshold net-based resources customized to their needs and requirements. Teachers highly appreciated the content and design of *Tankeverk.no*, and the findings confirm that the concept is needed. The results confirmed that teachers are facing tough challenges every day, and would like to do much more for their students. We hope we could raise awareness for more investigations and practical solutions to advise them.

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Chapter 1

Introduction

"Thinking fifteen years back in time, to times where I never talked to anyone and hid everything behind a smile. As a defense mechanism, I sat up a wall to create distance between me and everyone around me. Everyday life was spent observing the other children at school and, to the best of my ability, holding in anger and frustration. It took three years before a teacher I did not really have a close relationship with, sat down with me and asked me how I was doing. My tears flowed uncontrollably and for the first time, I told someone about my circumstances. Thanks to this teacher, I am sitting here today and can write this master's thesis. Over the years, I have met and been taught by many teachers. I have witnessed a helpless teacher when a student had an epileptic seizure triggered by stress. I have observed proficient teachers who have put their students first, but also observed teachers who have been unlucky and may have made the wrong comment to a student struggling with mental health-related to stress, eating disorder and bullying, etc. Now that the whole world has been affected by the corona pandemic, several teachers and young people have appeared in the news and expressed their concerns about mental health."

— One of the authors'

Apart from the family, teachers are the ones who spend most time with students. Because of this, a teacher becomes one of the most important persons in a student's life. Teachers have the opportunity to observe the students' characteristics, knowledge, and development in a completely different way than parents. They have the opportunity to recognize both negative and positive changes in the student's behavior and performance. Teachers are also in the position where they can really help students who may experience mental health challenges.

The purpose of this particular project is to determine if teachers in middle school are in need of a digital tool that can offer critical advice, enabling them to help students showing signs of mental health challenges. Teachers are in fact obliged to ensure that all students have a safe and good psycho-social school environment [1]. All schools are obliged to have predefined plans of action regarding students' mental health, and to the best of their ability try to facilitate a safer and better learning environment [2]. When teachers suspect that a student's behavior may be caused by an underlying problem, our assumption is that it would be helpful if they had access to a free and accessible resource that informs about which typical signs to look for, and includes suggestions on how to meet and facilitate the everyday school life for students with mental health challenges. Based on findings from several research methods conducted in correlation with this project and several external studies, there seems to be a need for more resources regarding students' mental health, targeted towards teachers in middle school.

1.1 Background

This project is based on personal experiences and an interest in mental health issues, amplified after reading various news and articles about the youth and their struggles in society today. Over the years, society has gained a greater focus on mental health. Mental health among middle schoolers' has been focused on for a long time, and figure 1.1 illustrates that mental health issues among young people in this age group are increasing [3] [4].

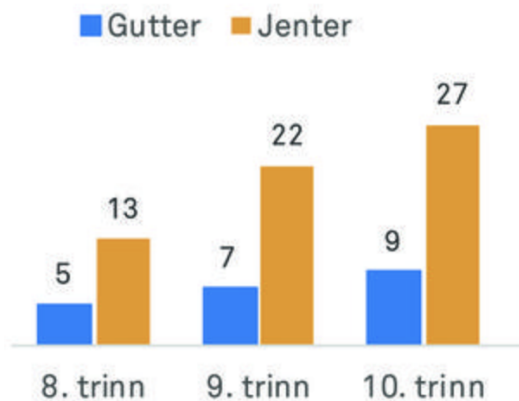


Figure 1.1: Percentage of boys (blue) and girls (orange) from 8th-10th grade who are distinctly afflicted with depressive symptoms. Source: Ungdata.no [4]

The pressure young people live with today, where they have to perform and do well at school and in social contexts is demanding and energy-draining [3]. Young people spend a great amount of time at school where they have to acquire new knowledge and form good friendships, but this is not something they can do alone. According to rule § 1-1 of Lovdata [5], How teachers guide and encourage a mental health promoting arena, has a lot to say in terms of creating a positive or negative learning environment for the students. This can contribute to influence students' mental health, not only today, but also in the future [5]. After the world was affected by COVID-19 [6] in the beginning of 2020, researchers have seen that young adults' life quality is worsening [7], because of the pandemic changing their life drastically overnight. The pandemic is causing schools across Norway to temporarily close down and conduct online education. Teachers and middle school students around the country have expressed their frustrations and concerns publicly in the media and national news regarding learning quality, overworked staffs, difficult situations, and mental health related to young students [8]. When the pandemic is over, all students will, hopefully, return back to school. In this scenario, it is our assumption that it would be helpful for teachers to be prepared and better equipped to accommodate vulnerable students.

1.2 Problem Statement

When a teacher notices negative changes and recognizes that a student is struggling, they must go through a formal procedure to understand the cause and reason. The reason for students' struggles can be many: anxiety, stress, motivation, social media, pressure, friends, bullying, loneliness, suicidal and more. Teachers might be unsure and try to follow the school's guidelines [9], but the guidelines might not cover the specific issues the students are struggling with in sufficient detail. Each school has guidelines to cover internal problems at school, these guidelines often focus on bullying and harassment.

Our intention is to create a complementary net-based resource called *Tankeverk.no*, with various features such as animated cases, text-based information, and illustrations. The net-based resource is meant to guide teachers in assisting students struggling with mental health issues. To succeed in this project, user studies were the main priority. This resource focuses on the user and is therefore developed by involving stakeholders throughout a human-centered design process. Conducting various tests and evaluate relevance and user acceptance of the resource and its content, can uncover critical deficiencies and possible improvements.

The intended purpose was that *Tankeverk* should serve as a *low-threshold* and optional resource, available for all teachers in middle school. The resource should address issues such as anxiety/depression, stress, and pressure, and lack of motivation, and "skolevegring" (school refusal). In a meeting together with Professor of Special Education Ingrid Lund [10] (16.12.20), she advised us to implement an additional category to the net-based resource, purely as a preventative measure [11]. Her experience is that creating a safe and good environment can help to reduce the number of unpleasant episodes for vulnerable students. This category should contain specific advice on how teachers can achieve this in a classroom. To ensure the quality of the product and to create credibility for the target group, it was crucial that the academic content was collected from sources, written by or quality assured by experts on the field.

1.2.1 Hypothesis and Research questions

Based on the problem statement, this project will investigate the following: A digital tool can offer teachers critical advice to help students with signs of mental health challenges.

- RQ1: To what extent are teachers equipped for helping students with mental health problems?
- RQ2: How can a net-based resource assist teachers in handling possible mental health challenges of their students?
- RQ3: What approaches do teachers regard as recommended for an easy-to-use net-based resource?

Scope of work

The final version of the prototype is the result after applying several different research methods and following an iterative concept development. The progression in the work was regularly validated by our supervisors to assure a high quality of the product and concept. Throughout the development of *Tankeverk*, a user-centric process was prioritized. To identify the needs of our target group, a survey was sent out where answers were collected from a total of 62 participants (quantitative research). To ensure the quality of the survey, interviews were conducted with a selection of 7 people from the target group. Analyzing the results from the quantitative research helped us to define the most critical user requirements regarding net-based resources. Before starting the process of development, we consulted an expert in the field, Professor Ingrid Lund [10]. She is highly respected, very proficient, and has several years of experience within the field of mental health. She offered us invaluable advice on what to avoid and guided us in a direction towards making a successful resource. After establishing the user requirements, the process of developing the net-based resource begun. When the process of development was completed it was time to test *Tankeverk*. In order to weed out serious flaws and shortcomings concerning design and usability, a pre-test consisting of 5 participants, was conducted. This was carried out prior to the actual testing of the product, which

included in-depth interviews (qualitative research). The participants contributing to the user testing of *Tankeverk* consisted of 2 experts and 4 teachers.

1.3 Limitations and Constraints

Small-scale research

In relation to this being a relatively small-scale research with a fairly limited number of participants, the findings may therefore apply to specific individuals and not necessarily generalize to any other population of teachers.

COVID-19

Due to COVID-19, the government had to impose restrictions [12] both nationally and municipally to limit the spread. The restrictions, lockdowns, and recommendations changed weekly if there was an increase in infection. The restrictions became a limitation for the project, due to difficulty recruiting participants for interviews and user testing for the project. This project depended on communicating and gathering information from experts, but since COVID-19 affected people's lives, it was challenging to reach out and gather participants.

Recruiting

Recruiting participants for interviews, surveys and user testings in relation to the different phases of the project was demanding, partly due to the pandemic. Recruitment and interviewing of teachers and health nurses happened during the early stages of the project (early November 2020). This was during the time when the government encouraged the population to stay at home and avoid contact with people outside the primary family. Having to follow the guidelines made it even more challenging to interview the participants since all communication took place via zoom [13]. In addition to the practical implications, our experience was that mental health was a heated subject for some teachers. When approaching the target group, attempting to recruit participants for this research, we experienced some resistance and hesitation when the term "mental health" was mentioned. Achieving critical mass for this investigation was therefore difficult.

Time aspect

Having only two people work on a project like this was limiting. Every phase of the project was important and had to be prioritized to create a usable and functional prototype. This forced us to prioritize all three phases of the project as equally important leading to boundaries had to be set at an early stage of the project. Setting boundaries was important to keep the project at a feasible level and to have clear goals for where we wanted to be as time came closer to the deadline.

Limited content

Mental health covers a broad spectrum of relevant and important topics. Unfortunately, the prototype could not cover all subjects related to mental health. For the development of the prototype to be achievable, a selection of three categories was prepared. In addition to not being able to cover all subjects, the guidelines and information from the actually covered subjects will not match all thinkable occurrences in a school context.

Universal design and financial expenses

This project was funded by the students themselves and as students, an infinite amount of money cannot be spent on the project. As a result, the technologies that were used to develop *tankeverk.no* had some limitations. In the last version of the prototype, it was only the animated films that were universally designed. In fact, the Universal Design of ICT is a legal requirement for both public and private sectors in Norway, elaborated in section 3.3. For instance, text-to-speech should always be available on websites. *Tankeverk.no* has too many graphic elements which are uploaded to the web page as an image and not as HTML elements. This is a prerequisite in order for text-to-speech to function. Also, the text-to-speech plug-in that was available would cost extra and was therefore excluded. Another inconvenience, besides not enabling text-to-speech, is restrictions in regards to accessibility. Implementing text as images and not as HTML elements makes it impossible to search for the text, since search engines can not read text from images.

NSD

For the product to contain quality-assured information about mental health, the information was gathered by interviewing experts and selecting participants from the target groups. This was extremely valuable since they are the domain experts [14] and hold a tremendous amount of knowledge and useful information. There are other ways to collect information besides conducting interviews. Sending out various surveys can be used to gather information to quality-assure the content being implemented to the resource. This project required plenty of information from experts and the target group. One must follow NSD's (Norsk senter for forskningsdata)[15] rules and guidelines to ensure that all personal data are being properly handled. It is important to be absolutely sure that no information can be traced back to the participants in any way. It was important to read and understand the guidelines in order to know when it was necessary to submit an application form, and when it was not. It was not necessary to submit an application if no personal data would be processed.

1.4 Structure of Thesis

The introduction (chapter 1) is followed by the State of the Art in net-based resources regarding mental health (chapter 2). Chapter 3 will present the theoretical background that substantiates the findings in our results. In chapter 4 Methodology, we explain the Human-centered design process used in the planning and design of the net-based resource and using a mixed-method research approach. Chapter 4 will also present our entire research plan. In chapter 5 Development process of the net-based resource, the technical solutions implemented, tools, and design choices regarding *Tankeverk.no* will be addressed. The chapter involving the results and evaluations (Chapter 6) will present and discuss the results from the user testing, and evaluate *Tankeverk* to the requirements. Lastly, in the conclusion (chapter 7) we assess our findings, answers the research questions made prior to this project as well as introduce important new insights and suggest future work.

Chapter 2

State of the Art

This chapter will address the state of the art related to this project, starting with the school's responsibility, the most prevalent issues among today's youth, and what measures today's schools already have implemented. There will be an evaluation of existing programs and resources, including their alleged shortcomings as well as suggestions on what could be improved. In addition to addressing the state of the art, this chapter will contain facts that hopefully can guide us in the right direction towards answering our research questions, elaborated in section 1.2.1.

2.1 School responsibilities

According to regulations, teachers today have a duty to intervene, notify and follow up when they notice or suspect students not having a safe and good school environment [1]. The decentralized plan for competence development in schools, emphasizes on the school owner's responsibility for implementing its own competence development measures. One out of three priority areas shall be about the students having a safe and good learning environment [16]. The school's action plans often focus on the main problem that applies to the individual school. One recurring problem seems to be bullying. Since great emphasis is placed on finding solutions to resolve bullying conflicts, a conscious choice was made to implement topics to *Tankeverk* that is less focused on. The Directorate of Education came up with a new professional renewal plan [17] that started in the autumn of 2020, where the focus was on implementing *Public health and life skills* as an interdisciplinary theme into the Norwegian curriculum:

“Public health and life skills as an interdisciplinary theme in school shall provide students with competence that promotes good mental and physical health, and which provides opportunities to make responsible life choices. In childhood and adolescence, the development of a positive self-image and a secure identity is particularly crucial.”

“A society that facilitates good health choices for the individual is of great importance for public health. Life mastery is about being able to understand and be able to influence factors that are important for mastering one's own life. The theme will help students learn to deal with success and adversity, and personal and practical challenges in the best possible way.”

“Relevant areas within the topic are physical and mental health, living habits, sexuality and gender, drugs, media use, and consumption and personal finances. Value choices and the meaning of meaning in life, interpersonal relationships, being able to set boundaries and respect others, and being able to handle thoughts, feelings and relationships also belong under this theme.” - UDIR [17]

The government decision for this implementation implies a need for enlightenment about the subject. In order to promote, create and provide knowledge about public health and life skills for the students, the teachers themselves must have knowledge about the topic. This will enable teachers to educate, create a safe learning environment where everyone is included, and facilitate great diversity [11] [18].

Possible consequences of not having proper routines and good resources for teachers, where the goal is to detect struggling students, can lead to reduced life quality, life skills, and absenteeism among middle school students [19]. Some teachers could also experience a more hectic workday and remove the focus from learning, which possibly can reflect badly on the quality of the students' learning outcomes [19].

2.2 Mental health challenges among youths

According to a research paper published in 2020 by the Norwegian welfare research institute, NOVA [4], Norwegian youths are generally doing well. However, mental health issues among young boys and girls have in fact increased during the last decades. Some of them unfortunately end up in such a desperate situation, that they see no other option than attempting to take their own life. Suicide is actually being considered as one of the biggest threats to public health among young people [20]. NHI (Norwegian Health Informatics) reported in 2019 that almost a third of all children and young people say that they have had suicidal thoughts, and more than one in ten young people has tried to harm themselves [20]. Figure 2.1 illustrates that the extent of mental health problems among young students has slightly increased over the years and that girls seem to have a greater risk of being afflicted with depressive symptoms than boys [4].

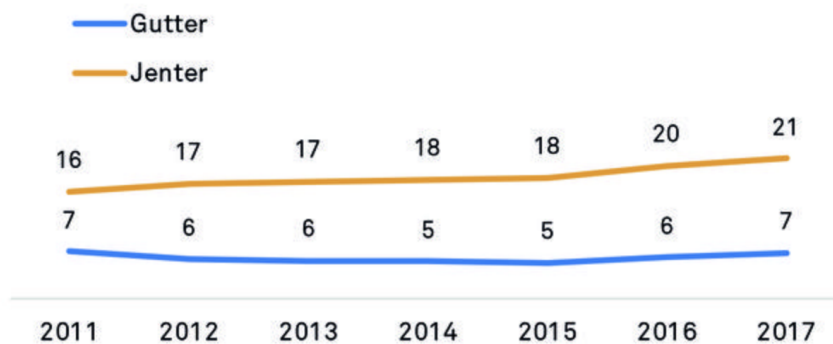


Figure 2.1: percentage of boys (blue) and girls (orange) in 8th-10th grade who are distinctly afflicted with depressive symptoms over the years. Source: Ungdata.no [4]

In 2018, FHI published a public health report that revealed statistics about mental health among children and youths [3]. The report revealed that there are significant differences in the mental challenges that occur in girls versus boys. Boys seem to have a higher risk of developmental disorders that debut early in life, such as ADHD, autism spectrum disorders, and Tourette's syndrome, and behavioral disorders. Without knowing why, in puberty, there is a significantly larger increase in mental disorders and challenges among a larger proportion of girls than among boys. Girls also show a higher tendency to developmental disorders such as depression, anxiety disorders, adjustment disorders, and eating disorders at this stage in life [3]. Apart from these statistics, the report concluded that there is a need for more knowledge about the prevalence of mental disorders among youths. The youngest members of our population spend the majority of their time at

school. Perhaps it would be beneficial to equip our teachers with tools that serve critical advice, in order for them to help students showing signs of mental health challenges?

Consequences of the COVID-19 Pandemic

2020 and 2021 have been challenging years for the majority of the world's population due to the COVID-19 pandemic [21]. It is unclear to what degree and how the subsequent closure of society, infection control measures, and insecurity have affected children and young people's mental health. However, the Norwegian Institute of Public Health (FHI) reports that the consequences, as a result of the pandemic, can be severe for a large group of vulnerable children. This includes youths already struggling with mental health challenges [22]. Vulnerable students who are already struggling are most exposed during the pandemic, but statistics reveal an increase in mental health problems among young people who are not in the vulnerable group as well [23].

The Corona pandemic has forced the Norwegian government to initiate strict regulations that all schools must adhere to [24]. Several experts have expressed their concern for the young students who are vulnerable and have suffered consequences due to the regulations. According to the director and leader of the coordination group for vulnerable children and young people, Mari Trommald, there may be as many as 200,000 children in 2021 in Norway who are particularly vulnerable [25]. An important factor to have in mind is how to take care of students and detect problems in this difficult situation. However, it is equally important to make the necessary preparations and precautions for how the teachers can be equipped when supporting the students, and how to handle any problems they may have when the pandemic is over and school is back to *normal*.

Mental health challenges among youths are undoubtedly a problem, but what exactly is the selection of resources, and what is available to teachers today?

2.3 Existing resources

The use of programs, as an external resource, are actually relatively widespread in Norwegian schools. A research paper published by NOVA in 2014, revealed that 77 percent of the schools actively use external programs when attempting to improve the school environment [26]. The programs vary from low-threshold programs where the content and form are open for interpretation by each individual teacher, to more extensive programs where the school has a focus on one or more specific problems and working targeted towards a solution [19].

To clarify, a *low-threshold resource* in this context is a free service where the users do not need a referral from a doctor, the opening hours are adapted to the targeted group and competent personnel is usually available. Low-threshold services implemented by the municipality often include various forms of health and social work assistance, accommodation, psychological services, crisis interventions, and various meeting places [27] [28].

One can see a difference in how the resources are expressed. It may seem that the target group and purpose have an influencing factor regarding the form of expression. Some of the resources convey a *Clinical* expression ("Showing no character and warmth" - Cambridge dictionary, 2021), while others reveal a more emotional expression. Net-based resources more or less similar to *Tankeverk*, were reviewed based on design principles, focusing on the parts regarding user experience (UX) and user interface (UI). The design principles in question are elaborated in chapter 3 (section 3.3).

Activity plans

Activity plans can not be directly compared to the other resources mentioned in this chapter, but are included to present what all schools, without exception, have in common. Also to emphasize the responsibility the school has regarding acting and implementing measures to prevent and/or avert undesirable occurrences concerning students' school environment.

Teachers and all school staff in Norway are obligated by law § 9A-4 [1], to act and intervene when detecting shortcomings in each individual students' school environment. The law specifies that the school is obliged to create and implement a written plan (activity plan) when measures are to be taken. The content of the plan must address: a) which problem the measure is to solve b) what measures the school has planned c) when measures are to be implemented d) who is responsible for the implementation of the measures e) when measures are to be evaluated.

"Skolehelsetjenesten" (The school health service)

Students in primary school, middle school, high school, and all people between the age of 5 and 20 years in general, are entitled to receive free health services by *The school health service*. The students can get help from a health nurse and sometimes also a school doctor, physiotherapist, and psychologist. The students do not need to have an appointment to talk to a health nurse, they just have to show up (so-called drop-in). *The school health service* is available for students and parents and shall provide them with advice and guidance to promote the mental and physical health of the students, and to prevent illness and injury.

PPT (Pedagogisk-psykologisk tjeneste) is also a part of *The school health service* which purpose is to offer assistance for children, young people, and adults with special needs throughout their educational process.

Social media - "Helsesista"

Tale Maria Krohn Engvik is a Norwegian health nurse [29]. She is also the person behind the pseudonym and *snapchat*-account [30], *Helsesista*. In 2016 she found a unique way to reach out to thousands of followers conveying important and credible knowledge where her main focus was directed to students in high school. The intended purpose of the initiative was to let the students at the school, where she was employed, know where she was and when she was available for them. The account spread quickly and not long after, she was called "hele Norges helsesista" (the whole of Norway's helsesista) [31]. She experiences *Snapchat* as a great way to get in touch with young people and having them share questions and concerns about their health issues anonymously, hence more freely [31].

Helse Norge

To provide informational content about health in general, the Norwegian health authorities established a website called "*helsenorge.no*" in 2011 [32]. The target users are all the Norwegian residents and patients where the content is distributed by several credible healthcare sources (E.g, *helsedirektoratet* [28], *helsebiblioteket* [33], *FHI (folkehelseinstituttet)* [34] and *Legemiddelverket* [35]). The website describes their purpose and goals like this:

"Helsenorge.no is designed to give the individual patient or their relatives a better and easier encounter with the healthcare service, and help them increase their ability, strengthen the patient role and encourage better health.

- *Make it easier to find and choose a therapist.*
- *Provide access to your own health information.*
- *Offer self-service and the opportunity for self-help.*
- *Provide information and advice on good health and lifestyle, symptoms, illness, treatment, and remedies”*

” - (Translated by one of the authors)

This particular resource offers general, free and quality-assured information. Users also have the option to log in with their personal Electronic-ID [36] and receive confidential information about their health, received health services, medical records, etc.

The website has a clinical expression. One can assume that this is because *Helse Norge* is a public website where the resource contains the academically correct information, translated so that the common people will understand. When the target group is so large, a clinical impression can be seen as a natural choice to build credibility to a larger group. The users of *Helsenorge.no* are mainly presented with a lot of text and few pictures, illustrations, videos, etc. The user interface is clear, but it is easy to get lost when following the different links. The website contains several links to other websites and resources which can be an advantage in terms of limiting the amount of information on the pages.

Spinnville følelser

Spinnville følelser is a free online resource about emotions aimed at children of age 6 to 12 years [37]. The main purpose of the resource is to teach children to understand their own and others' feelings and help teachers to meet children's feelings in a wise way. The resource includes teaching programs based on the content provided, as well as a digital course where the children will solve problems themselves. *Spinnville følelser* was developed by the Department of Child and Adolescent Mental Health (ABUP), Sørlandet Hospital.

In comparison to *Helse Norge*, *Spinnville følelser* has a much more emotional expression. The first impression when visiting the website is that it has a coherent design expression with aesthetically appealing use of colors and illustrations. The website is easy to navigate around due to an easy-to-use layout with minimalist construction, where the header is unchanging and exactly the same on all pages. The use of different colors makes it easy for the user to know which page/category they are currently visiting.

Voksne for Barn

Voksne for Barn is a non-profit member organization. Their primary goals are to influence politicians and decision-makers, ensure that children and young people have the best conditions for growing up safely and well, gather and disseminate knowledge about children's experiences and needs, give children learning that strengthens their mental health and help adults who have concerns about children [38]. The organization provides several programs, available for members only. Membership requires a license fee.

When visiting the website, one is greeted with lots of information that is presented neatly with a clinical touch. However, the website uses a lot of photos, videos as methods of dissemination, which brings out an emotional effect. Coherence is created by consistent use of the color blue throughout the design. The first page is a bit unstructured in terms of composition and placement of various elements which can be perceived as a bit messy. However, the header is consistent on all pages helps to make the website easier to navigate.

"RVTS sør" (Regionalt ressurscenter om vold, traumatisk stress og selvmordsforebygging.)

According to the website, *RVTS Sør* strives to train professionals as well as non-professionals, where the goal is to improve their relational skills and to become more empathetic helpers [39]. The primary target group for *RVTS Sør* is the public service apparatus. But, the different programs and courses are also targeted towards everyone who works with children, young people, and adults. In addition to courses and conferences, they have teaching materials that can be ordered separately. *RVTS Sør* provides a wide selection of different resources such as publications, movies, websites, podcasts, and webinars. *RVTS Sør* does not supply free of charge services and the range is limited to the southern region of Norway.

the website is fairly easy to navigate and the front page is well structured. However, it is not as clear what the resource is about based on the information the user receives on the front page. The user is presented with a word in capital letters "MENNESKEMØTEKOMPETANSE" (human meeting competence), which makes little sense to the user without any kind of context. The first noticeable feature is the calendar of events and activities arranged in the southern area of Norway, during the next few days. The base on the page itself has minimal use of colors but compensates by using several photos containing color. The color red is consistent throughout to clearly create coherence between the different pages. In some places, the use of red can be a little overwhelming and make the text in a contrasting color less readable.

Mitt valg

Mitt valg is a life skills program focusing on social and emotional learning, mental health, critical thinking, and professional development [40]. *Mitt valg* has four different programs which every school can sign up for. One of the programs offers a tailored course where the content is customized to the individual school. *Mitt valg* consists of over a hundred digital teaching sessions that are highly relevant in relation to the subject renewal, with special emphasis on the interdisciplinary theme *Public health and life skills* (2.1). The program is available for all schools to sign up, however, the course is 'not' free of charge.

The front page is clear and immediately gives an impression of what the resource is about. The website is easy to navigate around due to an easy-to-use layout, with minimalist construction and a header that is consistent on all pages. In order to access the programs that *Mitt valg* provides, one must have access to a user account. This made it difficult to assess these. The information is presented with a lot of text, but the website uses photos as a method of dissemination, which contributes to an emotional effect. The use of color is minimal, but the color red in the logo is consistent throughout the design. To create a difference between the pages, each category is assigned its own faint color.

Bruk hue

Bruk Hue is a free educational program on cyber-etiquette and cyber-bullying developed by Telenor and Røde kors [41]. The goal is to create a better classroom environment, both at school and on the internet. To access *Bruk Hue* one needs a personal account. The information required from the user is the first name, last name, and e-mail address belonging to your municipality/school. After making an account, students follow an interactive story on a mobile, tablet, or PC and make choices on behalf of the characters in the film. The teacher then receives an overview of the choices the students made, completely anonymously. For further discussion and reflection in the classroom, the teachers are also able to download a presentation based on the data received from the students' answers.

The front page of *Bruk Hue* immediately gives an impression of what the page is about. *Bruk Hue* has an emotional expression by using aesthetically appealing illustrations, colors, photos, and videos. The website is easy to navigate due to an easy-to-use layout with minimalist construction and a header that is consistent on all pages. In order to access the videos that *Bruk Hue* provides, one must have access to a user account. This made it difficult to assess these. However, the website provides small teasers that give the user a taste of what to expect. Based on the teasers alone, the content seems like it is professionally created and edited to capture the target audience's attention.

Prosjekt "Vær i skole" (ViS)

ViS is a project by BUP (Child and adolescent psychiatry) in collaboration with two middle schools in Bodø, Norway [42]. Their initiative has been to have an advisor in mental health available every week with the purpose of assisting students with their concerns and/or mental health problems. The advisor is supposedly available for conversations with students and/or their parents/guardians, as well as assisting management, teachers, nurses and PPT if needed [42]. This project is a low threshold offer in the sense that it makes the help more accessible to users. However, ViS does not offer a digital solution. This resource requires financing on a municipal level.

Since the project does not have an affiliate website or provides a digital option, it is not possible to evaluate the program based on user interface and user experience.

Tankevirus

Tankevirus is a mastery course developed by the Norwegian psychologist and researcher Hanne H. Brorson [43]. The target group for this course is adults (over 16 years) with mild to moderate mental illnesses. *Tankevirus* is a program about normal psychology (how most people think, feel and act). It contains a popular science program series based on a book with the same name, where the duration of the program is three hours. The course describes negative thoughts as various thought viruses that can be treated with psychological vitamins. The intended goal is for the students to apply the knowledge from the program series into their own lives. The course is made available, free of charge, for high school teachers only. To access *Tankevirus.no* a personal account is required. Even though the course is tailored to help adults over 16 years old, all other schools, including middle schools, and interested organizations can sign up for a license fee.

In order to access the programs that *Tankevirus* provides, one must have access to a user account. Without login options, the website is a purely informational website that promotes the program/book. This made it difficult to assess the user interface and user experience. The website is easy to navigate around. The use of color is absent, but the color grey and white is consistent throughout. Images are used to refresh an otherwise monotonous expression.

Olweusprogrammet

Olweusprogrammet's purpose is to be used by schools to reduce existing bullying problems, prevent bullying from happening and create a safe and good learning environment for everyone [44]. The measures are divided into three levels; School level, group level, and individual level. The measures include on a school level is a student survey, which purpose is to anonymously map the extent of the problem at the individual school, highlight the anti-bullying work, improve inspection, as well as anchoring in the coordination committee, environment committee, and pedagogical discussion groups (study and supervision group for staff). On a group level, the measures include establishing school rules against bullying, regular class meetings (students/teachers) and parent meetings

(parent/teachers). The measures on an individual level contains structured conversations and follow-up of victims of bullying and bullies and conversations with parents of students involved. Since the *Olvusprogrammet* requires organizing and financing it does not classify as a low-threshold resource.

Since the project does not have an affiliate website or provides a digital option it is not possible to evaluate the program based on user interface and user experience. The information is clinically presented on the website *norceresearch.no*, purely to promote and inform about the program [44]. This made it difficult to assess the user interface and user experience.

#Psyktnormalt

#Psyktnormalt is a teaching program focusing on middle-school students' mental health [45]. The purpose of the program is to promote "livsmestring" (life skills), provide the students with strategies and useful tools to master thoughts and feelings and give information about mental health. The program is available for schools to sign up for a license fee. The duration of the program is four school hours, divided into four weeks. There is also a separate section for teaching, developed for teachers and parents. The program is completed in collaboration between, Modum municipality and Modum Bad, the Education Agency, Søndre and Nordre Modum middleschool, PPT, the Health and Social Services, the School Health Service and Modum Bad's course and competence center. *#Psyktnormalt* does not classify as a low-threshold resource since it requires organizing and financing.

Since the project does not have an affiliate website or provides a digital option it is not possible to evaluate the program based on user interface and user experience.

Rask psykisk helsehjelp (RPH) (Rapid mental health care)

RPH is a free, easily accessible, and low-threshold service for people over the age of 16 with mild or moderate anxiety and/or depression, incipient substance abuse problems, and possibly difficulty sleeping. The service can be contacted directly and no doctor's referral is required. *RPH* offers guided self-help online, coping courses and conversational therapy, and various forms of cognitive-behavioral therapy. This service is (as of 27.01.2020) only available in 62 out of 356 Norwegian municipalities and districts [46] [47]. *RPH* is not targeted towards teachers but can serve as relief regarding their workload by being an easy channel to refer the students to.

As well as several other resources mentioned in this chapter, *RPH* does not have an affiliate website or provides a digital option. Therefore it is not possible to evaluate the program based on user interface and user experience. The information is clinically presented on the website *napha.no*, purely to promote and inform about the resource [46].

2.3.1 Evaluation of Existing Resources

A common denominator that recurs in all of the programs reviewed in this chapter, is that they are resources made for enlightening the users about mental health, improving young students' mental health, and/or work future-oriented as preventive measures.

There are only a few resources available for teachers today, that can be classified as *low threshold resources*. Most of the measures taken to prevent mental illness in middle school students, seem to be arranged courses for teachers and students, requiring financing. This varies from professionals who lead the program at the school's location, to programs that are offered as a license-based tool where the teachers must familiarize themselves with the content, and often one or more teachers must take on the role as a *superuser* ("someone who knows a lot about a computer program and can help other people to use it" - Cambridge dictionary, 2021). Many of the programs can only be accessed if they pay for the license themselves unless the employer (or others) is listed as

a financier.

How the various resources express themselves and communicate their information varies according to purpose and target group. Some of the resources chose a clinical form of expression, while other resources used different elements and tools to trigger the user's feelings and interests. Through a controlled use of illustrations, photos, videos, etc. all of the measurable resources, to different extents, seemed to be easy for the intended users to navigate. Some resources applied solutions regarding, e.g. consistency, that were better than others. All in all, there were no major errors in terms of navigation that were discovered during the evaluation of the resources.

2.3.2 Deficiencies

Review of the already existing resources on the market, not only uncovered what exists, but also what may be missing.

Limited scope The existing activity plans reviewed in relation to this research, seemed to primarily focus on bullying, lacking general instructions/information regarding other mental health challenges among students. NIFU's report published in 2019 revealed that teachers want external programs to address a larger number of relevant topics [19].

"[...] It is a program, where the focus is on a specific thing, and mental health is more than that". - Teacher (translated by one of the authors) [19, p. 72].

Mental health is emphasized as a growing problem, and as a problem that is perceived as challenging to deal with for the staff at the schools, according to a study published by NOVA in 2014 [26]. The majority of the established programs today have bullying, behavioral problems, or other aspects of the school environment as their focal points. In NOVA's report, none of the programs they reviewed focused on students' mental health. For instance, professor in Special Education, Marie-Lisbet Amundsen stated in an interview with NRK (Norsk rikskringkasting AS) that the schools have too little knowledge about school refusal, and express the need for better knowledge and a more comprehensive support system [48].

Unification Based on feedback collected during this research, including other external studies [19, p. 72], it can be assumed that teachers would like a resource that includes several issues, not only *one* specific issue [19]. This can help to ease the workload for teachers in terms of not having to search the entire web (and other relevant literature) for information. A solution for this could be developing a resource containing a wide range of relevant issues, all in one place.

The NOVA report (2014) implies that developing standardized programs across schools and municipalities can have little effect overall [26]. Many schools tend to select modules and parts of the program they like and combine content from several programs. They base this assumption on positive results received from the schools who chose to adapt and tailor the programs according to what issues that concerns their school the most [26]. Possible benefits could be schools achieving a positive effect on solving issues and gaining a better school environment. However, the downside of not holistically using the program as the provider intends, makes it difficult, if not impossible, to measure the impact of the programs [19].

Availability To classify as a low-threshold resource, one important criterion is that it has to be available and easily accessed by the users. The majority of the existing programs reviewed in this chapter, have the potential for improvement regarding availability. The availability of a net-based resource can be enhanced by removing requirements like paid licenses (financing), login, age limits, and adding digital options.

Implementation Without insinuating that today's existing resources are poorly implemented, it is not unreasonable to assume that poor implementation can be considered as a possible underlying cause of a resource becoming unsuccessful. According to the NIFU's report (2019) [19], in order to successfully implement a program it has to align with some fundamental areas. The program needs to be well organized for the schools, have a good structure, the measures must be introduced in a thorough and systematic manner and the foundation of the program must be based on quality research [19, p.44]. Based on existing research, health science researcher Professor Torill Larsen also pointed out some important characteristics of good implementation of programs [49]. A very compressed version of her recipe would be: 1. *Preparation* - First prepare the entire school (teachers, staff, students, etc.) before introducing new programs or measures. 2. *Implementation* - Make sure the implementation is done correctly and sufficiently. 3. *Evaluation* - Make sure to maintain maintenance and evaluation of the process of implementation.

When choosing and implementing a program, school owners/management should base their decision on local needs. This will increase the chance of the program being perceived as relevant and can contribute so that the program is implemented in a proper way. This statement is supported by the NIFU report (2019) [19, p.80].

Quality resources The majority of Norwegian schools do not have daily access to health nurses (helsesykepleiere). They are often only available for the students two days a week [50]. A recent report published in 2021 by the Norwegian Research Institute Sintef, revealed that Norway, in fact, lacks over 2000 health nurses [51] [52]. This report, in addition to findings from the qualitative research to this project, supports the claim that the tasks concerning students' mental health are becoming increasingly challenging. Health nurses report that they experience an increasing number of children and families addressing issues related to mental health [51]. One of the participants in our research mentioned that she, as a health nurse, experiences an increase in more serious mental health problems among the students. This affects other important tasks she has, such as working preventive and health-promoting.

"I'm supposed to work preventive and health-promoting .. and as the situation is now... I feel that I am on the other side... I do not get the opportunity to work health-promoting or preventive at all [...] there is too much need for support when the students' problems already are quite severe". - Participant KE2 (health nurse) - translated by one of the authors.

Even though the *health nurses* are a low-threshold resource, free of charge, and can function as a safe space where students have someone to talk to, some students may find it difficult to "drop in" when the health nurse is available. Therefore, using social media to reach out, like *Helsesista* [29], is an approach that seems to be a valid alternative according to a chronicle written by a student in middle school [50].

PPT has received critique for not being adequate enough for its purpose, [53]. Some teachers experience an inconveniently long case processing relative to the pressure and need, meaning the number of students on a waiting-list for extra support and guidance is high versus the students receiving it. Take *school refusal*, e.g, *BUP* (Barne- og ungdomspsykiatrisk poliklinikk) disclaims responsibility for all problems related to this area [54]. *PPT* has a long waiting list, and no opportunities to step in on short notice. And the child welfare service closes the cases when everything is fine at home, leaving teachers with the experience of a large degree of powerlessness in such situations [54]. However, it needs to be mentioned that there were other teachers in the same study, who had positive experiences with *PPT*.

Chapter 3

Theoretical Background

This chapter presents the theoretical framework that substantiates the results of this project. This includes the motivational theories that we found most relevant when developing and testing a net-based resource for teachers. *Tankeverk* is a resource where the intention is for the user to acquire new knowledge or refresh forgotten knowledge. However, we define the resource as a "fact base" or support resource for teachers and not as a competence development platform. Therefore, we do not see that learning theories have the same applicability for our thesis. Since a lot of focus is placed on the user during the entire development phase, it was natural to use theories such as Technology Acceptance Model (TAM), Human-Centered Design (HCD), and Design Thinking Process.

3.1 Motivation theory

To enlighten ourselves on how to motivate our target group and get them to make use of *Tankeverk*, *motivational theories* are presented, focusing on the *Self-determination theory* (SDT).

Deci and Ryan describe motivation in the following way; "To be motivated means to be moved to do something" [55]. In other words, motivational theories involve what drives a human to perform certain tasks and actions to progress towards a goal or outcome [56]. Behavioral, cognitive, and sociocultural factors influence how motivation and motives are affected. peoples' behavior, focus, and drive are influenced by motivation. However, the outcome of motivation, which is determined by the motive to reach the goal, is related to cognitivism [56]. Common theories of motivation differentiate between intrinsic and extrinsic motivational factors. Intrinsically motivated individuals are driven by their interest in a topic and their willingness to perform activities that get them closer to a goal. If an individual is intrinsically motivated about a topic or activity, long-term goals are usually no problem. The internal drive will make it easier to achieve continuous progress towards a goal, even though the finish line is set far into the future. Individuals who are extrinsically motivated about a topic or activity are usually more focused on the outcome than the activity. Motivation to learn is important in order to create long-term learning. It is important to have goals to achieve the desired results. To create results and achievements, goals should focus on internal motivation, and promote enjoyment and interest [56].

3.1.1 Self-Determination Theory (SDT)

Self-determination theory (SDT) [57] is about meeting basic human needs, where only the inner psychological needs are addressed. As illustrated in figure 3.1 the needs that are amplified in "SDT" are competence, relatedness, and autonomy.

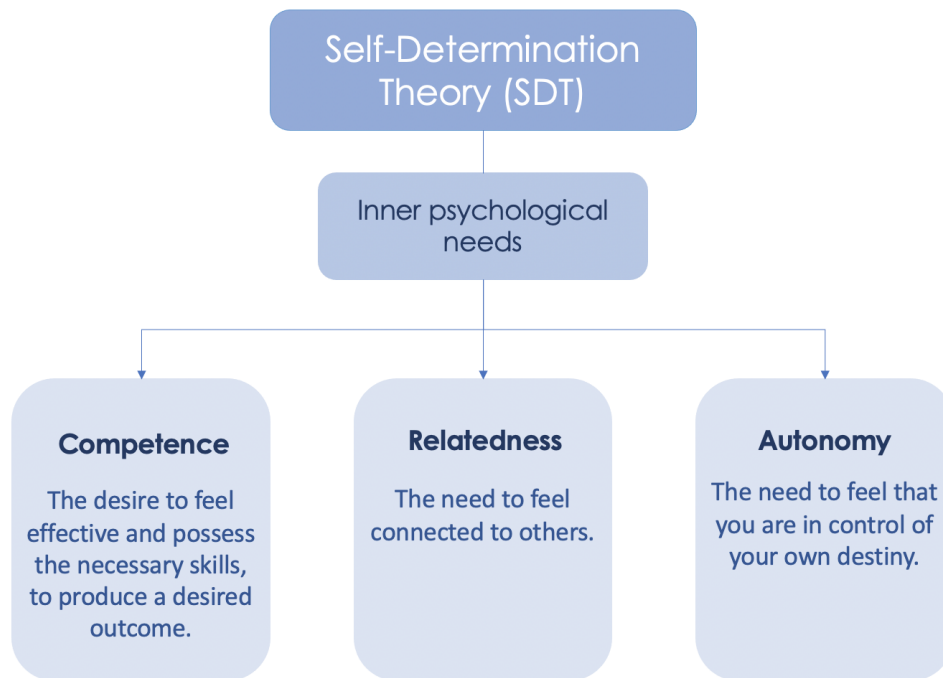


Figure 3.1: Peoples inner psychological needs according to *SDT* [58] [57]

Engaging in challenging tasks to test and increase their skills can assist in satisfying the need for competence. The need for relations can be fulfilled by caring for other people and feeling cared for. Autonomy is people's sense of volition, or in other words, the need to feel that they are in control of their own destiny [58] [57]. "SDT" emphasizes intrinsic and extrinsic motivation as the two main types of motivation. If a teacher chooses to acquire new knowledge due to an aspiration to know the unknown and/or upholds a general intellectual curiosity, it is based on intrinsical motivation. However, if a teacher acquires new knowledge because of an external reward, e.g. a promotion or an increased wage, the teacher is considered to be extrinsically motivated.

Although most researchers agree with the fact that individuals can be both intrinsically and extrinsically motivated, it is debated how polarized the matter has to be. Some believe that to achieve total motivation, there needs to be a combination of both external and internal factors [59]. Ledford et al. studied the possible negative effects of extrinsic rewards on intrinsic motivation. They found that for an incentive effect to be more powerful, the reward should be properly implemented, and intrinsic motivation should be enhanced, rather than undermined.

In relations to our project, and according to Ledford's research, it means that the nature of the incentives and the significance of the task that could be communicated to the targeted users (teachers) are [59];

- The users should receive specific and meaningful performance goals.
- The users should receive appropriate feedback and support from the management.
- Implementation and facilitation of an organizational culture in which incentives are supported by the management.

3.2 Technology Acceptance Model (TAM)

An important part of this project was to present a net-based resource to new users. Therefore, it was natural to address the *Technology acceptance model* (TAM) to express

how users accept and adopt new technology.

The *Technology Acceptance Model (TAM)* was introduced in 1986 by Fred D. Davis [60, p. 985] and correlates with a sociocultural approach, where the focus is on the quality of interactions between people and communication processes while using, e.g, technology [61]. The purpose of the model is to describe and distinguished between the intended use and actual use of technology [62]. TAM distinguishes between four phases; Perceived usefulness (*U*), perceived ease of use (*E*), attitude towards using (*A*) and behavioral intention towards use (*BI*). Figure 3.2 illustrates that external variables can affect the probability of actual use of technology. After being exposed to external stimuli, the users have to make an assessment which consists of assumptions about the usefulness (*U*) and how easy it is to use (*E*) the technology. If the user's attitude (*A*) leads to approving and considering the technology worthwhile (*BI*), it can result in the actual use of the technology [60, p. 985].

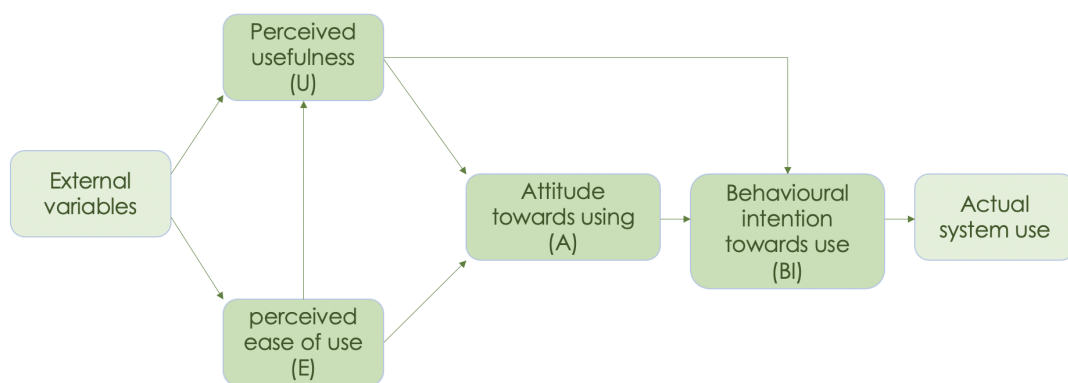


Figure 3.2: *Technology Acceptance Model (TAM)* [60, p. 985]

Due to the simplicity of the model and the fact that it is relatively easy to use and understand, it is often mentioned in technology-related studies [63]. A general critique is that the model may appear imprecise and should be used with caution. Using collective terms that are difficult to define since it contains several factors such as, e.g, *behavioral intention towards use*, can be misleading for a researcher. The application of TAM in a real organization context could therefore be demanding [63, p.2]. One of the model's shortcomings is that it fails to present the direct effect of teachers' perceived usefulness on their intentions to use technology for teaching and learning [62, p.17]. Therefore, evaluating and examining the general validity of TAM and the measurements of the TAM variables is recommended. [62, p.17]. It is actually argued that TAM is not suitable or practically applicable in larger-scale studies, such as in firms, companies, and most organizations due to possible implications elaborated in this section. However, the model seems to be more fitting for smaller-scale studies such as individual use and adoption of technology [63].

A study conducted in 2019 [62], concluded that TAM is a powerful model that explains teachers' intentions to use technology. Applying it can help to determine what factors may unfold when users accept and adopt new technology [62, p. 2]. The chance of any technology being used is increased by making the system as simple as possible. This will then contribute to self-efficacy in the user, leading to a positive expectation of mastery and inner motivation [64] [60, p. 989-990]. Without disregarding the shortcomings or criticism directed toward TAM, one concrete benefit is that TAM can give an uncomplicated portrayal, concerning whether it is likely that a teacher will use technology as a tool to acquire new knowledge.

3.3 Human-Centered Design and Design Thinking Process

To ensure that the net-based resource will meet the user's expectations and satisfaction, the *Human-Centered Design* and *Design Thinking Process* were used.

Interactive systems cover a wide range of activities. The development and design of usable net-based resources can be approached in many ways. A frequently used approach is Human-Centered Design (HCD) [65, Ch.1, p.20-23]. HCD's approach focuses on services tailored to people and their daily lives. The goal is to adapt and create the net-based resource that covers the user's expectations and satisfies their needs. Being *Human-Centered* is expensive, time-consuming, and requires large access to resources in terms of recruiting participants and sketching ideas. Recruiting test participants, conduct interviews, and producing prototypes for testing, takes time, but in the long run, this approach has many advantages. The benefits of including and paying attention to the need of people and the usability of the product early in the process can potentially reduce and avoid unnecessary expenses and adjustments of the product and complaints from dissatisfied users later. The HCD process is illustrated in figure 3.3 [66].

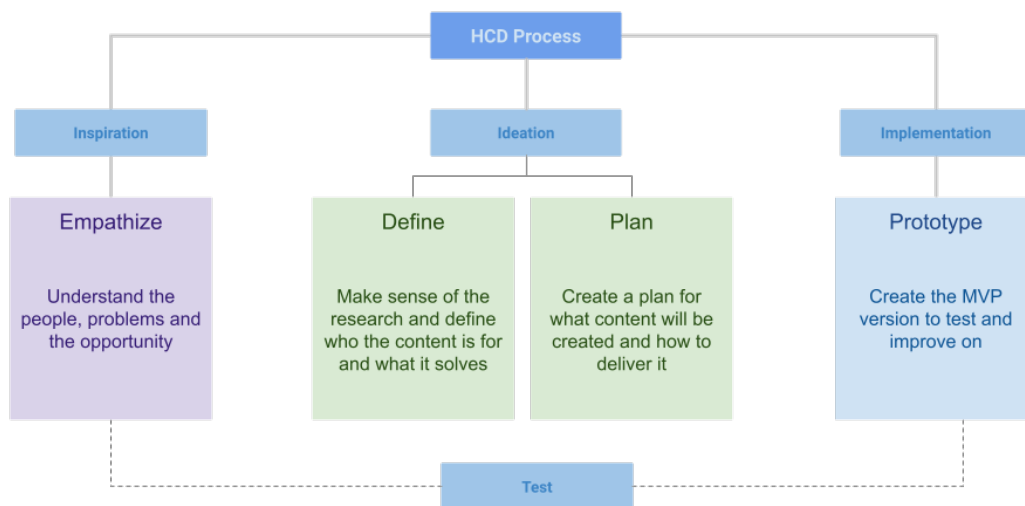


Figure 3.3: HCD process Illustration

Figure 3.3 illustrates how the HCD process is categorized, for people to easily understand the steps. Each step illustrates how one should use the solution, by carrying out activities in context [65, Ch.1, p.20-23]. HCD is an iterative design process: empathize, define, plan, and prototype. Creating fictional characters and personas can help to map the users' problem [67], and to better empathize with the users, their needs, experience, behavior, and goals, and understand what opportunity is there is to help the users. Personas can help minimize the complexity of the design process, and guide the idea process in a structured way. Personas created for this project are attached as appendix A.6. Sometimes it is easy to lose sight and stray from the intended goal. To avoid this scenario it is important, early in the process, to set clear goals for the research, to define

the problem to be solved and who the solution is made for. The goal of this research is given in section 1.2.1. Planning saves time and is crucial to refining the content, which makes it easier to evaluate what is important and what can be excluded. To provide easy access for the users and enabling testing of the product, a minimum viable prototype (MVP) is created, in this case, a high fidelity prototype. User testing is crucial to get feedback on the implementation of the solution for the best possible final result.

These four key stages are iterated over and over again in the process until the product successfully satisfies the users when testing the product with real users [65]. HCD approach is therefore used to reach the intended goal even if the approach can be time-consuming.

Human-Centred Design (HCD), places people at the core of the design when developing the product or system [65, Ch.1, p.20-23]. Design Thinking [68] is a design methodology that provides solutions to solve design problems that will actually be adapted by the target audience. The Design Thinking Process is a process that overlays with HCD to ensure the relevance and benefits from what the solution serves. HCD approach can contribute to enhancing the Net-based resource by combining and applying Design Thinking process [68] principles alternately when developing the prototype. Figure 3.4 illustrates the non-linear steps involving the Design Thinking Processes. This is to better understand why the process has been used interchangeably with the HCD approach.

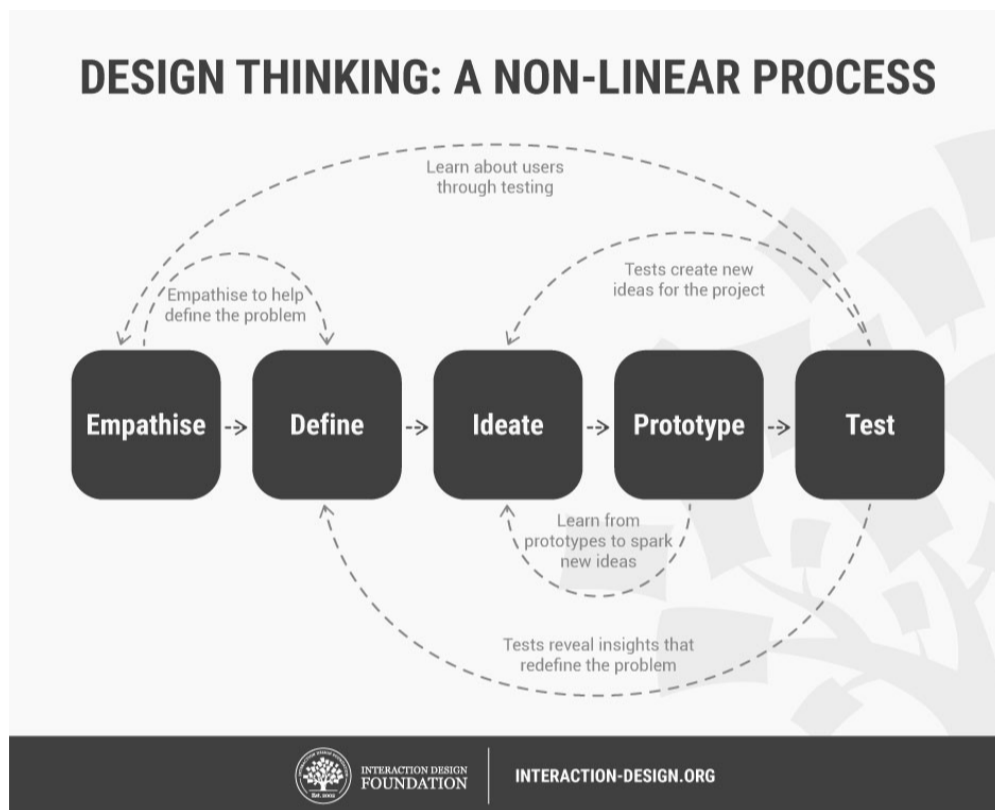


Figure 3.4: Illustration of Design Thinking Process obtained from [68]

Figure 3.4 illustrates the five stages the Design Thinking Process takes: empathize, define, ideation, prototype, and test. The similarities between these processes are clear when comparing figure 3.4 and figure 3.3.

Mapping their prior experiences, understanding their motivation, and engaging with the target audience, are simple steps for researchers to gain insight on a topic, develop empathy for, and better understand the potential user's needs. The collected data are then

gathered to define, analyze and synthesize the core problem. The 'define' stage assists in gathering great ideas and solutions that may help the users. The 'ideate' stage is where all ideas are generated, and solutions are being developed by brainstorming. This phase can be time-consuming, as much as it is important to *think outside the box* and to identify and sketch new solutions. The prototype stage is where all the ideas are coming together and scaled-down prototypes are being developed for testing. The final stage is to let a selection of the target audience test the prototype that includes all developed solutions. The participants will then evaluate and give feedback on the solution and the designers will evaluate the results and make new changes based on the feedback. This is an iterative process. The steps of the two processes may look similar, but the difference is the flexibility the Design Thinking methods allows the researcher to have. This method allows developers to work with several phases simultaneously and provides a scope to gather information throughout the process and to make changes to visualize the solutions in the best possible way. A Design Thinking Process is therefore adopted and the structure of the process is elaborated in the following sections.

Universal Design HCD and Design Thinking Process focuses on the user to tailor a system to their needs. By incorporating universal design into the solution, the target audience can feel that their needs are met and satisfied. The goal of universal design is to create a solution that can be usable for anyone. According to the Norwegian Digitization Directorate, Universal design of ICT is a legal requirement for both public and private sector in Norway [69]. To familiarize ourselves on how to incorporate universal design, we followed the international standard (ISO) 2019 [70]. Universal Design [71] is about the design process and that all people with different characteristics are able to gain access to a product. Using universal design principles, ensures compatible features for multiple users and that individual preferences and capabilities are taken into account. A group of architects, engineers, product designers, and environmental design researchers, at the Center for Universal Design at North Carolina State University, established these guidelines for designing *universal design principles*: [71] Equitable use, flexibility in use, simple and intuitive in use, perceptible information, tolerance for error, low physical effort, size, and space for Approach in Use. The design should:

- function and be useful, as well as facilitate for users with disabilities.
- include a wide range of how users want to use the product according to preference and ability.
- be comprehensible regardless of the user's competence and experience.
- be able to effectively communicate necessary information regardless of environmental conditions or the user's sensory abilities.
- minimizes the consequences of an unintentional action without error occurring, regardless of the user's choice and action.
- not be cumbersome, it should be designed so that there is efficient use and no effort involved.
- be appropriate and allow for approach regardless of size, shape and manipulation.

To identify universal design issues that discriminate against users with disabilities, there are web content accessibility guidelines (WCAG) that are made up of 4 principles (1. Perceivable, 2. Operable, 3. Understandable, 4. Robust), which are supported by 12 guidelines and 61 testable success criteria [72]. These guidelines and requirements needs

to be accounted for in the future work of developing the web-resource. As mentioned in chapter 1.3 (Limitations and constraints) The web-resource developed in conjunction with this master's thesis (MM-506-G) is a prototype and not a completely established web-resource. Therefore, the requirement of accessibility is currently not fulfilled.

Chapter 4

Methodology

This chapter contains a representation of what methods that was applied to the *Human-Centred Design* and *Design Thinking Process* approach. A thorough review of what approach we used during the research process, and a plan for how the usability testing of *Tankeverk.no* was conducted, is also addressed in this chapter.

4.1 Phase Distribution

For this project, there was much work that had to be conducted simultaneously. To structure the work and get a better visualization of the scope of the product, it had to be divided into a total of three phases. Phase one is the preparatory phase to gain background knowledge and examining whether there is a need for the product. The process in phase one includes getting in touch with the target audience, finding out what is on the market today, and discover what the user is really looking for. In order to get in touch with the target group and find out what their need is, a mapping survey and interview are prepared to ensure the quality of the survey. Phase two is about taking all the information and data from phase one and preparing a solution. This will involve making a plan, making sketches, design three different ways of presenting content for the users, finding tools, preparing graphic content, character development, making animated movies, creating a logo, and creating a functional prototype. Phase three consists of pre-testing of the product, user testing, and interviews with the target group and domain experts.

The phase distribution shows that the group combined a variety of design processes [73] and methods to carry out the project.

4.2 Mixed Methods Research

Qualitative and quantitative research methods alone may not provide the exact answer. Therefore, a mixed-methods approach consisting of a wide range of terminology and perspectives in the field of method research is more suitable [74]. The advantage of this approach is that it allows researchers to combine several research methods to address the research problem. The mixed-methods approach aims to answer research questions by combining both qualitative and quantitative approaches to gather a variety of data to support a study or research [75]. A challenge with the method is that extremely careful planning and execution is required to cover all aspects. Such challenges are time-consuming, require varied resources, and can lead to other complications which have to be solved. Although the method can contribute to complications and a lot of work, the data collection benefits from the method and can outweigh the workload. An important advantage with this method is that it makes it easier to compare and understand the contradictions between qualitative findings and quantitative results. The method includes

the target group's experiences, needs, and points of view. The method is flexible in the sense that one does not have to use one specific research method; instead it gives the opportunity to combine several methods in order to be able to collect richer and more comprehensive data. As mentioned in the previous section 4.1, this project consists of many elements that required varied methods to be able to produce the product itself. Because clear goal and research questions were defined before starting this project, it was clear that the mixed methods approach would be appropriate for this project. During this process, the methods below were utilized in the field of mixed methods.

4.2.1 User Research

In order to meet the user's requirements, one must understand exactly who the users are. The name "user research" [76] itself, describes the purpose of the method. To understand the user and their needs, one must get to know the user: who is the user? What career do they have? Why do they want the product? In what context does the user intend to use the product? How can the product help to improve users' life? To find and uncover these facts and questions, data must be collected from users through a structured approach. The qualitative and quantitative approaches and methods mentioned below were chosen.

4.2.2 Qualitative methods

Qualitative research methods aim to answer the research or study by gaining deep insight by collecting rich data. The method allows researchers to get closer to the participants and to investigate more to collect information [75]. Through interviews, the researcher can get in touch with the target group and can gather information by observing impressions, verbally expressed opinions, and points of view to understand how participants perceive the product and why they perform certain actions [75]. This method is demanding and challenging when recruiting participants, but the collected data is rich and can help to give a more correct conclusion and results.

Examination and mapping of the need Before developing the website, background research needed to be outlined and mapped to find our stakeholders' needs and which mental health problems they want more resources on. Preparing a mapping survey [77] and conducting interviews to quality assure the content before launching the survey is time-consuming, but by performing this process we will get qualitative results and can start on the product once the data is collected from the mapping survey.

Qualitative interview of mapping survey Interviews with seven participants who work either as teachers or health nurses in middle school were conducted to quality assure the mapping survey. By quality assuring the content in the survey, improvements to the current mapping survey could be done. It also ensured that the most relevant information was collected. These interviews were not recorded and focused on the participants' feedback. To ensure flow during the interview, the participants were provided with open-ended questions. The interview guide is attached as appendix A.4.

4.2.3 Quantitative methods

Quantitative [75] data collection are data that can be quantified, structured by using numbers, and analyzed with statistics [75]. If one collects large amounts of data via survey, one can use quantitative research to discover findings or draw a conclusion. This method provides easy access to gain insight and adds details by including human voices in a survey where neither interview nor follow-up needs to be performed. The method allows one to collect large amounts of data in a short time. However, In order to collect the desired data and to structure a good survey, it requires accurate and thorough

preparations. In some cases, it may occur that the collected data are unusable, such as participants stating that they have 100 years of experience or blank answers. Such answers must be sorted out, otherwise it might corrupt the results.

Mapping Survey to cover the needs Investigating people's experiences [77] can assist developers in creating a product that meets the users' needs. To discover the needs of the stakeholders a mapping survey was prepared by using Google forms [78]. The mapping survey consists of background questions made to uncover whether the need is different based on experience in the field, questions related to mental health, questions made in order to find out what problems and functions should be focused on. The results from the survey can improve the web-based resource initial design, idea, and satisfy the target group better by implementing the users' requirements. The results from the mapping survey can be seen in the results chapter, section 6.2.1.

Pre-test survey Participants were recruited to conduct the pre-test examination of the product on a survey. Their fields of expertise are design, ICT, and special pedagogy. The survey contains questions mainly focusing on design, navigation, functionality, and information. The pre-test helps to ensure in advance that unnecessary complications do not occur during the actual user testing with the target group. The purpose is to detect unexpected mistakes, wrong information, or malfunctions of the product and if changes should be made. The participants received a Google Form survey and were instructed to follow the guide they received on the survey. The participants can answer on a scale from 1 (do not agree) to 5 (strongly agree). Comment fields have been added so that participants can elaborate more in writing after rating. All participants are encouraged to give their honest opinion and feedback on the survey after the completion of testing. They are ensured that the collected data cannot be traced back to them. The results can be seen in the results chapter, section 6.2.2.

4.3 Content Creation

Creating content about mental health, without being experts on the subject, can be dangerous and reckless because of the risk of practicing heresy and the risk of misinforming the target audience. Therefore, an important factor to take into consideration when creating a resource that deals with such a heated subject is that all content and information in the resource originates from credible sources.

The information/content of the topics in the net-based resources are taken from government organization sites online and from books prepared by professionals. In order to be allowed to use the books as sources, the author and publishers had to be contacted and give consent.

4.3.1 Main sources of information

A conscious choice was made to utilize credible sources where we made little to no changes to the original work. This was due to the fear of contaminating the message with unprofessional editing. Requests for permission to use and cite "Psykisk Helse i skolen" [79] and "Stress og mestring i skolen" [80] were sent to the publishers, including one of the authors, Edvin Bru. E-mails of consent are attached as appendix A.10, A.11 and A.12

This decision proved to be advantageous, as it reduced the workload of creating the content ourselves, and assured the quality of the information.

4.4 Design process

As elaborated in the theoretical background chapter, in section 3.3, the design process that was applied during the development of *Tankeverk* was *The Design Thinking Process*. The five stages included in this method are repeated in figure 4.1.



Figure 4.1: *The Design Thinking Process*' five stages

1. **Empathise** This research started on the background of increased interest in mental health in society and because the COVID19 pandemic seemed to trigger more issues among young adults, as mentioned in section 1.2. Defining which target group the net-based resource should be developed for, makes it easier to get in touch with the users and to gather insights and empathize with their problems and needs. As described in section 4.2.2, a qualitative interviews were conducted to quality assure a mapping survey of the need. During these interviews, the participants mentioned the struggles they face and the lack of solutions in order to cope with the problems. Because this project also uses elements from HCD, as mentioned in section 3.3, fictional personas were made to better map out problems and needs.
2. **Define** Data gathered from the qualitative interviews mentioned in 4.2.2, and result from the mapping survey mentioned in 4.2.3 have later been evaluated and examined. Mapping of the data helps to define core problems and to develop solutions that are tailored to the user's needs.
3. **Ideation** The activities of the ideation stage are to produce design solutions to meet requirements gathered in previous stages. This step can be comprehensive because all data gathered should contribute to sparking many ideas. Ideas must be brainstormed, discussed, and sketched to uncover if the solution is new and efficient. Because this project focuses on being Human-Centred and including the users and their opinions, a solution is being devised. The conclusion was to develop three presentation methods that the user could test and give feedback on. After finding the context for the use and setting the user requirements for the three presentation methods, it was time to move on to the next stage.
4. **Prototype** Creating a low-fidelity paper prototype [81] saves time and is an inexpensive way to outline and test various ideas. There are many ways to create prototypes, but a paper prototype can illustrate the structure, function, and usability design of the web-based resource. The paper prototype helps to illustrate whether the ideas are feasible. If the ideas are feasible on paper, they can be further developed into a high-fidelity prototype [81]. A high-fidelity prototype can also be made with paper, but developing the high-fidelity prototype in a digital tool such as Adobe XD provides the opportunity to test how the graphical elements can be used. The final version of the prototype can be found at *Tankeverk.no*, and the development process is mentioned in chapter 5.
5. **Usability Testing** Usability testing refers to the practice of testing and evaluating how easy a design is to use with representative users [82]. It usually involves observing users as they attempt to complete tasks and can be done for different types

of designs. Usability testing refers to evaluating a product or service by testing it with representative users

Recruitment Process Recruitment of the participants happened through direct contact with various middle schools in Norway and through connections among family, friends, and supervisors. The selection of participants included two types of stakeholders. Naturally, information from a teacher's perspective was desired, yet it was also crucial to get validation concerning the content of the resource by domain experts ("Persons with special knowledge or skills in a particular area of endeavor" - IGI Global). After the recruitment process, a selection of six participants (four teachers and two domain experts) was gathered. To represent diversity, the participants had a good spread in age and experience. The background for selecting participants from different age groups and ranges of experience was to find out if they had different needs or if newly educated teachers had better knowledge concerning mental health issues among students. Also, finding out whether or not information about mental health during their education was sufficient from their own perspective.

Interview An interviewer should be as neutral and objective as possible to avoid bias, as well as being a participant in a conversation by asking good follow-up questions [83, p. 164]. Despite having to conduct the interviews over zoom.us [13] and being unable to control the participant's surroundings, we still attempted to create a comfortable atmosphere during the interviews. Conducting the interview like a "conversation" and seemed to be an effective strategy in our case.

One interviewer, one participant, and one observer were present during each interview. The observer's role in this setting was to take notes during the interviews and observe the participants, enabling the interviewer to only focus on keeping the interview process flowing.

Interview guide The interview guide that was prepared in advance of the in-depth interviews, was a schematic presentation of questions that associated and related to the hypothesis and research questions described in section 1.2.1. The benefits of using an interview guide are that it provides a structured interview and helps the interviewer to become focused on a desired line of action [84]. Using a guide can also help to explore and analyze the participants more systematically and comprehensively [84]. The interviews were conducted through a semi-structured interview method, where a set of open-ended questions was prepared in advance. Having open-ended questions encouraged the participants to speak freely (as long as they referred to the topic). The benefit of conducting semi-structured interviews is that it can bring up interesting aspects, as well as more unpredictability in the results [85]. Our experience is that it helped to extort the participant's opinions and experiences with minimal influence from the interviewer [85]. However, the disadvantage of using this approach is that it can lead to derailments in the conversation and variation in the duration of the interviews [85, p. 163].

Back-up questions: In case some of the participants would appear uninterested or only give information not relevant to our research, a set of questions was prepared. These questions would hopefully phase out the interview in a respectful and seamless way. This plan was not needed during any of the interviews. The backup questions are attached at the end of the interview guide and can be seen in the appendix A.7, A.8.

4.5 Data Collection

It is not uncommon that multiple forms of data are gathered in qualitative research [86, p. 67]. Instead of only relying on a single source of data, information from interviews, observations, and documents can be included and serve as a combined source of data

after being organized into categories or themes [86]. According to John W. Creswell, in order to properly collect data in qualitative research some steps should be followed [86, p. 145]. The first step is to gain permissions, the next step is to conduct a good qualitative sampling strategy. The next steps are developing means for recording information and storing the data. Lastly, one should anticipate ethical issues that may arise during a qualitative research project [86].

4.5.1 NSD guidelines

When handling personal data about participants in research there are certain rules and guidelines to follow.

The correct procedure in our case was filling out and submitting an application to the Norwegian center for research data (NSD) [15], elaborated in section 1.3. Some processing time had to be reckoned and it was therefore submitted well in advance of the research process. Before collecting any data, the application needed to be approved by NSD. (The approval is attached to the appendix A.2.)

The participants received a document in advance of their interview, informing them that all personal data would be processed in accordance with NSD's guidelines, properly stored, and not to be misused in any way. The document in question is attached as appendix A.3.

4.5.2 Data Management Strategy

The steps that were followed during the process of managing the data from the in-depth interviews are repeated in figure 4.2.



Figure 4.2: Data management steps

1. **Recording** The first step included audio/video recording of the interviews while simultaneously taking notes. The notes were taken during the in-depth interviews by an observer in order to get an overview and highlight *when* important or interesting subjects were discussed. Only analyzing handwritten notes post-interview is regarded as relatively unreliable [84]. Therefore, all the interviews were recorded, using the in-built recording function on zoom.us [13]. This enables capturing data more effectively in addition to making sure that the process of analyzing can be conducted as thoroughly as possible. Recording of interviews is considered as an appropriate strategy, but some participants may experience it as a bit controversial which must be taken into account [84]. Therefore, each participant was sent a consent form (A.3) in advance of each interview, in consultation with NSD. The consent was given orally on the record.

Unexpected error: When relying on technical solutions, errors can occur. Due to unclear technical difficulties, we were unable to contact one participant via zoom [13]. In lack of a better option, the solution was to conduct the interview over the phone on speaker, while using one of the facilitators' tablets to record the sound.

2. **Discussion** Immediately after each interview, a reflective discussion was conducted concerning the information provided by the participants. Our assumption was that discussing could uncover any misunderstandings and disagreements that may arise when several persons are trying to interpret what was said and communicated by

the participants. Doing this proved to be advantageous, especially in terms of remembering certain details when the analysis process started.

3. **Transcription** In qualitative researches, transcriptions are often used as a method to turn a conversation/interview from an audiotape into a textual form [87]. Verbatim transcription is a specific strategy where the transcriber captures everything being said by the participants, including every sound heard on the tapes. E.g, When the participants use filler words like “eeh”, when answering a question, this could indicate that the participant is in doubt [87]. One of the participants was interrupted by her son during one of the in-depth interviews. This could cause the participant to become unfocused on the subject matter and should therefore be mentioned in the transcription. One clear benefit of having a verbatim record of an interview is that it brings the researchers closer together with their data [88]. However, in mixed-method research like ours, the relationship and degree of proximity between researchers and their data are actually not as critical [88]. Even though verbatim transcription might seem unnecessary regarding our mixed-method way of research, we found it beneficial. Our main argument is that since this method is the most used when quoting a person, you should use their exact words [87]. To avoid contextual errors or misunderstandings when quoting, non-speech sounds can be eliminated, but all the spoken words need to be captured accurately [87]. However, minor editing on a quote is allowed because it can help to strengthen the essence of a statement. but, being aware of not substantially altering the meaning of what was said by the participant is important [87].
Even though the use of verbatim transcription is fairly common and a recommended strategy, the effects of transcription of interviews are in fact questioned by many. The process of transcription can enable several human errors such as misinterpretation of content, language errors, mistaken wording, cultural differences, unintentional misrepresentation of respondents, etc. [87] [88]. The findings and results in this research are not purely based on transcriptions. Therefore, our assumption is that using verbatim transcription as an approach, will not have fatal consequences in terms of, e.g, corrupting the final results for the research. The only clear disadvantage of verbatim transcribing, was that it was time-consuming.
4. **Coding** After preparing and organizing (transcribing) the data for analysis, the data are often reduced through a process of coding. Coding is in fact a process often used during qualitative research projects and involves reducing the data into relevant segments and assigning names for these segments [86].

Deductive coding of qualitative data Deciding whether the approach of coding should be deductive or inductive is determined before starting the process of coding. Inductive coding is often used during heuristic or exploratory research where one has little or no knowledge about the subject in advance [89]. Inductive coding usually involves establishing a complete set of codes by conducting a comprehensive iterative procedure. The process requires working back and forth between the codes and the database [86, p. 67]. Even though inductive coding can give a thorough, complete, and unbiased presentation of the results, it is much more time-consuming than using a deductive method. Deductive coding methods involves preparing a set of themes in advance, based on what you already know, or what you want to find out. These themes are then used as a reference and constantly being checked against the data [86, p. 67]. For our research, the deductive method was applied since it is less time-consuming and it gives better possibilities to influence that only the most relevant subjects are coded. However, before using predefined codes one should be aware of the possible negative effects it can have on the result. For instance, it can increase the chance of bias, as well as increase the possibility of missing important subjects by focusing too hard on proving your own hypothesis [89].

5. **Analyzing** During the process of analyzing the qualitative data, common features and opinions were searched for among the replies [86, p. 202]. Using codes helped to structure the results and making it easier to analyze and summarize the data. The coded data are usually presented as figures, tables, or as a discussion [86, p. 202]. Our codes were placed in a hierarchical tree diagram to represent the organizational structure of the different subjects. This form of the presentation shows different levels of abstraction where extensive categories are broken down into finer levels of detail [86, p. 209].

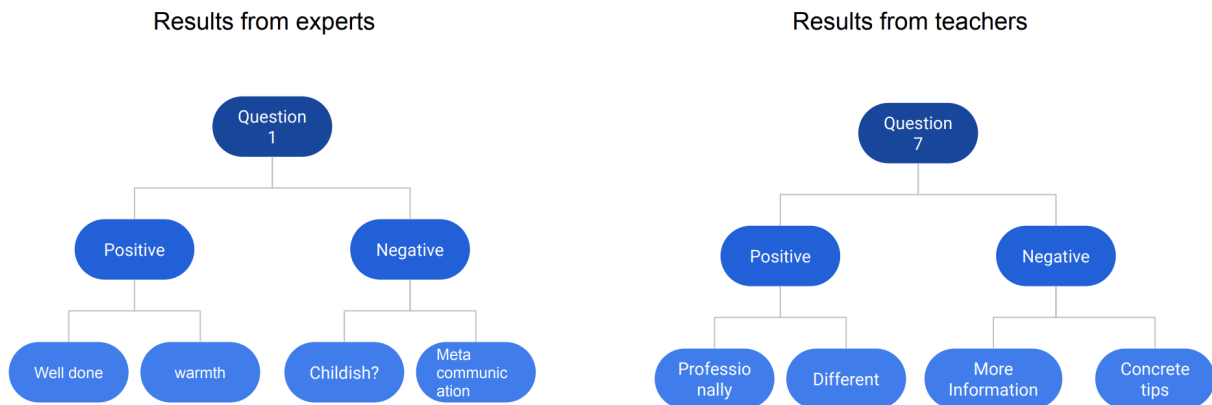


Figure 4.3: Example: Hierarchical tree diagram

Figure 4.3 is a digital representation of one of the hierarchical tree diagrams in our study. The actual coding was carried out by using paper and scissors to cut out the codes, placing them in the corresponding category. The reason we chose to use this method was to get an overview of the information all at once and to avoid unnecessary scrolling and overlap. The boxes at the top of the tree represent the most abstract information. The second level describes whether the participant's comments about the given subject were positive or negative. Negative does not mean something bad in this analyzing method, in this case, just a contrasting opinion. Such contrasting opinions can help to detect deficiencies or potential for improvement. The third level contains comments or descriptions associated with the subject and are, in this case, the least abstract information.

After Placing the coded data into a representative coding frame (hierarchical), it was easier to detect common and/or contrasting opinions concerning the different themes. The workload was then divided between the authors, to save time. This turned out to be no problem considering that a thorough plan was prepared in advance. A collective review of all the results was completed before inserting the results in the report (section 6.3.2).

4.5.3 Ethical issues

Ethical issues may arise during a qualitative study. These issues ought to be accounted for and a plan for how to handle them should be addressed already during the planning and designing process [86, p. 77]. Cresswell points out that a common misconception is that ethical issues in qualitative researches only occur during data collection. They may actually also arise in several phases of the research process [86, p. 79]. Cresswells' table - Ethical issues in qualitative research is attached in appendix A.13. Appendix

A.13 presents wherein the process of research the ethical issues that can occur, possible issues, and solutions for how to address them. Applying this to a research design or plan will, according to Cresswell, ensure that research is conducted in an ethical manner [86].

To be aware of risks, regarding ethical issues, ensured that we did not encounter any ethical issues in connection with this thesis. Throughout this project, the participants safety was highly prioritized. All participants were continuously informed that it was optional to participate and that the the data was not to be misused, and the information was stored securely. Declarations of consent were sent out to all participants who said yes to participate. Declarations of consent contained important information about the participants' data and how the data will be used for this thesis.

Chapter 5

Development Process of the Net-based Resource

In this chapter, we present the work and design process behind the development of the net-based resource. The process used to start and develop the net-based resource, is The Design Thinking Process described in 3.3.

5.1 Technology

Due to the time aspect and budget mentioned in 1.3, the choice of technology and tools had to be evaluated. Ease of use was an important factor when selecting development tools. These were the tools used through the whole project:

- **Google Forms** [78] is google's own online form tool. Everyone who has a google account gets free access to the tool. The tool was chosen because it has the functions we need to be able to perform surveys. One limitation of the tool is that the total result shown in the pie chart and bar chart can not be downloaded together in a pdf document.
- **Zoom** [13]. The pandemic made it challenging to conduct face-to-face user testing. Since many participants had a home office, Zoom.us was used. Zoom.us provides video calls and chat services through a cloud-based platform. Zooms is a great web conference tool for remote evaluation, and the interface is accessible for everyone. By using multi-participant calls, one of the conductors can act as an observer who observes the participant's body language, listens, and takes notes at the same time. With the interview participants' consent, the zoom recorder function can be used to store a recording of the conversation for analysis purposes later.
- **Wordpress.org** [90]. is a free and open-source Content Management System (CMS) that is used to build websites. It supports plugins such as Elementor pro and can be paired with an SQL database. WordPress alone offers usable plugins, themes, templates, but in some cases, it does not cover all needs. WordPress does not restrict its users and allows users to use other plugins' services.
- **Domeneshop.no** [91] offers domains and hosting of web services such as web pages. The web hosting service has a built-in tool for the setup of WordPress and SQL databases. Domeneshop.no was used as it offers domains with the ".no" suffix.
- **Elementor** [92] is a plugin used with WordPress to help to building the layout of the net-based resource. Elementor is a free plugin with limitations that can be upgraded to Elementor pro for full functionality. For the net-based resource, the upgraded version was used to have access to themes, templates, and other functions.

- **Adobe Creative Cloud [93]** is an application package and service that provides subscribers access to powerful editing software used for graphic design, web development, video, photography, and much more. Adobe package included all the necessary tools needed to create graphical content for the net-based resource. These adobe applications were used:
 - **Adobe XD [94]** is a vector-based user experience design tool for webs, apps, and mobile apps, provided by Adobe. Adobe XD provides the opportunity to create and test the design to see if it is usable. It is a feasible way to create a functional high-fidelity prototype. Creating a draft in Adobe XD can save time, and creates a good structure for what to make in Elementor later.
 - **Adobe After Effects [95]** is an editing tool that allows users to be creative and let their imagination come to life. Adobe After Effects can sync and work well with other Adobe software by using Dynamic Link. Adobe After Effects is used to animate the figures made in Illustrator.
 - **Adobe Premiere [96]** is a video editing tool provided by Adobe. It is a creative tool and integrates well with other Adobe apps. Adobe Premiere is used to cut, text, and edit all animation before being exported.
 - **Adobe Illustrator [97]** is a vector graphics software. Illustrator integrates well with After Effects and Premier by using Dynamic Links. Illustrator is used to creating logos, characters, scenery, and all graphic content for the web-based resource.

Graphical elements are critical to appeal to the users. By creating a look that complements the purpose and hits the user's feeling in a positive way, it can help influence the user to use the product. The goal is to use graphic elements to break with the clinical feeling one might experience when looking for information on *NDLA [75]* or *FHI [34]* and rather create a structured, neat, clear web-based resource based on warmth and factual content, but for regular users without a medical background.

5.2 Preparation

5.2.1 Sorting and analyzing data

In section 4.2.2 we mentioned that a thorough examination of the need had to be mapped. By including the target audience and their opinion, we can better target their needs. A mapping survey was conducted as mentioned in section 4.2.3, and the results we gathered from the mapping survey described in 6.2.1, had to be analysed and sorted. Based on the results, decisions had to be made: how many topics should the prototype focus on first? How should the topics be presented and where can we find information on these topics? All topics related to mental health are important, but to limit the workload and save time, the choice fell on the three topics that scored highest in the survey: Anxiety, school refusal/motivation, and stress and pressure. Several participants had divided opinions and preferences regarding the presentation method the online resource should use, but the common preference was that the sources and information the target audience received, should be credible and obtained from experts. The users wanted a net-based resource that is easy to use, easy to navigate and with no registration needed. The conclusion was that we would develop three different presentation methods to give users variety that they can test and see the solutions. Because three different presentation methods were decided, we chose to focus on creating different characters and graphic elements to see if it contributes to influencing the user's preferences as well. The information is obtained from government organization sites online and from books prepared

by professionals as mentioned in the methods chapter, section 4.3. When topics, presentation methods, and information was concluded, we could start developing the net-based resource.

5.2.2 Paper and High-Fidelity prototype

As mentioned in section 4.2.1, to be able to develop a product for the target audience one must understand the user. Conducting investigations to find out what is on the market, can contribute to giving impressions and inspirations. How others have developed their solutions, what others are missing, and what can be improved can help to provide ideas for our own concept. At the same time, having the user in focus throughout the design process means that the resulting design is designed for the user and their needs. Prototyping was mentioned in the methods chapter, section 4.4. Originally two paper prototypes, were prepared, but these have not been shown to any interview participants. When the interview for quality assuring the mapping survey was conducted, the participants listed requirements for what the resource should include, and paper prototype version number two unexpectedly met most of the requirements of the participants.

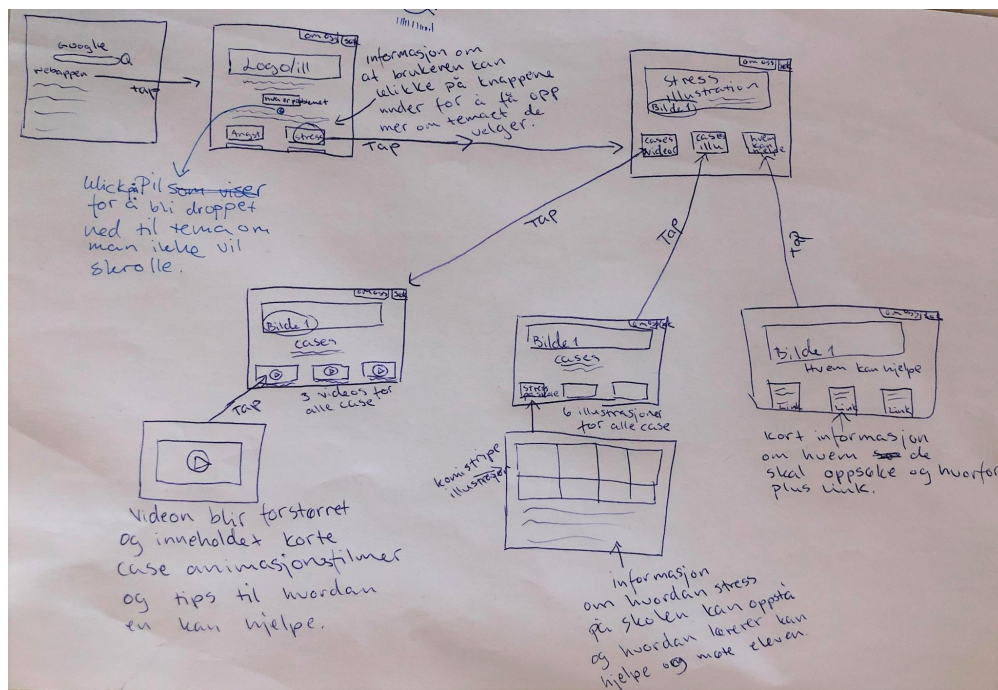


Figure 5.1: Paper prototype version two

Paper prototype version two is displayed in figure 5.1 A task flow [98] was constructed to consider how the user will navigate and use the resource. For paper prototype version two the task flow was:

1. User finds the web-based resource through SEO on Google.
2. User sees a relevant topic he/she needs information about.
3. User clicks on the relevant topic and brings up cases.
4. User looks at the relevant case.

Version two has a survey function displayed in fig 5.2 The purpose of the function is to save time and energy by not having to read through all the topics. The survey function is to sort and list out relevant topics based on the user's answers to the query form

displayed in figure 5.2. The function is not developed for the prototype because the net-based resource as of today only has three topics and not fully developed content to search for.

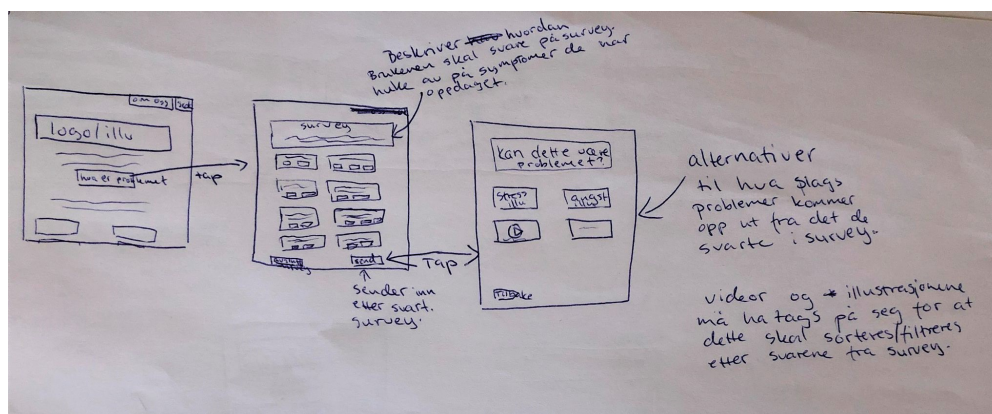


Figure 5.2: Survey function

The task flow for the survey function was:

1. User does not want to review all topics.
2. User wants to get options.
3. User uses the survey function.
4. User responds to the survey and clicks send.
5. User gets different options to what the problem may be, based on the survey they answered.

Paper prototype version two was, after a meeting with Prof. Ingrid Lund, re-evaluated and redone, due to feedback about what the resource should include preventing mental health problems from occurring in the learning environment. The home page layout had to be redrawn and a new important topic was added to the resource. The new paper prototype for the home page is depicted in figure 5.3.

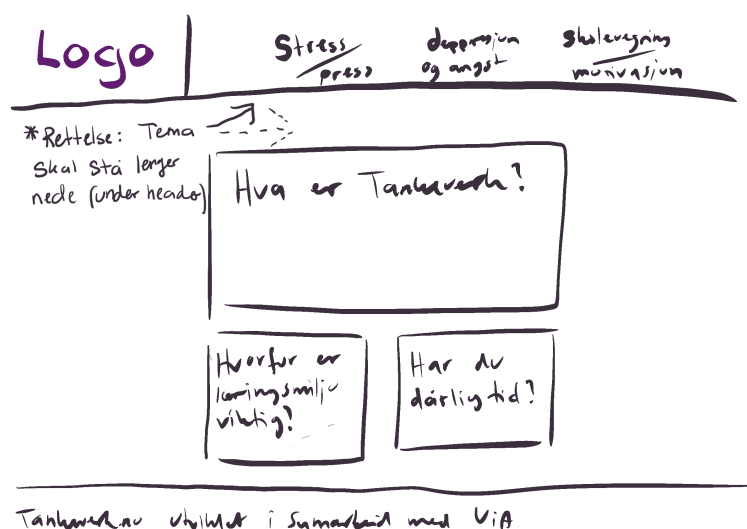


Figure 5.3: New layout

To get a better overview and impression of the prototype, Adobe XD was used to create a high-fidelity prototype. Adobe XD allows developers to get an overall impression of the

product's appearance, which elements work, and make changes to the appearance and navigation before the product itself is developed. Figure 5.4 shows how the Net-based resource structure looked like in Adobe XD, and figure 5.5 illustrates the front page developing process in adobe XD.

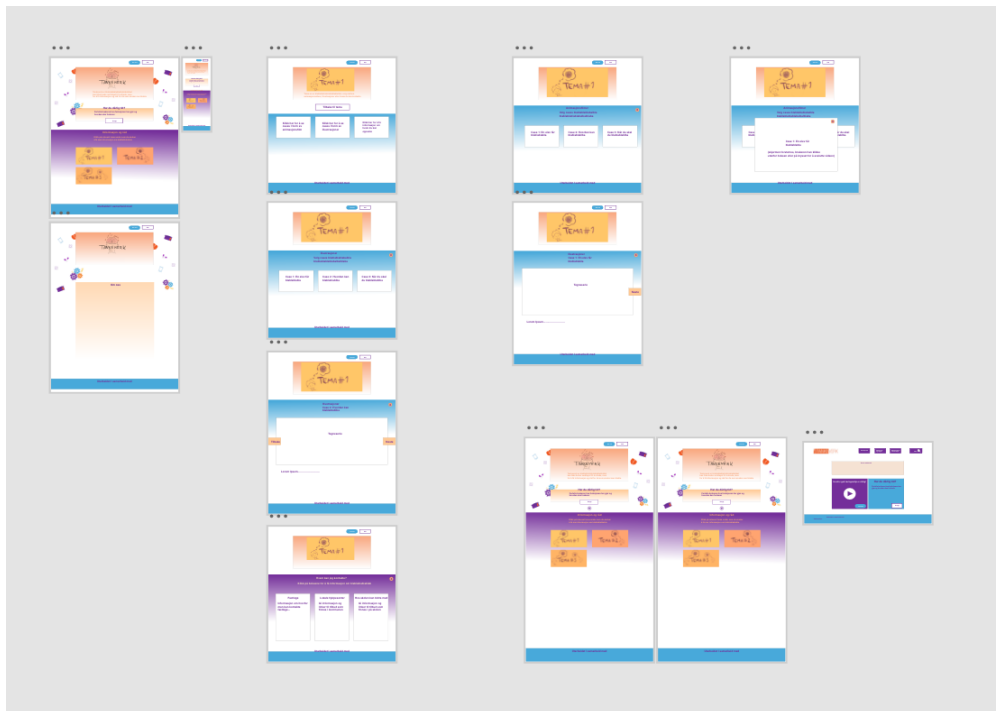


Figure 5.4: Adobe XD

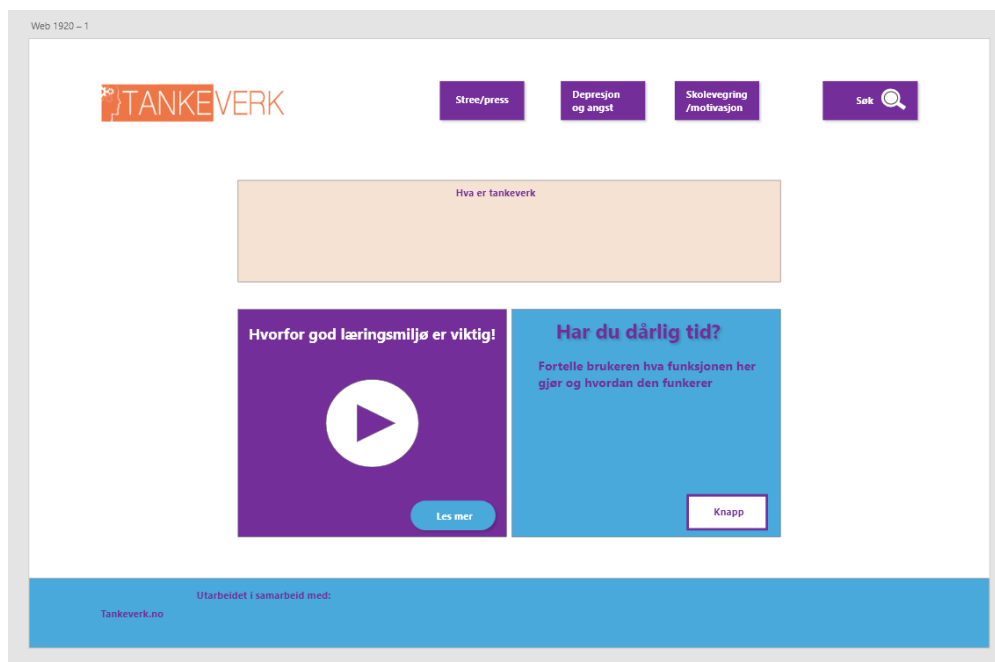


Figure 5.5: First draft

Adjustments and changes will be made on the final product, but the prototypes can still be used as a basis to work after. The original idea was to create the same presentation method for all three themes, but it was adjusted and all three themes were given three

different presentation methods to be able to explore the user's preferences and what it takes for them to actively use the net-based resource. The goal behind this decision is for the user to have a voice in the development process so that their needs are met.

5.3 Creating a brand name

Creating a brand name is demanding and can take an incredible amount of time, but it is an important factor. Creating a name is creating an identity and will become the brand [99, page 190]. Apple is a great example of a brand. When someone mentions an apple product, everyone will be able to imagine the logo which is an apple that lacks a corner. And everyone already knows what apple has to offer in terms of products and services. The name and visible expression in form of logo, colors and image, must reflect the brand's identity and create desired communication with the target group. The Net-based resource will cover mental health topics and is intended to be a helpful guide for secondary school teachers who wants to help students who are struggling with various forms of mental health problems. The name that best described the purpose was therefore *Tankeverk*. Why *Tankeverk*? Mental health is often about being in conflict with oneself and other times there are other factors that affect one's mental health, but a common term for mental health is mental suffering. Therefore *Tanke* meaning 'thought' and *verk* meaning 'pain' or 'suffering'. A thorough investigation must be done to make sure that no one has used the name before for any other purpose. Once it was confirmed that the name is not used elsewhere, all graphical elements could be sketched and prepared further.

5.3.1 Graphical Elements

The goal is to create a net-based resource that breaks with the clinical experience, as mentioned in section 5.1. To achieve the goal, a priming examination must be made of what kind of offers are available on the market and what their graphic solutions look like. As shown in chapter 2 (State of the Art), there are various resources on the market, but the existing resources are not sufficient or directly designed for our target group and their concern. The visual elements help to reinforce the user's impression and help to create visual communication. Listed below are all the design steps that have been used to create a unique distinctive design for *Tankeverk*.

- Logo
- Colour Scheme
- Character Development
- Animations
- Illustrations
- Text page
- Wordpress and Elementor

Logo: A logo should represent a company, an organization, and more. It must be able to be used in many areas: facades, advertisements, prints, and more. Therefore, there are certain requirements a logo must satisfy [99, Page 191-192]: Timeless, easy to read, recognizable, must be able to be used in colors as well as black and white, and in different sizes. The colors of the logo must be able to be changed to black and white without the colors next to each other remaining in the same gray tones. Too many details can create

imbalance, make it unreadable and make the logo more complicated than necessary. A logo must be used in many places and must be able to withstand being scaled up and down without disturbing details in the logo. If details are required, it is recommended to prepare different versions for different applications. Regardless of whether it is a modern or traditional logo that is prepared and created, it is important to keep in mind that the logo will be used for many years to build up the brand.

These requirements were important during the sketch and development process for *Tankeverk*. Mental health is often about being in conflict with oneself, and the thoughts that grind in one's head are often negatively charged. Different elements, colors, compositions, and textures of the logo for *Tankeverk* went through several iterations to illustrate the pain and create balance.



Figure 5.6: Results after some iterations of the design process

Figure 5.6 illustrates the results after some iterations. The choice fell on gears and the silhouette of a head is used to represent the meaning of the name "*Tankeverk*". The silhouette of a head represents "*Tanke*" meaning 'thought', and gears are sometimes used to symbolize that something is working or brooding and fits to represent "*verk*" meaning 'pain'. Combining the silhouette and gears can help reinforce the message of mental health behind the logo. Figure 5.6 underwent another improvement process and the final result of the logo is displayed as figure 5.7. The words "tanke" and "verk" are separated by using different colors to emphasize the play on words. White and the different shades of purple are consistent with Tankeverk's color scheme.



Figure 5.7: Tankeverk logo

Colour Scheme: The net-based resource uses a wide range of color palettes. The color palettes are intended to create warmth, keep the user interested and break with "clinical" feelings.

Colors can be used in many ways. Designers often use colors not only for distinctiveness. The colors can have a deeper meaning. Colors have meanings and symbolize different things around the world and in different societies [99, Page 541]. The use of colors can help to promote emotions, aesthetics and be pleasing to the eye. The use of colors can signal danger, but also create an association with other things. For instance, wearing red can create associations with both danger *and* love. The target group is teachers who work in upper secondary school, meaning they can be in different age groups and teach different subjects. Because the diversity among the target audience is so large, the color spectrum was expanded and varied colors were used to create depth and a distinctive feel. Colors can be associated with emotions and the colors that can often be associated with mental health, life, strength, communication, joy, energy, learning, youth, and medicine are: purple, blue, turquoise, red, pink, orange, yellow, green and indigo. Purple is *Tankeverk* identifiable color, but blue, red, orange, yellow, and green are also colors that are actively used on the net-based resource. Figure 5.8 illustrates the color spectrum. How colors are used is important to create color harmony and contrasts, but colors can also create unbalanced contrasts that give a feeling of chaos and unaesthetic appeal [99]. The intermediate colors [99, Page 544-545] are used to create harmony, balance, and symmetry to the net-based resource.



Figure 5.8: Color gamut

To make the colors more pleasing to the eye when they are used, the colors are dulled in intensity and in some cases, some of the colors are mixed a little with contrast or tertiary colors, meaning the colors will end up more at the pastel level as illustrated in figure 5.8.

Character Development: The use of humanoid characters can be both a positive and a

negative factor. The positive is, it creates a personal impression and people can relate, but the negative is, some people may feel excluded based on lack and variety when it comes to ethnicity or diversity. Because we create a prototype that will involve the user's preferences, we want to test whether the user prefers a realistic or abstract character version. Two character concepts have been developed to see what the user prefers, one leans towards realism by using realistic and relatable looks and colors to match various skin tones and the other leans towards the abstract by using unique features and use a nontraditional color palette.

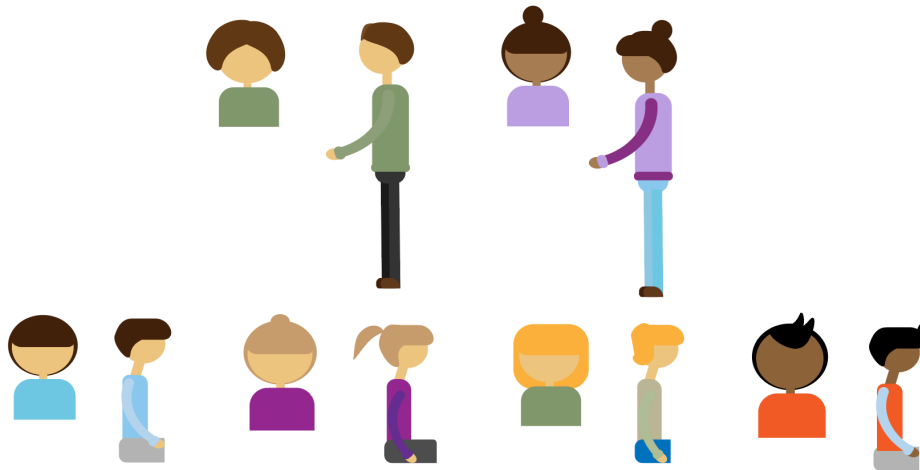


Figure 5.9: Realistic Character Development

Figure 5.9 shows the realistic character version. The characters are not realistic in the sense that they look like real people, but they have more realistic features and are easily recognizable as human figures. The figures are minimalist in the sense that they do not have much detail and can be used with or without facial expressions.



Figure 5.10: Abstract Character Development

Figure 5.10 shows the abstract character version. To ensure that the characters do not include or exclude anyone based on ethnicity and color, the character-design is abstract. The characters are much more detailed to create unique features and details.

Animations: As mentioned earlier, two different character concepts were developed. The same characters are reused when the animated films were to be produced for the net-based resource to create context. Producing animated films can be time-consuming and

a lot of details can sometimes be confusing and work against their purpose and distract the viewers. The production process of the animated films consists of [99, Page 470-482]: idea, script, storyboard, audio recording, animatic, character, and background, and environmental design. The idea was to use some of the cases, consisting of text, and turn them into uncomplicated and comprehensible animations to illustrate the cases from a different angle than just plain text. Because the characters are very different, the production of expressions and animation is also done differently. A storyboard was drawn differently to adapt to the characters used in the animation cases. To focus on international standards the animated films were produced so that people with impaired hearing should be able to read text, and people who have reading difficulties or do not like to read text should be able to listen to a narrator's voice. Voice-over was recorded and used, where one narrator's voice is a woman with a dialect and the other is a man without a dialect. This was not used in the same animated film, but in different ones to see if the users have any preferences regarding the narrator's voices. Sounds-effects was downloaded from [100], but was mixed and edited in post-edit to match the scenes.

Adobe After Effects 5.1 and Premiere Pro 5.1 was used to create movements, effects and put together the animations. Adobe Illustrator 5.1 was used to design the characters, background, and for environmental design. The animated films focus mainly on reinforcing and illustrating emotions the student faces during the defined scenarios, but the background and environmental design are in strong focus to create completeness and connection to the scenes where the events are played out. Figure 5.11 shows an example of what background and environmental design can look like, taken from a scene in scenario cases, category anxiety. Figure 5.11 illustrate how the classroom environment was designed by using mix of minimalist, realistic and abstract technique that suits both character designs. Developing background and environmental designs that match the styles of the characters serve the purpose of being able to reuse the scenes multiple times and the benefit of saving production time.

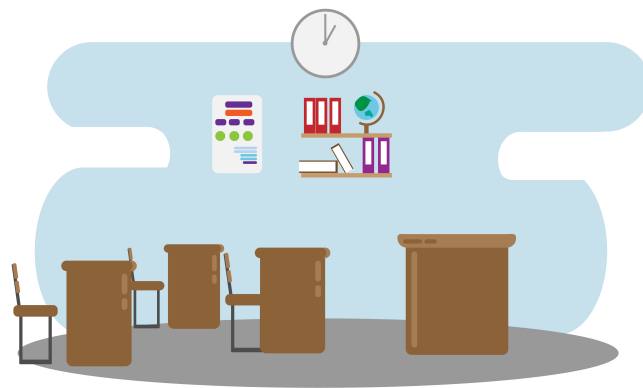


Figure 5.11: Classroom Environment Design.

With the human figures, the goal is to convey the message by using minimal movement, but rather focus on the environment, expression, effects, camera, stage, and sound effects. The character style is minimalist and the way the characters express themselves is made differently to break from the regular facial expression editing style.



Figure 5.12: Character Design, human figures used in the animations.

Eyes and mouth are used only if it is necessary to bring out specific expressions on the targeted character(s). To express uncomfortable feelings, shadows are used and covers half of the face. Sometimes no eyes, mouth, or expression is used at all, not because it was forgotten, but to emphasize the editing style. The camera angle is used to amplify some scenes or to switch scenes to create variety. Sound effects help to create atmosphere and help to give life and wholeness.

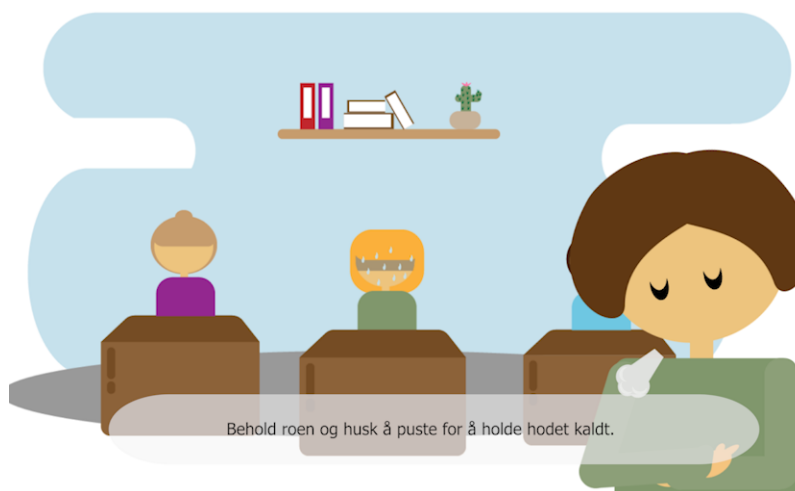


Figure 5.13: Expressions and Camera Angle Example.

The abstract character focuses more on the details. The character animation is produced with more detailed movements to bring out the desired effect and to maintain the same style of the characters.

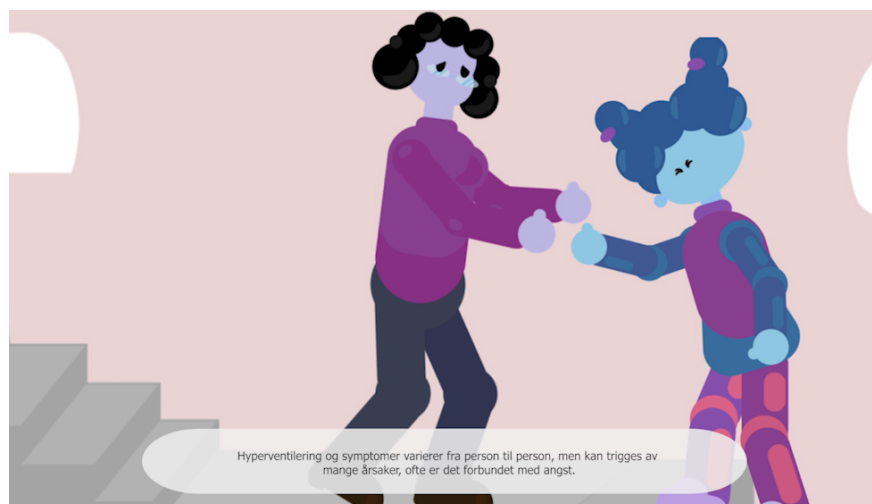


Figure 5.14: Character Design, abstracts style used in the animations.

For instance, in figure 5.14 and 5.15, emphasis is placed on the characters' movements, effects, camera scene, and sound effects. The character's movements contribute to express pain and other emotions. Movements to express emotions are more focused and detailed to create life in the abstract figures. Dramatic effects are used to create a whole for the character's condition. Camera angle and scene change help to enhance emotion and variety. Sound effects help to create atmosphere and wholeness for all elements.



Figure 5.15: Character Design, camera angle, expressions and dramatic effects example.

It is possible to download a to-do list in PDF format inside the animation page on the topic "anxiety". There is a checklist for how to work with measures that can help prevent anxiety situations and give advice if a similar situation arises. The to-do list lists specific points from the animation cases and was created for the users. If users find the information useful, they can download the information instead of watching the entire animated film. These to-do lists are currently only available for the animation page, but the goal is to investigate whether users actually download these to-do lists and whether they keep them.



Figure 5.16: Illustrates how a *To-do list* looks like

The video files are hosted from the domain hotel to avoid advertisements on YouTube [101] and to escape charges on Vimeo [102]. If more videos are to be produced in the future, the space capacity of the hotel domain should be expanded, or a different solution should be used.

Illustrations: At *Tankeverk*, the users can choose to receive information by reading text, watch animated films of scenarios, or by illustrations. Illustrations pages are sketched and prepared to resemble a mix between comics and digital books. This presentation method was inspired by the mapping survey 6.2.1 where the users seemed to have divided opinions about the preferred text, animations, or illustrations. The scenarios that use illustrations are compromised solutions between pure text and pure animation. Combining text and graphical illustrations is a visual communication method that conveys the heavy content to the user in a clear and understandable form. During quality assurance of the mapping survey, several interview participants mentioned that they usually have to read through many pages with heavy reports, which can be tedious and time-consuming.

Informative text is obtained from *Stress og mestring i skolen* [80]. The sources of the information can at times be presented in plain text form and in some cases heavily academically formulated. To make the text more appealing and understandable to the target

audience, the information is divided up and must be presented differently. Some of the information is turned into graphical representations to create stop effect and visual expression [99, Page 130-144]. An illustration can capture the reader's attention and help reinforce the interest in continuing to read.

Fase to **2. GJENNOMFØRELSE**

2.1
Eksponeringstiltak kan gjennomføres ved at Gro får være med å bestemme hvilket tiltak hierarkiet som skal gjennomføres først, og f.eks. til hvem presentasjonen skal rettes. Noen elever kan ha stort utbytte av forberedelsessamtalen og gå rett til presentasjon i klassen, mens andre trenger en gradvis eksponering.

2.2
La i hovedsak elevene selv få velge hvilken måte som de tror vil fungere best. Dersom det er en elev som har vist kraftig angst, eller du kjenner til at eleven har traumebelastninger, anbefales en gradvis eksponering.



2.3
Følg alltid med på Gros reaksjoner og gi veiledning og støtte underveis. Dette kan f.eks. gjøres gjennom kroppsspråk - et nikk, et smil eller med vennlig tilstedeværelse.

2.4
Dersom det stopper opp for henne, kan du som lærer gi støttende kommentarer underveis, som "Ja, det er interessant", "Fint, da kan du ta neste punkt". Dette er også en form for belønning som kan være positivt for eleven. Slike støtte- og belønningsteknikker vil som regel få eleven videre, som om angstreaksjonene virker negativt inn på tenkning og presentasjon.



Klikk deg gjennom slidene for å lese om fase tre, oppfølgings fasen:

3. OPPFØLGING

3.1
Etter en presentasjon Er det viktig å snakke om hvordan Gro opplevde denne. Gi umiddelbar, positiv tilbakemelding på det hun har gjennomført.

◀ Sett opp tid for samtale etter hver eksponering, etter hvert som stegene i eksponeringsplanen knyttet til angsthierarkiet gjennomføres. ▶

Slide 1



Figure 5.17: Example: Information from *Stress og mestring i skolen* [80] turned into a mix between comics and digital books.

As mentioned, the information is presented as a digital book. The figure 5.17 shows on step three *Oppfølging* that users can use arrows to click or swipe between pages. This is to minimize the length of the page and rather give the users options to read more about the topic if they want to.

Text page:

2:

Tidlig identifisering og tidlige intervensjoner



Tilrettelegging	+Hvorfor?
	+Konsekvenser
	+Hva kan du gjøre?
Sosiale ferdigheter	-Hvorfor?
	Det bør iverksettes tiltak som fokuserer på det sosiale og ikke bare på det faglige. Noen elever trenger hjelp til å få og holde på venner, og noen kan ha behov sosial ferdighetstrening.
	Skolevegreere er ofte i en vanskelig situasjon sosialt; de strever ofte med å få venner eller har få venner, er mer beskjedne, ofre for mobbing og er sosialt tilbaketrukkne.
Mobbing	+Hvorfor?
	+Hva kan du gjøre?
Samarbeid hjem-skole og med støttefunksjoner	+Hvorfor?
	+Konsekvenser
	+Hjemmets rolle:
	+Skolens rolle:
	+Ulike støttefunksjoner:

Figure 5.18: How the pure text pages looks like.

The text page is meant to display more text than images but uses some graphical elements to hold the reader's attention. The picture elements also help to create fullness and a comfortable design. The information is structured to give the target audience options to read more if they want to by using a "plus" icon. Figure 5.18 shows the plus icon is a drop-down bar that contains more information.

Wordpress and Elementor: As mentioned in section 1.3, resources that helped to save time were used. All graphical elements are made by ourselves from completely empty canvas on Adobe Illustrator. To save time, alternatives that allowed us to load graphic elements without turning them into a valid code, were used. Turning graphical elements into valid code can in some cases be very cumbersome and require extra time to search for errors or solutions. By doing research we found Elementor and read reviews that many designers had used the plugin service and made various web solutions without the need for programming.

Because these solutions are used to prioritize the time, we know that there will be problems in relation to universal design, mentioned in section 3.3. These issues are mentioned in the limitation and constraints chapter, section 1.3, as well. If this was the final product that was produced, these problems would have a major impact on the accessibility of the product. But as of today, it will not have much to say, as this is a prototype that is designed to give the user the opportunity to physically test and experience the product to give more accurate feedback on what their needs are and whether we are on the right track during a user testing.

When WordPress was set up on Domeneshop.no, WordPress automatically generates a standard theme page. Because the layout has already been sketched out for *Tankeverk*, and WordPress does not offer themes similar to the solution we wanted, everything was

deleted and left as an empty page. On the empty WordPress website, our goal was first to build the page as it was designed in Adobe XD 5.5, mentioned in section 5.2.2. This was to have a template and starting point to work from, even though the final prototype did not look like the prepared version in Adobe XD. The design process of the website has been through many iterations to get the design and layout it has as of today.



Figure 5.19: How the *Tankeverk* the homepage looks like today after many iterations.

To view the whole results on the high-fidelity prototype go to tankeverk.no.

5.4 User Testing

The human-centered design was mentioned in section 3.3, where the theory describes how the user needs are the core of the process. Because this project is designed for the target audience, their opinion and evaluation of the product are crucial to determining if the product works in practice and to evaluate if the product meets the user's needs [99, Page 485-490]. The best way to determine these factors is to conduct user testing of the product and interview all test participants. Involving teachers and experts is important to get correct answers to our study and to ensure the net-based resource provides relevant and correct information, and if the net-based resource is actually aimed at the target audience. The recruited test participants will have access to the product a few days in advance of the interviews, where they will get the opportunity to share their positive or negative opinion about the net-based resource. Two interview guides were prepared, one for the experts and one for the teachers. The interview guide for the experts focuses on quality assuring the content of the net-based resource, while the interview guide for the teachers is to find out if the net-based resource satisfies the target audience and their needs. Feedback from user testing can help improve the net-based resource. The results from user testing can be seen in the next chapter.

Due to the pandemic, user testing was conducted differently. Meaning that all test participants who agreed to conduct the user testing gained access to the prototype in advance. The participants received a confirmation and agreement document and task document. The confirmation and agreement document contains information about personal data storage and agreement to be recorded from NSD. The task document is attached as an appendix in A.9.

Chapter 6

Results and Evaluations

In this chapter, we will reveal our results as well as findings from other external studies. A discussion will address all aspects that we found meaningful, important, and relevant during the analysis of these findings and results. The matter of the discussions relates to the research questions as well as new significant and relevant aspects that came to light during the research process. The discussions will form evaluations that represent the cornerstones for our overall conclusion.

6.1 Supply and Demand

The hypothesis and research questions elaborated in section 1.2.1, was made based on the assumption that teachers are in need of more resources. This was the first and important question that needed to be answered before addressing this projects' research questions. We were also curious to find out whether or not teachers find the information they receive about mental health during their education, sufficient from their perspective? During the pre-interviews (6.3.2), all participants in our research stated that, based on their education to become a teacher, they did not feel well enough equipped when dealing with issues regarding students' mental health. However, the educational background does not seem to matter whether the teachers feel equipped or sufficiently prepared to deal with students struggling with mental health challenges [103]. This is according to a research paper published by Ekornes Et al. [103]. The findings from their research are displayed in the figure below:

Table 3. Percentage distribution of answers to items 6 and 7.

	Item 6: 'My knowledge about mental health is mostly gained through experience with pupils'		Item 7: 'I have gained knowledge about mental health through my educational training'	
	Count	%	Count	%
Strongly disagree	24	3.1	197	25.6
Disagree	125	16.2	260	33.7
Somewhat agree	365	47.3	193	25.0
Agree	208	27.0	87	11.3
Strongly agree	44	5.7	25	3.2

Figure 6.1: Screenshot from a study: "Teachers as Mental Health Promoters" by Ekornes Et al. (2012) [103, p. 12]

Ekornes Et al. assume that the variations are due to differences in school culture and school organization and not educational training. Participants in our research seemed to agree with this opinion.

"The first school I worked at they focused a lot on mental health [...] so I learned a lot simply just working there" - KL3 (Teacher) - Translated by one of the authors.

These findings led us to the assumption that mental health, and how it is promoted at a school, highly depends on the school management and their focus on the subject.

In the early stages of this project, we had several interviews with participants from our target group and other experts mentioned in the methods chapter, section 4.2.2. The main purpose of these interviews was to assure the quality of a survey that later mapped what teachers need and what they want from a resource. During these interviews, all the participants, without influence, stated that teachers often feel like they lack the knowledge and are not adequately equipped to cope with some of the challenges students have. In section 4.2.2, they all state that they are in need of more low-threshold resources related to this problem.

In order to find out more about how teachers search for and acquire knowledge about mental health, we asked them questions related to this subject in a mapping survey (4.2.3): have you experienced situations where you needed extra guidance when the student has shown signs of mental challenges or illness? Did you know where you could seek advice or guidance? If a digital aid had existed, would you use it? and the results from the survey (6.2.1), and the answers for these four questions were:

The survey showed that 61 participants out of 62 have experienced situations where they needed extra guidance when the student has shown signs of mental challenges or ailments, also 9 participants did not know where to seek advice and guidance, and 20 participants searched online for help and advice. For the question "If a digital aid had existed, would you use it?" the results showed that: 34 participants wanted to use it, 25 participants answered maybe, and 3 participants answered no.

The results indicate that 61 out of 62 teachers have experienced situations where they needed guidance. They may have consulted a health nurse or colleagues for help, but the finding shows that they have sought others for help and guidance. When asked if they knew where they could seek help, 9 out of 62 answered no, they did not know where they could get help. 9 out of 62 teachers may be a small number, but when it comes to mental health and 9 teachers do not have knowledge of where to seek help, one can argue that the school has failed the teachers and the students. 34 participants are willing to use digital aid, 25 participants answered maybe and only 3 out of 62 participants said no. The response indicates that teachers are in need of a digital aid.

Mental disorders are the main cause of young people becoming disabled according to a report published by OCED in 2015 [104]. The costs are not only great for the young people concerned, but also for the society. The same report refers to a poor statistic regarding young Norwegian students transitioning from school to working life. Without expecting that a resource like "Tankeverk" [105] will cure youths from mental illnesses or prevent them from occurring, it can serve as a tool where teachers can help to facilitate everyday life for vulnerable students and hopefully help to improve school dropout statistics.

Take "*skolevegring*" (school refusal) for example, which in fact is one of the problems implemented into *tankeverk.no*. The results from the quantitative survey elaborated later in this chapter (6.2.1), actually revealed that school refusal is one of the critical issues that some teachers lack information about.

Research from 2015 shows that the number of children with school refusal in Norway can be as high as 5.4 percent. That is, about one in each class [106]. The consequences of teachers not having effective resources or general knowledge about illnesses like this,

can potentially be ruinous for students, including teachers and parents. Professor in Special Education, Marie-Lisbet Amundsen conducted a research on how the schools are meeting students struggling with school refusal (2019) [54]. The findings were based on interviews of Norwegian teachers in primary and middle schools. One of the participants stated that;

"The fact that teachers do not differentiate between "ditching" and "school refusal" may be the reason why teachers try to force the parents into pressuring their child into going to school." - Teacher [54] - Translated by one of the authors

Pressure can easily lead to the situation only becoming more ingrained. Conflicts between school and home can actually strengthen the student's experience about the school environment being insecure and alienating and can end up refusing to be there [54]. Some of the teachers express that there is an absence of knowledge and resources that they feel are needed, in order to sufficiently follow up on these students.

The example above only covers what poor knowledge, regarding school refusal can lead to. One can only assume that there are several other subjects/areas that need to be illuminated.

6.2 Resource Requirements

According to NIFU's report from 2019, teachers have expressed what they need in a resource [19]. To summarize the findings from the interviews in the report the teachers expressed that they want to be more involved in deciding what programs to integrate. A program should contain several and more general challenges occurring among youths. They also want more freedom, in other words, the teachers want to be able to adapt and customize the program when handling different issues [19].

A quantitative survey was sent out in conjunction with this thesis. A wide selection of teachers working in middle school was asked what conditions they believe need to be met if they were to consider using an external resource.

6.2.1 Quantitative data analysis from mapping survey

A total of **62** middle school teachers participated in the survey mentioned in the methods chapter, section 4.2.3. The tables and pie charts are created with Google Forms when all answers were summarized.

We excluded questions about their background because it was not needed, instead a question about how long they have worked as a teacher was asked.

How long have you worked as a teacher in secondary school?

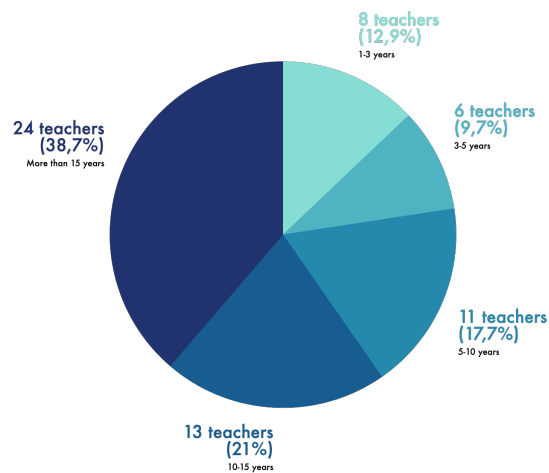


Figure 6.2: Pie charts results of the question: How long have you worked as a teacher in middle school?

The results from the survey showed that: 8 participants have worked around 1-3 years, 6 participants have worked around 3-5 years, 11 participants have worked around 5-10 years, 13 participants have worked around 10-15 years, and 24 participants have worked more than 15 years as a teacher in middle school. The majority of the participants were well-experienced staff members.

The participants were asked a question where they were to cross off five problems they believe are most prevalent in their school, and based on the 12 mental problems listed on the survey.

Choose 5 challenges you experience as most prevalent among middle school students today?

62 Answers

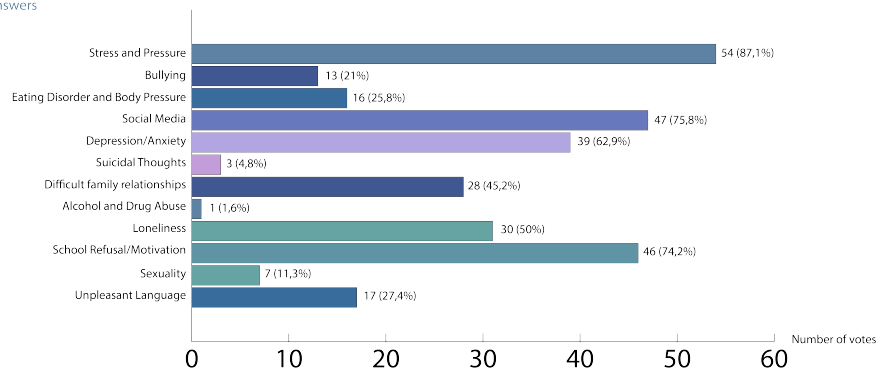


Figure 6.3: Bar graph results of the question: Choose 5 challenges you experience as most prevalent among middle school students today?

The following five problems scored the highest: 54 participants answered stress and pressure, 47 participants answered Social Media, 39 participants answered depression and anxiety, 31 participants answered loneliness, and 46 participants answered school re-

fusal and motivation. All mental health problems are important, but this survey was meant to aid in filtering out the five most prominent issues to focus on creating content for the net-based resource.

On the question "If you see a student struggling, what do you do?" the results varied and showed that the following methods were mostly used: 47 participants wanted to handle the situation by a conversation with the student immediately, 20 participants wanted to observe the situation first, 54 participants wanted to consult with other colleagues or the principal, 36 participants wanted to ask the school nurse or social worker to contact the student, 28 participants wanted to contact the student's parents, and 31 participants wanted to build trust between themselves and the student.

Have you experienced situations where you needed extra guidance when the student has shown signs of mental...

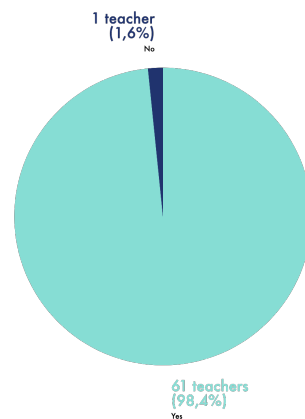


Figure 6.4: Pie charts results of the question: Have you experienced situations where you needed extra guidance when the student has shown signs of mental challenges or ailments?

The survey showed that 61 participants out of 62 have experienced situations where they needed extra guidance when the student has shown signs of mental challenges or ailments.

Did you know where to get advice and guidance?

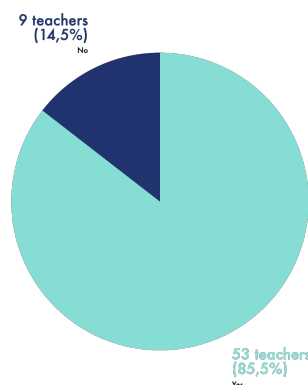


Figure 6.5: Pie charts results of the question: Did you know where to get advice and guidance?

Figure 6.5 displays 9 participants who did not know where to seek advice and guidance. One teacher is responsible for many students and about 9 teachers have been puzzled

about where they can seek advice and guidance when they have encountered situations. Were they able to give the student the help that he or she needed or was the student just directed to a school health nurse?

There were certainly many students they were unable to help because they themselves were at a loss.

Have you googled or searched online for advice and guidance?

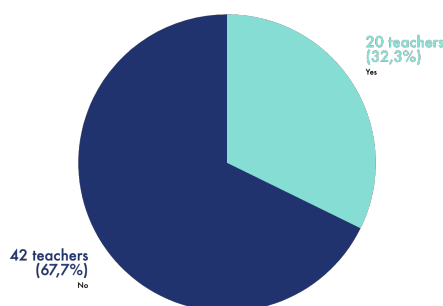


Figure 6.6: Pie charts results of the question: Have you googled or searched online for advice and guidance?

The results showed that about one-third of the participants have searched online for help and advice.

**If there had been a digital aid, would you have used it?
(Prepared in collaboration with professionals)**

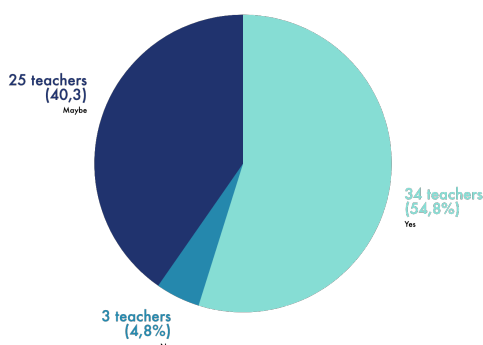


Figure 6.7: Pie charts results of the question: If there had been a digital aid, would you have used it? (Prepared in collaboration with professionals)

The results show that more than half of the participants would use a digital aid if it existed; 25 participants answered maybe and only 3 answered no.

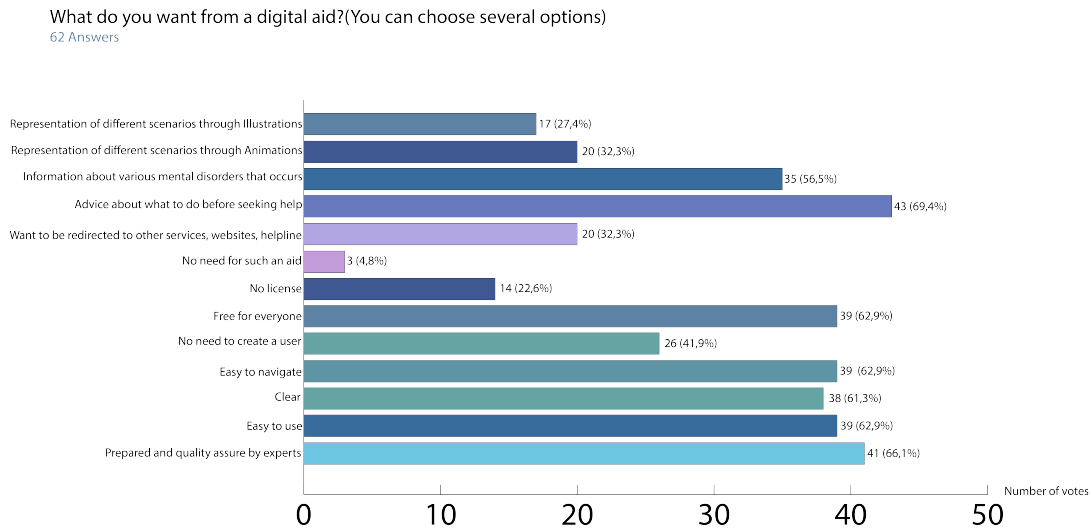


Figure 6.8: Bar graph results of the question: What do you want from a digital aid? Prepared in collaboration with professionals)

The survey also asked what the participants wanted from the digital aid, and the answers were:

- 43 participants wanted advice on what you can do yourself before you may have to contact external health care.
- 41 participants answered prepared and quality assured in collaboration with professionals.
- 39 participants wanted it to be free for everyone.
- 39 participants answered easy to navigate.
- 39 participants answered easy to use.
- 38 participants answered understandable and clear structure.
- 35 participants wanted information about various mental disorders that occur among young people.
- 26 participants answered do not need to create user.
- 20 participants wanted representations of different scenarios through animations.
- 20 participants wanted to be redirected to other services, websites and contact phones.
- 17 participants wanted representations of different scenarios through illustrations.
- 14 participants answered that the digital aid should not be licensed.

The participants wanted access to the digital aid through; The school's website, available on the school's learning platform, and comes up when searching online.

When the participants were asked to give suggestions for what a digital aid should contain, some participants answered:

- It should be concrete, simple and give me feasible tips on what to do in the classroom/teaching program.
- A checklist and a clear signal about what is the next step is in an action plan, preferably where you see the whole plan that you should follow.
- Clear differences between what a teacher is allowed to say/do and when it should be "passed on" to some others.
- Casework for use in class, where you get to shed light on topics through work and have conversations about mental health.
- Overview of who on can contact about what
- Concrete sentences for what one should say and certainly should not say.
- Films (both animation and "real film"), information in the form of text, tips for teaching programs, and associated assignments, must be designed/supported by experts. Clearly who / which bodies have been involved in the design. Clear.
- Multiple languages, easily accessible, help must come quickly (do not promise something that can not be kept)

After analyzing the results from the survey it seems like the majority of teachers prefer the following:

- Information about various mental disorders that occur among young people (56 percent).
- Advise on what you, as a teacher, can do yourself before you have to contact external health care (69 percent).
- Free of charge (63 percent).
- Easy to navigate (63 percent).
- Understandable layout and a clear structure (61 percent).
- Easy to use (63 percent).
- Prepared and quality assured in collaboration with professionals (66 percent).

42 percent of the participants in the study also answered that they do want to avoid creating a personal account. This answer can be interpreted as them wanting the resource to be more accessible. All the suggestions were taken into account, but due to practical and ethical limitations, some of the proposals had to be overlooked. The mapping survey is attached as appendix A.5.

Mapping Survey Evaluation The mapping survey was conducted early in the process in order to understand our target users and their needs. Not being teachers and having no fallacies to understand how a teacher thinks or wants, it seemed wise to apply the *HCD* method (section 3.3) where all the choices regarding design and usability were based on how a teacher will perceive it. In fact, research shows that whether the teachers and employees support and are able to customize the content, has a crucial effect on the results and success of the programs [26]. This assumption correlates with the *Technology Acceptance Model*, elaborated in section 3.2, which explains teachers' intentions to use technology. The chance of any technology being used is increased by making the system as understandable for the target audience as possible. The implementation process can

affect whether the programs work in practice [26]. Therefore, using a Human-Centered Design approach (section 3.3), where teachers being the targeted group, can be essential for the program to be successful, functional, and giving good results. In order to achieve this in a successful manner, it was important to include the target group in all the steps along the way. After analyzing the result from the pre-test presented below, it seemed like using the HCD method during the development of the resource was beneficial.

6.2.2 Pre-test Results

A total of **five** participants participated in the *pre-test* study, mentioned in the methods chapter (section 4.2.3). The results from the survey showed that the participants agreed that the product design matches its purpose.

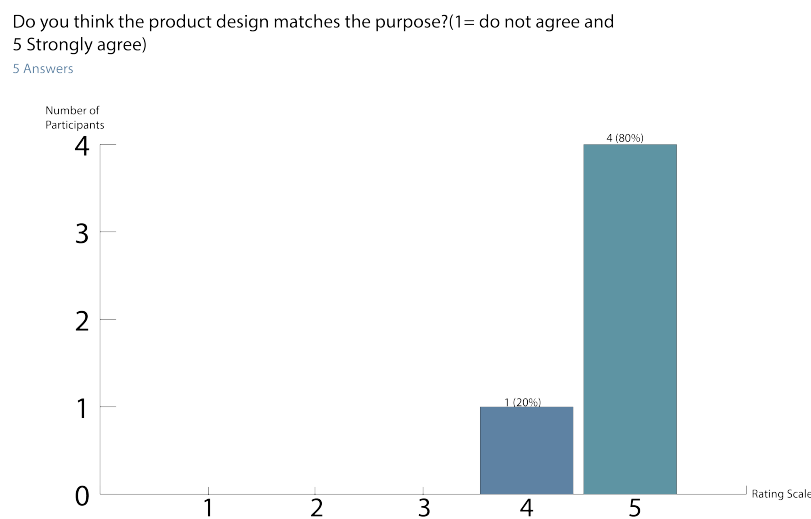


Figure 6.9: Results on Q1. Do you think the product design matches the purpose?

The participants elaborated in the comments field on proposals for changes in relation to design that:

- VO (voice Over) could have been more characterized by an information voice, less sensitive. The colors could have been more gender-neutral. They could also have been fewer, but without it being bothersome as it is.
- A little uncertain, but maybe shorter topic info? A little too much text? Typographic: A little bit small in some places. Experiences the typography as a bit inconsistent, but by analysis, I see that it is not really that.
- The subtitle font could have been larger to increase the readability of the video learning environment. This was much better on other videos with subtitles. Should be equal.

The participants also agreed on the question of whether the target audience feels that this product is designed for them.

Do you think the target group feels that this product is designed for them?(1= do not agree and 5 Strongly agree)

5 Answers

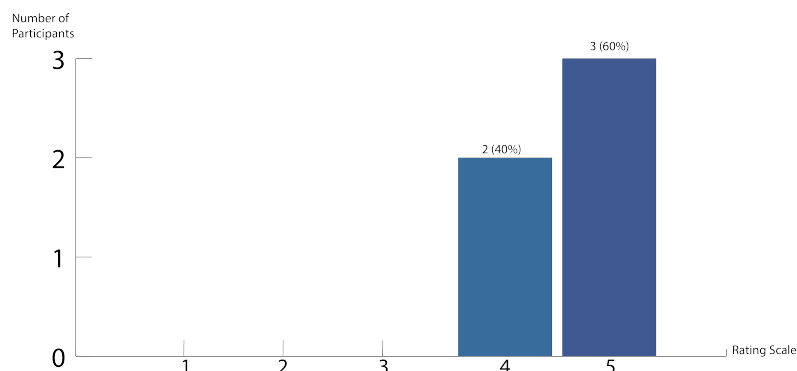


Figure 6.10: Results on Q2. Do you think the target group feels that this product is designed for them?

Two participants elaborated in the comments field on proposals for changes in relation to design to target the audience:

- More gender-neutral feel.
- When you are up to a challenge, you often need MORE info, so I think many will feel that it is too general and that they miss more links to further reading (specifically, for each topic).

When asked if they found it easy to navigate around the website, the answers were a little more varied, but still, the majority agree that it is easy to navigate.

Did you find it easy to navigate on the net-based resource?(1= do not agree and 5 Strongly agree)

5 Answers

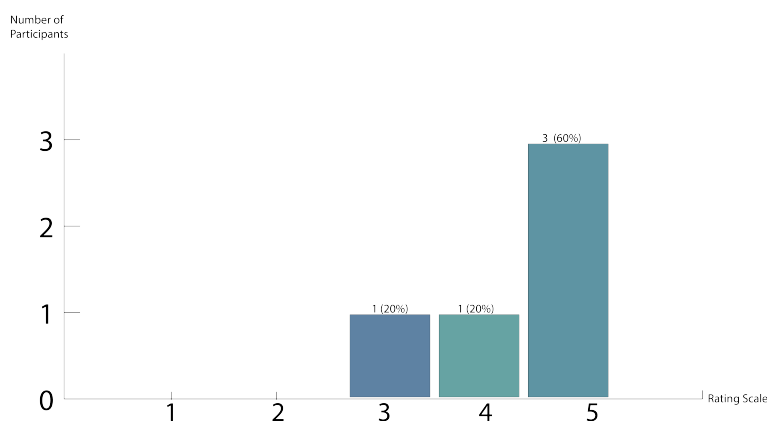


Figure 6.11: Results on Q3. Did you find it easy to navigate the net-based resource?

Three participants elaborated in the comments field on proposals for changes in relation to the navigation on the net-based resource:

- A home button. The target group will not simply think that you should click on "tankeverk".

- The drop-down on "Theme" is a bit slow, which causes me to press "Theme" instead of having to select the page I wanted. Insignificant.
- I first tried on the mobile, but there I first "found" only info about the learning environment, before I discovered the topic / about us at the very top ... I think maybe the theme list could have been more visible (also on PC), with clickable buttons, such as the about learning environment (possible it is intended during future work?)

When asked if there was any error, the majority (three out of five) answered no, but one participant encountered a challenge.

Did you encounter any errors while navigating the website?

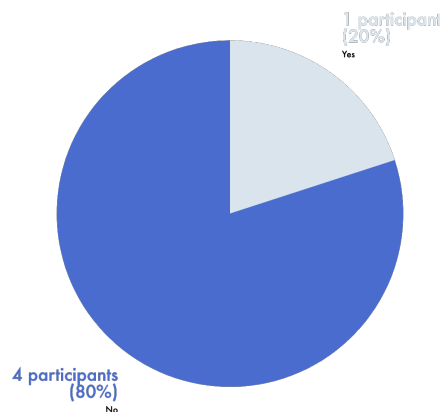


Figure 6.12: Pie chart results on pre-test question 4

The participant elaborated in the comments field that:

- On mobile, the illustrations (slide show) did not work as on PC. They stop "halfway" and become difficult to read

When the participants were asked if the information was presented in a credible way, everyone replied that they agreed.

The participants elaborated in the comments field on suggestions and comments for changes in relation to the information on the website:

- P1:
 - The sensitivity of VO. More neutral and matter-of-fact.
- P2:
 - Under the topic "Anxiety", and the page "Information about anxiety": there are errors in numbering under "Simple measures that can increase control and create predictability in the student:"
 - Under the theme "Anxiety" - "Illustrations" -> "Case 1": Should the sources be clickable links? (Can not be pressed now, only copied. In "Anxiety" - "Information about anxiety", then there are clickable links.
 - Under the theme "Stress and pressure" - "Case 1": Should the slides move automatically here? Because they do not do that here, but they did in the "Anxiety" theme
 - Where it says "Phase two", it should actually say: "Click through the slides to read about phase two, the implementation phase:"?

Was the information you received on the net-based resource presented in a credible way?(1= do not agree and 5 Strongly agree)

5 Answers

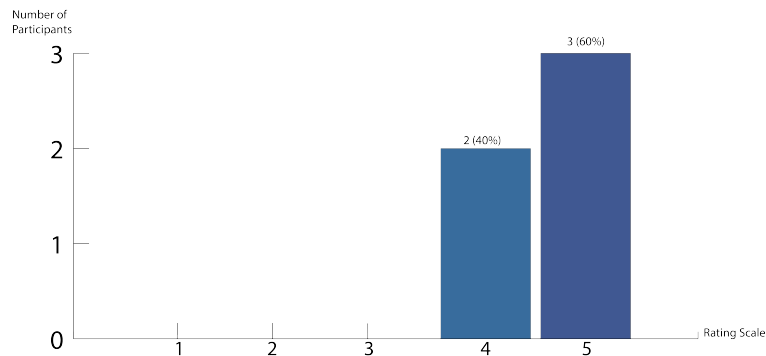


Figure 6.13: Results on Q5. Was the information you received on the website presented in a credible manner?

- Should "Phase Two" also be slides? (If there are only 2 pages, then maybe not necessary?)
- Would perhaps divide the "School refusal" page into several subpages you could click through. E.g, that the three "phases" had had their own side, where you could press "next" at the bottom. Gets a little too much text on one page, to my liking.
- P3:
 - The narrator could possibly have been even more alive and with when it is read aloud. However, this varied somewhat and thinks especially of the introduction to the learning environment. Again far better in other videos.
- P4:
 - Clear labeling with whom / where the information is taken from (source references) is important! Had to look a bit somewhere. The animated films are impressive, but struggled a bit with the (female) voice in the beginning, - a bit monotonous (but possible due to the dialect ..?).

When asked about their overall impression of Tankeverk.no the participants commented:

- P1:
 - Very nice and presumably useful resource for the target group. Graphics and animations are professionally done. Impressively good expression in the nice, simple graphic design and good, modest sound design. My objections are strictly just small things. I would think it hits female teachers better than male ones.
- P2:
 - Incredibly good product you have developed here! I think you hit well on both design and for the desired target group. The page is easy to navigate and has a clear layout.

Animation videos have good sound and catchy animations, which help the "reader" get useful details about the scenarios. These are my personal favorite. The comics and information pages cover the same information and details as the animated videos.

Very useful with sticky notes that can be printed out!

On some of the information pages, there may be a bit of text on one and the same page, which could rather be divided into several smaller pages. There was also a case where you could not directly click on the links (sources) at the bottom of the page, but you could still copy them at least.

All in all, this seems like a product that is very well designed and can be a useful tool for the target audience.

- P3:
 - Very good!
- P4:
 - Great design that gives the pages a professional look.
- P5:
 - Very nice design, illustrations, and information! Very impressed!!! Can be used with advantage both up and down the school levels (primary and secondary school) as an info/idea bank!

Pre-test Evaluation After analyzing the results and the feedback from the pre-test, there seemed to be minor changes that could be done. Due to the low severity regarding usability and overall impression, a conscious decision on our behalf was not to make any changes to the resource. This was to find out if the participants in the user testing would register the same errors as the participants in the pre-test. Also, some of the feedback and suggestions the participants gave could not be changed because they pointed out an intentional fallacy that we actually wanted to test on the intended target group. This included suggestions regarding how the information was presented (animation, illustration, or text). The pre-test survey is attached as appendix A.5.

6.3 Usability Testing

Not long after the pre-test, the usability testing of *Tankeverk* was conducted. This process consisted of qualitative interviews with 6 participants. The intention of these interviews was to uncover errors and omissions that the participants experienced during their testing of *tankeverk.no*. Of course, it was also in our interest to find out what the users liked about the resource.

6.3.1 Findings from Observation

Because the world is affected by a pandemic, the user testing was carried out at the users' homes without observers, where they could safely test and perform tasks they were given by the conductors. Because test participants could test the net-based resource in their home environment, they had more freedom to determine the time used. Participants could spend the time they needed without feeling pressured and they could test the product as much as they wanted. The test participants themselves mentioned during the interview that they spent a lot of time going through *Tankeverk*, and they had visited *Tankeverk* more than once. During the interview, the observer noticed that the participants navigated through *Tankeverk* at the same time as they were interviewed.

This indicated that the test participants had managed to learn the structure well on their own.

6.3.2 Qualitative Interview Results

The method that was used during the interviews is described in the methods chapter, section 4.4. Figure 6.14 presents all participants that engaged in the usability testing, arranged according to the order the interviews were conducted.

Interview	Participant	Stakeholder	Years of experience
#1	ML1 (Mannlig/male)	Teacher	23 years
#2	KL1 (Kvinnelig/female)	Teacher	1 year
#3	KE1 (Kvinnelig/female)	Domain expert (Professor of special education, family therapist, teacher ++)	30+ years
#4	KE2 (Kvinnelig/female)	Domain expert (Health nurse)	4 years
#5	KL2 (Kvinnelig/female)	Teacher	24 years
#6	KL3 (Kvinnelig/female)	Teacher	5 years

Figure 6.14: Participant descriptions

Two separate interview guides were prepared, one for the teachers and one for the experts. The recruitment process is elaborated in section 4.4. The different interview guides targeted separate parts of our research questions, further described in section 1.2.1. The pre-testing-interview section on both interview guides contains demographic questions to examine the participant's background, their trust in external resources, experience related to mental health, and whether mental health was included in their education. The post-testing-interview section was made to gather relevant data related to our research. The purpose of interviewing experts was to primarily ensure that the content of the online resource was credible and that it met the user requirements. Regardless of that intention, receiving opinions concerning usability and functionality from them was also useful. The questions in the interview guide for the experts should in principle answer RQ2, but we also wanted their opinions in relation to RQ1. The goal of interviewing teachers was primarily to ensure the quality of the net-based resource's credibility, user-friendliness, and functionality, and to get feedback on which presentation methods they and other teachers may prefer. The questions of the interview guide for the teachers were tailored to answer RQ2 and RQ3.

Post-Testing-Interview with Experts:

After completing all of the interviews, we had the impression that the experts thought *Tankeverk.no* was a good resource that conveyed information in a good way to the target group. The criticism regarding the resource was that they, as domain experts, felt that some information was missing. E.g, how to perform meta-communication in class, emphasize the importance of a good relationship with student and teacher. It should also be clarified that teachers should not function as a therapist for their students, and better inform that the advice can often be unrealistic, but is intended to guide.

Questions:

- 1. Your overall impression of *Tankeverk.no*?
- 2. How relevant was the information you received about the topics?

- 3. Do you think a resource such as *Tankeverk.no* could help facilitate teachers' workday? (considering that teachers may become a bit more independent in certain situations with students)
- 4. Which of the presentation methods; Animation, illustration, and text do you think is the best way to convey the message?
- 5. Do you think that *Tankeverk* can meet a need for teachers?
- 6. Do you think the target audience will think that this product is designed for them?
- 7. Would you recommend this product to a teacher or colleague?
- 8. Do you have any comments or feedback for us?
- 9. How could we improve your experience when using the resource?

1. Your overall impression of *Tankeverk.no*?

Positive:

Regarding the layout and functionality of the resource the general feedback from KE1 and KE2 was that it was easy to understand and easy to use. In relation to the content, both experts pointed out that there was good and compressed dissemination of knowledge, and the information was clearly collected from highly credible sources. Participant KE1 pointed out that what separates *Tankeverk* from other resources is that we focus even more on the classroom and the relation between a teacher and the students. Participant KE1 also recognizes and praised the focus on how a teacher should create a good classroom environment. Participant KE2 thinks that *Tankeverk* could be a very good tool in collaboration with health nurses and teachers.

Negative:

It must be mentioned that Participant KE1 was unsure whether the appearance and character design was perhaps a little too childish considering that *Tankeverk* is targeting a profession. Even though Participant KE1 recognizes the attempt to convey the importance of teachers creating a good learning environment, she also mentions that *Tankeverk* should have an even stronger focus on how a teacher can facilitate a good classroom environment and sufficient classroom management. Participant KE1 warned us that we may receive resistance from some people in the target group and adds that some changes need to be made. This means changes in the form of emphasizing that teachers should not function as a therapist, emphasize that the input/advice can often be unrealistic, and try to prevent that the use of *Tankeverk* can result in teachers not feeling adequate enough.

Evaluation of Q1

As domain experts, the participants confirmed that the information was collected from highly credible sources, easy to understand/use, and differs from other similar resources by focusing more on the classroom environment. Even though the participant's overall impression of *Tankeverk* was positive, one of the participants mentioned some changes she believes are important to initiate.

2. How relevant was the information you received about the topics?

Positive:

Both experts expressed that the topics were very relevant in regard to today's school. They emphasized the importance of the content being built out of research-based knowledge. They both thought that the resource provided a lot of good and concrete tips that could be useful knowledge for teachers to have. Participant KE2 especially liked that the resource focused on the difference between performance-oriented and mastery-oriented students. This is because her experience is that the majority of the students at the school where

she works, are performance-oriented. She would like to see the opposite.

Negative:

Participant KE1 mentioned that there are some important aspects that must be in place before she believes the resource can be launched. Her advice is to; 1. Go deeper into the classroom environment and describe how teachers can conduct meta-communication. 2. Focus more on the importance of establishing a good relationship between teacher and student. 3. Emphasize that it is not optional to care, teachers are in fact obliged to do so. Other minor improvements regarding information that should be reformulated or added were also mentioned and fixed there and then. Participant KE2 missed a slightly more nuanced picture of how anxiety can unfold. She mentioned that anxiety symptoms can be more invisible than how it is described in *Tankeverk*. However, these changes of the resource should be made in consultation with experts in order for the information to be conveyed correctly and properly.

Evaluation of Q2

The participants confirmed that all the information given about the topics was relevant. They recognized that the information originates from credible sources and that the tips and instructions were clear and concrete. However, one of them had some objections and suggestions for some topics that should be included. All proposals for change received from this expert are feasible and should be taken into account if our prototype is to be further developed into a full-fledged resource. To ensure the quality of the information several of the suggestion of changes could not be changed by us but has to be done in consultation with experts.

3. Do you think a resource such as *Tankeverk.no* could help facilitate teachers' workday? (considering that teachers may become a bit more independent in certain situations with students)

Positive:

Participant KE1 pointed out that the resource contained several quality tips. KE2, who works as a health nurse at a secondary school on a daily basis, agrees that a resource such as *Tankeverk* can help to lighten her workload. It can help in the form of relief if teachers would become more independent and able to receive simple tips from *Tankeverk* instead of from her.

Negative:

None of the participants mentions anything negative in relation to this question.

Evaluation of Q3

The participants believe that *Tankeverk.no* can contribute to teachers becoming more confident in uncomfortable situations where the appropriate course of action is uncertain. It may also seem that a resource like *Tankeverk.no* can contribute as a relief, regarding the health nurses' workday as well as the teachers.

4. Which of the presentation methods; Animation, illustration, and text do you think is the best way to convey the message?

Positive:

It was unanimous that a variation in presentation methods would be best. However, participant KE1 mentioned that she personally likes to read text. Regarding the characters, Participant KE2 liked that there was an abstract touch to the characters. We informed her that the inspiration behind these characters was trying to focus on diversity. She liked that.

Negative:

Participant KE1 was a bit skeptical and thought the character design looked a bit childish. She added that this is her personal opinion and understands that this is a style that is trending at the moment. She concludes that she is left in doubt regarding what she

thinks about the character design.

Evaluation of Q4

The participants agreed that a variation concerning the presentation methods was preferable. One participant was doubtful concerning the design. It needs to be mentioned that this was a personal preference and not based on which design the target audience would prefer.

5. Do you think that *Tankeverk* can meet a need for teachers?

Positive:

Participant KE1 and Participant KE2 absolutely believe that *Tankeverk* can meet teachers' needs.

Negative:

Participant KE1 adds that some changes need to be made. For instance, it should be clarified that teachers should not function as a therapist for their students, and better inform that the advice given on *Tankeverk* can often be unrealistic, and is only intended to guide.

Evaluation of Q5

The participants agreed that *Tankeverk* can meet teachers' needs. One of the participants also gave valid suggestions on how to improve the resource concerning that area.

6. Do you think the target audience will think that this product is designed for them?

Positive:

Participant KE1 and Participant KE2 answered "yes" on this question.

Negative:

None of the participants mentions anything negative in relation to this question.

Evaluation of Q6

The participants agreed that the target audience will think that *Tankeverk* is designed for them.

7. Would you recommend this product to a teacher or colleague?

Positive:

Both experts said they would recommend the resource to teachers. Participant KE2 user even asked if she could recommend the resource already, even though it is only currently a prototype.

Negative:

Even though participant KE1 said she would recommend the resource, she emphasizes that some changes must be made first.

Evaluation of Q7

One of the participants would recommend *Tankeverk* to others right away. The other participant would recommend the resource after implementation of the changes she has suggested.

8. Do you have any comments or feedback for us?

Positive:

The comments and feedback were about expressing their interest regarding the further development of *Tankeverk*.

Negative:

None of the participants mentions anything negative in relation to this question.

Evaluation of Q8

Both participants expressed their interest in meaning that the resource should be further developed.

9. How could we improve your experience when using the resource?

Positive:

Participant KE1 believed that the improvements she had suggested throughout the interview were sufficient and had no other objections regarding improvements.

Negative:

Participant KE2 responded to the statement about "teachers contacting the specialist health service". She believes that the procedure for this should be specified because teachers do not have the opportunity to contact special health services themselves. There are significant steps and channels which must be taken into account.

Evaluation of Q9

The participant's opinions concerning improvements regarding the experience of the resource were continuously commented on during the interview. However, one of the participants mentioned that formal proceedings mentioned in the resource should be specified.

Post-testing-interview with teachers:

Questions:

- 1. Your overall impression of Tankeverk.no?
- 2. Was it easy to navigate around on Tankeverk.no?
- 3. Which topic appealed most to you and why?
- 4. How relevant was the information you received about the topics?
- 5. Did you like the design on Tankeverk.no?
- 6. Which of the presentation methods; Animation, illustration, and text, did you like best?
- 7. Do you think that Tankeverk can meet a need for you / other teachers?
- 8. Do you think the target audience will think that this net-based resource is designed for them?
- 9. Would you like to use the net-based resource in the future?
- 10. How often would you use the net-based resource yourself? (never - rarely - sometimes - often - Very often)
- 11. On a scale of 1-5, what is the probability that you would recommend this net-based resource to another colleague?
- 12. Do you have any comments or feedback for us?
- 13. How could we improve your experience of the net-based resource?

1. Your overall impression of Tankeverk.no?

Positive:

Participant ML1 was impressed by how professionally designed the *Tankeverk* was. Everything seemed scrupulous thorough from design to content on the net-based resource. He thinks because *Tankeverk* is based on a warm design, has clear structure, holistic

layout and refers to many sources, these elements contribute to a sense of credibility. Teachers are very critical of sources, but participant ML1 feels that we have really managed to hit right in terms of design, content, and name. Overall, intuitive and easy to relate to *Tankeverk*. Participant KL3 commented primarily on how much she liked the name and how well it fit. The other thing she really liked was the layout. Easily accessible, easy to read, and nice colors. She thought the colors worked great together and made it easy to navigate around. The squares and the simple shapes and the aesthetic design helped to create tidiness and accessibility. Participant KL1 had prepared a lot of notes and the first thing she wanted to mention is how sweet *Tankeverk* is. Very aesthetic, nice, and tidy to look at. Participant KL3 mentioned that she especially liked the lists and wish there had been a PDF post for the lists on the information page as well. KL3 also acknowledges that sources are listed and says it helps to strengthen the credibility and mentions that she appreciates being referred to other sources, like UDIR, if she wants to read more about a topic. UDIR is a site most teachers relate to, but it is not exactly the most user-friendly site to find in her opinion. She likes that the information is presented and written in an easy and understandable way. This also applies to the animations, it's nice that it was a bit like a narrative voice and not just clinically recited. Participant KL2 expressed along the way that *Tankeverk* seems like a very good tool because there was lots of great information, tips, and advice and it would be great if the resource is realized.

Negative:

Participant ML1 mentioned that the scenarios should perhaps have been big from the start. Also, since participant ML1 is a Norwegian teacher, he wanted to mention that it was very good spelling, but there were a few typos in relation to words and punctuation. Participant KL3 wants to have all the themes on the front page instead of hovering/clicking a button to make them appear.

Evaluation of Q1

The participant's overall impression was positive. The participants described what they liked about the layout, design, and the three presentation methods. The professional expression, structure, and how it refers to many recognizable and credible sources contribute to building credibility and easy accessibility. The participants provided some suggestions for changes. It is possible to make case scenarios big from the start. Mental health covers many topics and can be a little overwhelming to have on the front page, but it is certainly possible to work out a better solution that works for all users. The participants also mentioned a few typos, but they have been fixed.

2. Was it easy to navigate around on *Tankeverk.no*?

Positive:

Participant ML1 mentioned that he liked the themes at the top where there was a small curtain coming down where it says anxiety, stress and pressure, and school refusal, and then a new submenu appeared. Participant ML1 thinks it was easy to navigate and the boxes helped to keep the layout tidy. Participant KL3 said yes, it was very easy. Participant KL1 mentioned it was easy, but she would have navigated better if she did not have to follow the task sheet (referring to the task sheet given before the user testing). Participant KL2 mentioned it was pretty simple. She mentioned that she followed the task sheet, but had a problem understanding where to click.

Negative:

Participant ML1 suggested using breadcrumbs or links back to the home page to avoid using the back button on the browser. Participant KL3 mentioned the themes again and proposed to replace themes instead of learning environment on the home page, to easily understand the relation to mental health.

Evaluation of Q2

The participants had no problem related to navigating around on *Tankeverk*. However, one participant wanted to have breadcrumbs or links instead of relying on the back button on the browser.

3. Which topic appealed most to you and why?

Positive:

Participant ML1 mentioned anxiety and that he likes the animation sequences the best. When he sees the animations, he can remember that some professionals have given similar advice in the past. But the participant (ML1) concluded in the end that he liked a combination of information, illustration, and animation. Participant KL3 mentioned anxiety because it is a topic that engages the participant. She notices that there are many who struggle with it and she also mentions there are many who have very little knowledge about it. Participant KL1 mentioned school refusal is a topic that is difficult to relate to and to discover. Also anxiety, due to the way the design of the theme was listed in a nice way with symptoms and measures. These two topics appealed more to her because she wants more knowledge and information on them. Participant KL2 liked all the topics, but the one she spent the most time on was school refusal because there was quite extensive information on it. School refusal is a very comprehensive topic for teachers and a delicate balance between the school and parents. All topics provide good information and reminders of what to do. This participant also mentions nice animated films.

Negative:

KL2 mentioned learning environment lagged when she watched it, but could not understand why.

Evaluation of Q3

It is easy to see that all participants have different preferences for how they want to be assigned information. The participant's list and justify what they liked about the different presentation methods. The question was aimed to understand the user's preference related to design and structure, but it is noticeable that the participants quickly focus on the information they receive.

4. How relevant was the information you received about the topics?

Positive:

Participant ML1 thinks *Tankeverk* provides very relevant information. The participant (ML1) mentions that he sees *Tankeverk* as a first aid kit, or a teachers encyclopedia for quick advice. Should the problems persist with the student, the usual procedures with the school and parents must be followed. The participant mentions that when he was new in the job, he felt uncomfortable when asking others for help. Quick help advice from a net-based resource such as *Tankeverk* would have been fantastic. Participant KL3 mentioned that it is very relevant. Participant KL1 thinks it was very nice information. Information about motivation was quite long and with a lot of text, but it was nice that she could press plus and minus if she wanted to read more about the part. Participant KL2 said it is very good. The participant(KL2) also mentions how a teacher goes on autopilot when they have been in the profession for a long time. Therefore, it is nice to get reminders of things and stuff that *Tankeverk* gives.

Negative:

Participant ML1 said it would be nice with a question and answer part, but the participant (ML1) understands that it then depends on people running and operating the resource every day. Participant (ML1) mentions that there could be a feedback function or something similar. Participant KL3 mentioned NDLA as a source is fine, but NDLA is

something the students use. If *Tankeverk* is made for teachers, the sources should come from heavier sources that are notched above NDLA. Participant (KL3) mentions that the other sources were very good because they come from experts. Participant KL1 answered yes, but thinks that maybe school refusal and motivation could be two separate topics, as motivation is not only related to school refusal, and for the sake of tidiness on the net-based resource. Participant KL2 believes the information is a bit on the surface. The participant believes that the information should be elaborated more and go into more detail because the school has routines that they follow closely.

Evaluation of Q4

The participants had divided opinions about the information. Yes, the information was relevant and presented in a structured and good way. One participant believes that some of the sources should come from places other than NDLA, yes NDLA is academically based, but preferably not use sources that students use. It is understandable that some of the participants think that the information they receive is relatively general. *Tankeverk* is meant to guide and provide basic information and guidance. Some themes have been grouped together, but here it must be justified for everyone to have different perspectives on what connects to each other.

5. Did you like the design on *Tankeverk.no*?

Positive:

Participant ML1 liked that it was a little mild, soft bluish color. They were nice and the participant (ML1) mentions that a lot of white space, gives plenty of space on the side which gives it a nice touch. The participant (ML1) mentions that he likes that the boxes were clear, which makes it understandable that everything in the boxes belongs to the same theme. The buttons made it clear too. Small details like the little animated line that comes under "good learning environment". The participant (ML1) liked small details that emerge. Overall nice, neat structure very friendly layout and design on the pages. Participant KL3 said she enjoyed it very much. Participant KL1 think it was sweet and not boring as many teacher-oriented sites are. The participant thinks that nice round shapes and nice soft colors are more comfortable to look at than sharp edges and colors. Participant KL2 think it was nice and tidy. The participant (KL2) also mentions that the figures were pleasant to look at and liked the figures that are most similar to humans.

Negative:

participant KL1 mentions that she may sound a bit stereotypical, but thinks that it may appeal more to girls. The participant (KL1) also mentions that it probably has nothing to say at all. The participant's reason for this comes from the figures she thinks are cute and pleasant colors.

Evaluation of Q5

The participants were satisfied and really liked the design on *Tankeverk*. Here they explain and describe what they liked and why they liked the design thoroughly. One participant thought that the color choice might make it more aimed at female teachers. During the pre-test, a participant also mentions this, but the product was tested by a male teacher as well, and he did not react to the color choice. Rather the male teachers liked the colors because they created a nice warmth to the net-based resource, mentioned in Q1.

6. Which of the presentation methods; Animation, illustration, and text, did you like best?

Positive:

Participant ML1 after listing everything he liked about them all he concluded with a combination of them all. Participant KL3 talks about animations, images, and text, but finally concludes that combination is the best. Participant KL1 mentions how much she

likes the posters (PDF). Personally, the participant prefers to read a short and informative text but concludes that a combination is the best for everyone. The participant (KL1) mentions that the animations can be used during teacher education to have casework. Participant KL2 mentions that she wrote down that the animations were very nice and that she sat for a long time and went through thoughts very carefully! The animations are easy to follow, if a break is needed it is easy to pause, can have sounded if you do not want to follow, which makes it easy to follow anyway. These things help to make things easy, and we want it easy, says the participant.

Negative:

Participant KL2 Mentioned it would be nice with text to speech on the text pages as well. Also up button when the page is scrolled far down.

Evaluation of Q6

Although all participants had different preferences, they nevertheless concluded that it was good with all three. This gives them the freedom to choose whether to read or watch animations. Text to speech and up button is mentioned to improve the information pages.

7. Do you think that *Tankeverk* can meet a need for you / other teachers?

Positive:

Participant ML1 thinks that *Tankeverk* can be useful for himself and for teachers who may work in smaller schools where they may not have access to a health nurse down the hall, and also maybe teachers who are new in the job and not encountered such situations before. Situations can appear anytime. An experienced teacher can use *Tankeverk* as a reminder to remember things one has learned in the past. The participant(ML1) remembered several things he had learned earlier in other courses when he saw some of the information on *Tankeverk*. Participant KL1 Thinks that it can certainly be an aid, but as of today it does not cover all needs due to lack of other topics. Regardless, the participant believes that many people can benefit from a resource similar to *Tankeverk* to find information first before searching around freely on the internet. Participant KL2 believes that there is an absolute need for *Tankeverk*. The participant mentions the topics selected on the net-based resource are difficult for teachers to prepare for and difficult to detect if one does not have knowledge of the symptoms.

Negative:

None of the participants mentions anything negative in relation to the question asked.

Evaluation of Q7

The participants believe that there is an absolute need for them and other teachers. It depends on how long a teacher has worked and how long the person has been in the profession. The net-based resource can be used by graduates to build basic knowledge and it can be used by experienced teachers as a reminder. Some schools might not have the same resources available and *Tankeverk* might help to cover some topics the school is not covering. *Tankeverk* does not cover all topics related to mental health, but if it is fully developed, the participants believe that it can be used by many.

8. Do you think the target audience will think that this net-based resource is designed for them?

Positive:

Participant ML1 answered yes, he also mentioned possibilities to expand with more topics or information that could fit further down the grade levels as well. Participant KL3 said yes, with the right professional weight in relation to where all the information is taken from. Participant KL1 mentioned what strikes her the most is the design of *Tankeverk* that is not boring and that it appeals to not only teachers but also parents who want information. Participant (KL1) specifies that the design does not scream teacher-oriented

because everything that is teacher-oriented today is boring. The participant mentions that you get used to the boring design because it is the information the teachers are looking for anyways. With *Tankeverk*, teachers get both lively design and useful information. Participant KL2 said yes, but she also mentioned it is probably very relevant for high school as well.

Negative:

None of the participants mentions anything negative in relation to the question asked.

Evaluation of Q8

Teacher-oriented websites are according to some of the participants boring and unstructured. They focus more on information rather than on design, but *Tankeverk* focuses both on design and information. The appearance of *Tankeverk* impresses the users, but it is also unusual in relation to what they are used to and they also think it is made for parents and teachers in other grades.

9. Would you like to use the net-based resource in the future?

Positive:

Participant ML1 said yes, absolutely! Participant (ML1) mentions he would have made a bookmark and used it. The participant (ML1) also mentions that he has a student who struggles frequently with hyperventilation and would send information from *Tankeverk* to other teachers in the workplace. Participant KL3 said, yes! Participant KL1 said, absolutely! She mentions because she is a recent graduate and does not have as much experience, that the net-based resource will make her feel a little safer if situations should arise. It is especially nice that it is mentioned that *Tankeverk* should not be used to diagnose students, but rather as a starting point for guidance before seeking help elsewhere. Participant KL2 said, yes absolutely. The participant (KL2) mentioned she would use it for tips and guidance, and at least recommend it further.

Negative:

None of the participants mentions anything negative in relation to the question asked.

Evaluation of Q9

The participant is positive to use the net-based resource in the future.

10. How often would you use the net-based resource yourself? (never - rarely - sometimes - often - Very often)

Positive:

Participant ML1 mentions that it is a bit difficult to say, but once a week to a few times a month. Participant KL3 said she is not sure, but if she would get access to a fully developed *Tankeverk*, she would go through the whole solution, and then tipped colleagues about the net-based resource. In the end, she would use the net-based resource in case of situations arose. Participant KL1 thinks that the learning environment is something a teacher should go through before the new 8th grade starts. Otherwise, the participant (KL1) would seek out ideas when she encounters situations, and she wanted to print out the posters to set up at the workplace.

Negative:

participant KL3 mentioned that most of the topics presented on *Tankeverk* are something their school focuses on and has lots of resources on. The participant (KL3) believes that if she is to use *Tankeverk*, new topics must be added.

Evaluation of Q10

As the participants mention, it is difficult to know exactly how often to use the resource. Much depends on the need and whether the resource meets their needs.

11. On a scale of 1-5, what is the probability that you would recommend this net-based resource to another colleague?

Positive:

Participant ML1 says a 5 because he would send an information link from *Tankeverk* to a colleague and tell the colleague the information is open and free on the internet, so it is very accessible. Participant KL3 says a 5, she would recommend the net-based resource. Participant KL1 says she would. She mentioned when the product is finished it is a 5. Participant (KL3) would recommend it to others and taken it up in meetings or posted on teams.

Negative:

None of the participants mentions anything negative in relation to the question asked.

Evaluation of Q11

Tankeverk scores were high on the scale. Participants are strongly positive to share the net-based resource with colleagues.

12. Do you have any comments or feedback for us?

Positive:

Participant ML1 mentions that there is not much. Because the design and content are so well done. It is fun to see that there is now something for teachers online and hope this is further developed. Participant KL3 experience that it is very adapted to employees at the upper secondary school, and for parents who have children at the upper secondary school. Participant KL1 wanted to know what other topics will be presented on *Tankeverk* in the future. The participant(KL1) mentions that it would have been a useful and a great advantage if all mental health topics were gathered in one place. Participant KL2 mentions that the information can be used on bigger groups as well and not on one student only(talking about learning strategy).

Negative:

Participant KL3 wants *Tankeverk* to give more concrete tips on, e.g, how to motivate an unmotivated student. Give specific tips on how to build a good learning environment or relationship with a student. Participant KL2 specifies more and makes more specific comments related to points that are mentioned.

Evaluation of Q12

The feedback was very positive. Expanding topics on *Tankeverk* to improve the participant's user experience is entirely possible to achieve. Considering that there were no major requirements for improving the design, but rather focus on giving concrete tips and more information.

13. How could we improve your experience of the net-based resource?

Positive:

Participant ML1 mentioned expand with more themes and continue with animations on the information pages. Create multiple PDFs for all topics that teachers can print out. Participant KL1 wishes for more of the PDFs. Participant KL2 creates more PDFs and also makes every poster printable.

Negative:

Participant KL1 mentions that the topic of school refusal and motivation was too long and wonders if it is possible to make it even shorter. Participant KL2 mentioned the up button when users have scrolled far down.

Evaluation of Q13

Again, the participants mentioned more topics and PDFs for print on every page. Implement an up button, as mentioned earlier. The participants also mentioned few changes in relation to structuring text.

6.4 Evaluation of Results

The feedback received during the user testings of *Tankeverk* was highly constructive, useful, and has been invaluable data during the process of forming a conclusion. Analyzing the data has revealed suggestions for improvements, potential benefits as well as constraints, regarding applying *Tankeverk* as an external resource.

6.4.1 Suggestions for Improvement

The results from the user testing illuminated various areas where there could be room for improvement, regarding the information being communicated. Also, some of the participants expressed several suggestions as to what other important areas/subjects should be considered as an addition to the resource.

Facilitate a good learning environment

Professor in special education Ingrid Lund, University of Agder [107], who specializes in children's and young people's mental health believes that facilitating a safe and good environment in the classroom and thinking of school context as a preventative arena and/or as a contributing factor to increased vulnerability in students, can help to reduce negative effects (E.g. Anxiety, depression, etc.) in vulnerable students. A recognized personality in relational pedagogy, Jan Spurkeland, states that if a teacher focuses on creating trust and understanding each individual, the students will achieve strong learning outcomes[108].

"The pedagogical thinking presupposes that the educator uses relational attitudes, abilities, and skills. - Jan Spurkeland"[108].

However, in order for Lund's and Spurkeland's theories to work in practice, it is safe to assume that it depends on the individual teacher's relational competence. Do teachers have enough knowledge to create a good teacher-student relationship to build a positive environment? Are they competent enough to detect when some students in the class are struggling with mental health problems? During the user testing, two teachers mention that they did not understand why the learning/classroom environment was on the front page of *Tankeverk*. They perceived it as if the main focus was on the learning environment and not on mental health. It needs to be mentioned that at the schools these two are employed, establishing a good learning environment is highly focused on. Since a great emphasis is assigned to that subject, they did not find it relevant enough to be placed on the front page. The other test participants did not mention this, we can therefore not decide whether all schools have an equal focus on the learning environment.

The learning environment is an important topic, and perhaps there are many teachers who do not understand how important it is to establish a good learning environment. There are many aspects that need to be taken into consideration when a student is struggling in the classroom or in front of other classmates. In any case, this should not be a responsibility a teacher bears alone, but the whole school should focus on the learning environment and actively work together to train and give teachers the tools they need to succeed.

Meta-communication

Participant KE1 (expert) advised us to go deeper into the classroom environment and describe how teachers can conduct meta-communication.

"Your recourse lacks a focus on the teacher metacommunication with the rest of the class.. not just about mental health, but in general.. simply, how they can communicate in class." - KE1 (Expert during qualitative research) Translated by one of the authors.

When she (KE1) uses the term meta-communication, she explains it in the way that teachers must talk about communication in class. It is essential that a teacher is able to double-communicate with the rest of the class, not only with the student who may be having a hard time.

As an example, she explains that if a teacher has a student who is struggling with sudden anxiety attacks, how does the rest of the class react to this? There is something going on behind the teacher at the same time as he/she has to complete the steps, listed on the resource, in order to support the student who may be having a hard time. The rest of the class does not sit still and simply just waits for the teacher to have a calm conversation with the student. Some of them might be curious and wonder "what's going on now?". Some of the other students keep laughing because this is one of the dumbest things they have ever witnessed. She (KE1) emphasizes that in order for this student to feel safer in a classroom, it is essential that the teacher has already talked about such things with the whole class. Early on, the teacher needs to establish guidelines for which attitudes and actions that are okay in a classroom. So, what should a teacher do if the example above is legit knowing that one of his/her students can have sudden anxiety attacks? If it was her classroom she (KE1) would have already had a conversation with the class about this. One can for example say: "Sometimes the sweat just starts to flow behind Silje's back.. and under her arms and face, because she gets so scared... In fact, some get more scared than others... And Silje is one of them... What does Silje needs from us then?.. Yes, she needs me to be with her.. and then I need from you (the rest of the class), that you can wait a few minutes.." In her (KE1) expert opinion, a teacher can say that in a classroom where it is safe to be. The use of meta-communication in the classroom has actually been researched and it seems to apply this method to encourage the students to reflect on their communication skills and better understand their oral messages [109].

The teaching profession and responsibilities

Is it possible that *Tankeverk* expects too much from the teachers? One of the experts that was recruited in correlation to our qualitative research, warned us that we may receive opposition from some of the users from our targeted group.

"having a resource.. and doing the things you say is the solution.. some teachers will just disconnect.. they would say "we do not have the slightest chance!.." or "It sounds ideal..and this is easy access to knowledge.. and yes, we see that this is right.. but we have no chance.. we have 24 other students" - KE1 (Expert during qualitative research) Translated by one of the authors.

The same participant implied that teachers might perceive a resource like *Tankeverk* as linking the teacher role to close up to the therapist role. Results in relation to a study where they explore teachers' conceptual understanding of mental health support this assumption [103]. In fact, some teachers think that the promotion of mental health is beyond their field of competence and responsibility. The same study reveals that teachers also show a tendency to regard mental health as a negatively loaded term with some degree of stigma attached to it when mentioned in a school context [103]. A common misconception among teachers is also the assumption that there is a thick line between mental health and illness and diagnosis [103]. Even though these are fairly common views on mental health among teachers, it does not hide the fact that their students are struggling and they have to act on it according to the legislation. The experts from our qualitative research strongly agreed with this claim, and states;

"[..] Life mastery is added to the new overall plan [..] Therefore, it is not about whether this is interesting to them or not .. this is something they have to be interested in!" - KE1 (Expert during qualitative research) Translated Co-author.

"These are actually things they have to deal with .. because that is the reality [...] they have the daily contact and spend many hours with the students" - KE2 (Expert during qualitative research) Translated by Co-author.

According to the *professional ethics for the teaching profession*, a teachers societal mandate is to promote students' learning, development and education [110]. This also includes encouraging good values, attitudes and actions.

The intended users of *Tankeverk* are not certified in any way to diagnose or claim anything regarding students' welfare. To ensure that the users of *Tankeverk* won't perceive it as a resource for diagnosing students, a disclaimer presented in figure 6.15, is visible on the resource. The intended purpose is for the resource to function as a guide for teachers when students show signs of challenging behavior and behavior changes. When creating a resource where diagnoses and disorders are addressed, we found it incredibly important to emphasize to the user that "Tankeverk.no" shall not be used as a tool to diagnose the students.

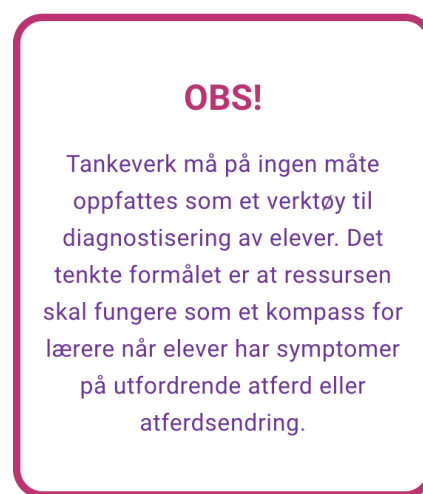


Figure 6.15: A disclaimer displayed on www.Tankeverk.no

So, *is it possible that Tankeverk expects too much from the teachers?* If the users perceive *Tankeverk* as an encouragement to act as a therapist or to take any responsibility for "fixing" the students' mental health, we have completely failed what we were trying to achieve with this project. *Tankeverk* should however provide advice and guidance to the teachers who voluntarily seek it out, and want to be more understanding and having more surety regarding their student's mental health. But that does not hide the fact that, as written in the regulations and mentioned by several experts, teachers have a duty to care. *Tankeverk* can only provide them with clues as to how to care in an appropriate way.

Teacher as a profession It needs to be emphasized that the following opinion is given based on one of the participants personal preference, and purely on an aesthetic level. The first domain expert who participated in the qualitative interviews was a bit torn in the dilemma of whether we downgrade teachers as a profession or not. Her question was if the illustrations and animations on the resource were too "childish" considering that we target a profession? When inspiration from other state-owned sites was gathered for examination, we found that the pages contain extremely much text, unmanageable structured, little images, but there were some pages that managed to be eye-catching and it was *RVTS sør* (2.3) and *Spinnville følelser* (2.3) Because these pages use minimalist construction, aesthetically different illustrations, and clear design, they managed to capture

interest and stand out. As mentioned in 5.3.1, the goal with *Tankeverk* was to build an aesthetically clean, functional warmth design and to break with the clinical feeling. It is important to note that we understand why the expert is in doubt. The expert is experienced and has been in the profession for a long time and has read countless articles on paper and online throughout the whole career. Because the teaching profession is very information-oriented, images or graphic elements may have less priority. An important factor to keep in mind is that website design for 20 years ago was "The more the merrier", where a lot of information was pushed into a tight space. Today's design concept is "less is more", and can be different from what the user is used to. The positive effect when using the HCD approach is the users' opinions and feedback are valuable and helps us to meet their needs in terms of design and content.

After analyzing the data collected in the user testings, it did not seem like this was an issue for any of the teachers participating in this research. Although, the opinions were a bit divided on the question of whether they liked the abstract characters versus the more realistic characters.



Figure 6.16: Abstract character and realistic characters

"I think that the design could appeal to everyone .. not just teachers .. maybe parents who want information even... It appeals to teachers too, but I don't think that the design itself screams .. teacher-oriented. It is certainly something to do with the fact that what is oriented towards teachers is often a bit "boring" [laughs] [...] we (teachers) are not used to it being so much work done with design... information is often the main focus .. and everything around is not so important" - KL1 (Teacher, during qualitative research) Translated by one of the authors.

The feedback from KL1 confirmed our theory of teacher-oriented websites and the way teachers are used to having information presented.

"The appearance of the characters is not that important to me.. but personally... I am less fond of abstract things .. and I prefer a bit more relatable.. now... I'm not claiming that I thought a lot about it.. therefore I must say that it did not affect the overall experience" - KL1 (Teacher, during qualitative research) Translated by one of the authors.

Receiving feedback that the majority of the teachers actually liked the realistic characters better than the abstract characters was a bit of a surprise to us. Our assumption in relation to this dilemma was that teachers would prefer characters that do not stigmatize and are more inclusive concerning diversity. The conclusion after analyzing all of the results related to this dilemma seems that the majority liked the variation of the use of character styles. The abstract characters may be more fitting on the website itself and rather use the realistic characters in the animated films to make it more relatable for the users.

Now, *do we underestimate the teachers as a profession?* One must always assume that people have personal opinions and preferences, and KE1 was the expert who was not fond of what she chose to call a "childish" design. This feedback was useful to the extent that we worked more intensively to find out if the target group shared the same opinion as this expert. It turned out that all of the participants who belonged to the target group actually seemed to really like the design. They were in fact more concerned with the use of abstract versus realistic charter design than the overall design expression. In this way, we became even more confident that the design expression chosen on *Tankeverk* matched the target group's preferences. Although all feedback is taken into account, the expert's opinions are not as relevant as the teacher's opinion regarding this particular aspect of the resource. To uncover such details was exactly why we included the target group in the user testing.

6.4.2 Possible Benefits

The NIFU report (2019) states that external programs cannot cover everyone's needs. However, being part of plans and of the continuous and systematic work on students' mental health, it has turned out to play an important role [19, p.81].

Create Awareness

Tankeverks' purpose is to convey knowledge about mental health to teachers working in middle school. Benefits of using resources like *Tankeverk* can lead to increased knowledge and possibly improve their actions, attitudes, and assumptions towards their student's mental health. As illustrated in figure 6.17, people's actions are based on their attitude towards something. The knowledge influences the attitudes and actions taken, in a teacher-student relationship [111].

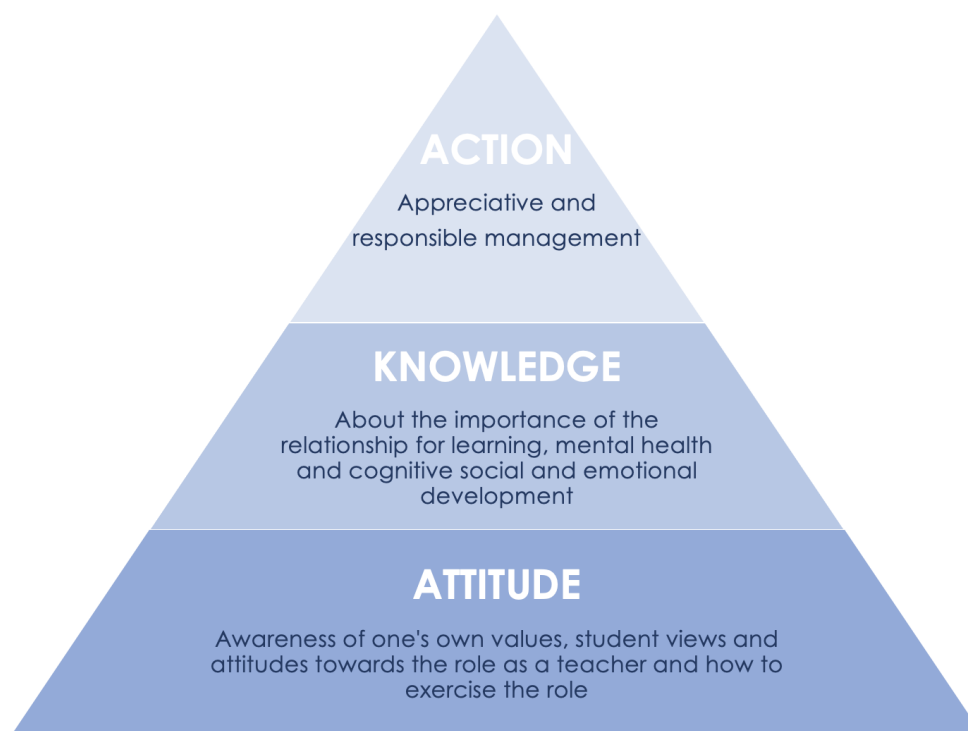


Figure 6.17: *Ingrid Lund's illustration of a teacher's relational competence* [111] - Translated by one of the authors

One can assume that teachers who are perceived as understanding and possess knowl-

edge about students' potential struggles, may find it easier to build a relationship with them.

After the Pandemic

The pandemic has been mentioned several times throughout this thesis, and for good reason. Although it is not certain that the pandemic is causing an increase in mental health challenges among young people, research shows that the pandemic contributes to influencing the mental state of the younger part of our population [112]. A net-based resource like *Tankeverk* is not optimal to use during a pandemic. Partly due to restrictions that generate a lot of homeschooling, which then leads to less contact between teachers and their students. However, teachers can use the resource to prepare themselves for what signs to look for and, preferably, be better equipped to help students with mental health challenges.

Improve Teacher-Student Relationship

Opinions are diverse regarding whether or not the relational dimension should be implemented into teachers' education [111]. However, that does not hide the fact that a relationship is formed between a teacher and a student, regardless of whether the quality of this relationship is perceived as "good" or "bad". Becoming a teacher is a choice, but there are in fact ethical guidelines and duties that says a employed teacher has to ensure that the relationship is as good as possible [113] [110]. Jesper Juul and Helle Jensen address pedagogical ethics and emphasize the importance of the teacher's ability to take full responsibility for the quality of the teacher-student relationship [114]. Students and teachers have no choice but to relate to each other, thus the teacher's relational competence is crucial. Not only in relation to the students' learning but also during the process of development of the learning environment and establishing a good assessment practice [113]. However, to fulfill this duty depends on the relational competence each individual teacher possesses. UDIR describes a supportive teacher as one who shows both emotional and professional support [113].

Establishing a safer learning environment for all students is crucial. If a teacher gives emotional support in the learning process and succeeds to develop a good relationship with all students, the student could perceive the climate in the classroom as safer [113]. This was something that one of the experts during our user testing was extremely concerned with. Although it is important for a teacher to try to establish a good relationship with his/her students, she said that it is also natural that sometimes it is not possible. The reason for this may be that the degree of relational competence varies from teacher to teacher and/or that there is no chemistry between the teacher and the student.

"It is absolutely crucial that the student is confident in the teacher.. As a teacher, you can try to the best of your ability.. but, if there is an adult who does not like the student.. and the student do not like the adult... then there is no chance" - KE1 (Expert during qualitative research) Translated by one of the authors.

Having a resource like *Tankeverk* could emphasize the importance of establishing a good relationship between teacher and students. It can help some teachers to become more aware of the process of relationship building.

Prevent Misconceptions

According to Amundsen's study, [54] a common impression is that some students are being treated as "bouncing balls" in the support system. This often leads to the schools

having sole responsibility for these students [54]. It needs to be emphasized that all employees at a school shall, without prejudice to the duty of confidentiality, report all situations where they suspect caregivers failing to protect the child from violence, abuse, or sexual abuse, to the child welfare service [115]. However, a relatively high proportion of the participants (teachers) in the study believes they are obliged to send reports of concern to the child welfare service if the students are absent from school over a large period of time. When there is no reason to suspect neglect, the school actually violates the duty of confidentiality if a report of concern is sent to the child welfare service without there being any basis for this [116] [54]. Other inconvenient outcomes could be the possibility of inflicting an unnecessarily large load on the child welfare service, ending up with detaining resources that may be needed elsewhere. Sending reports of concerns as a solution can also be perceived as a declaration of no confidence by the parents and make it harder to obtain further collaboration with the school and home [54]. Resources informing teachers about subjects that are clearly a common misconception, could perhaps in this case be a possible solution or function as preventive towards such problems.

Customizable

There are both advantages and disadvantages with the eclectic use of programs in schools. One of the challenges when developing school environment programs is being able to adapt it to every school's reality. The major advantages are schools being able to supplement and draw inspiration from elements from different programs and tailor it into a more fitting program. As mentioned in chapter 2, in section 2.3.2, the NIFU report from 2019 concluded that implementing programs/resources where the subjects are based on local needs, will have a greater probability of success during the implementation process [19, p.80]. Some of the informants (teachers) also stated that they prefer educational freedom in particular. One of the most preferred programs in the study was consistently referred to as a "toolbox in the work with mental health" rather than describing it as a comprehensive and systematic measure [19, p.72].

The disadvantage of not being consistent with a program is the challenges with documenting the effects of the different programs. Also, one of the informants in NIFU's report mentioned that applying for several programs with different target groups can sometimes be problematic, in the sense that the entire teaching staff does not work with the same measures towards the same goals [19, p.58].

6.4.3 Possible Constraints

Although there is frequent use of programs in schools (2.3), the significance of applying them is debated. Several of the existing programs require a relatively large amount of resources and funding. As mentioned in chapter 2, certifications, purchasing manuals and licenses and the use of skills development funds are common requirements by the program providers [19].

Generalizing

According to an article written by Kari Aamli and published by *Utdanningsforskning.no* (Union of Education Norway's research portal [117]), there are expressed concerns regarding the growing use of standardized programs developed to prevent and solve problems in schools [118]. Their main argument is that manual-based methods will provide universal solutions for student welfare and these solutions do not take into account that human beings are unpredictable [118]. They argue that developing solutions that fit everyone is not achievable. During our user testing, Participant KE1 mentioned something similar and encouraged us to specify that the advice given on *Tankeverk*, can often be unrealistic, and is only intended to guide. Therefore, it is included in the future work

section 7.2, that it needs to be clearly specified that the solutions conveyed on *Tankeverk* are only suggestions and may not be appropriate in all contexts.

Insufficient Guidance

Tankeverk is a resource where the users stand solely alone and must interpret the content on their own. Programs are often used in combination, or individual elements from other programs are used in conjunction with another «main program». The reason for this inconsistency could be that the schools are not receiving guidance, are receiving insufficient guidance, or experience the program providers as unresponsive when delivering feedback [26]. This is supported by *SDT* elaborated in section 3.1.1; Ledford concluded that the effects of the reward being received, depends on the social context in which it is provided [59]. The program providers possible lack of adaptation to the school's reality can also contribute to the schools supplementing or terminating the work with the program. One other major factor for the schools continuing with a program is whether the management and teachers experience that important challenges in the school's everyday life falls outside the programs focus [26]. Combining *Tankeverk* with other resources is not perceived as an issue, but it can be a disadvantage and un motivating for users who feel that they lack proper training or someone to turn to if they are unsure regarding certain areas.

Chapter 7

Conclusions

In this chapter, a summary of our main achievements is presented.

Research Question 1: To what extent are teachers equipped for helping students with mental health problems?

The target group has expressed, through interviews and mapping surveys, that there are not enough low-threshold offers for teachers on the market that lived up to their expectations. There are various resources available today, but they often focus on bullying and harassment. The school's action plans often focus on the main problem that applies to that individual school, such as bullying, but the action plans do not cover all mental health problems.

There is a large number of other challenges that are not related to pure bullying or harassment, such as anxiety, motivation, stress, pressure, and many more. Here, the target group themselves have stated that they do not have enough knowledge to handle, and sometimes feel helpless in situations related to these topics. There is also a large number of categories within mental health, and all of them are important. But we had to limit ourselves due to time, and chose to focus on three categories to get more information about, according to the target group mapping survey: anxiety, stress/pressure, and school refusal and motivation.

The net-based resource (*Tankeverk*) we presented to the target group, was very well received. *Tankeverk* was praised for its content and for its design. The way problems are visualized and explained makes it easier for the target group to remember and recall what they have learned in the past. *Tankeverk* is something they want to recommend further because the resource shares lots of valuable information and the information they received was presented in an understanding manner. Yes, there are resources and action plans, but most often it is aimed at bullying and harassment so teachers are still insecure when it comes to mental health. The schools offer services as school health nurses, but the health nurses are overworked and do not have the capacity to assist all the time when they are only at school once or twice a week. We have successfully implemented a Human-Centered Design approach where we have involved teachers to be able to create a product they want and need.

Research Question 2: How can a net-based resource assist teachers in handling possible mental health challenges of their students?

In the development of *Tankeverk*, the resource underwent several iterations of the Human-Centered Design approach. We ended up creating three alternative presentation methods to see which method is preferred by the target group. It is difficult to find good and relevant information, but it is even more difficult to know how to present it in the best pos-

sible way to satisfy the target group. Teachers, health nurses, and experts were involved throughout the process in order to improve *Tankeverk*. Some other important points that are relevant to include, came up when we interacted with an expert. The expert pointed out that yes, it is one thing that teachers are struggling with and that they need help. The experts stated that teachers must try and build a good learning environment to prevent events from happening. Prof. Ingrid Lund stated that building a safe and positive culture in the classroom, between the teacher and students and between students, is a recipe for success. The classroom environment is important for teachers and incredibly important for students. If the students feel safe and are surrounded by an environment that promotes a safe learning arena without the class ridiculing each other, it can help to inhibit anxiety, panic, motivational issues, bullying, and more. The experts were asked what they think about the design of the net-based resource, and the answer was divided. Some were unsure whether the target group could think that it was presented in a childish way, others thought that it was a completely fitting design that suited the purpose and target group. Our goal was never to create a net-based resource for the experts, but to create a net-based resource that is adapted and attractive to our target group, teachers. The target group expressed positive opinions related to *Tankeverk*. The target group mentioned many uses for the net-based resource during user testing. Some would use it as a first line (on the internet) to seek advice and guidance on mental health, some would forward the information to colleagues who have students who are struggling with exactly those problems, some would use the net-based resource to refresh previous knowledge, some who are recent graduate wants to use the resource to prepare for various scenarios that may arise, and one mentioned the net-based resource can help teachers who works at smaller school that do not have access to a school health nurse 4 days a week.

Research Question 3: What approaches do teachers regard as recommended for an easy-to-use net-based resource?

Throughout the whole project, we conducted interviews, prepared surveys, pre-tests and user testing to better understand the users and their needs. The mapping survey described in section 4.2.3, was prepared to investigate what the target audience needed and wanted in a net-based resource. The results from the mapping survey (section 6.2.1) showed that the participants wanted a digital aid that is: license-free, free for everyone, easy to navigate, understandable and has a clear structure, easy to use, prepared, and quality assured in collaboration with professionals, and that can be used without having to create a user. The participants wanted access to the digital aid through the school's website, on the school's learning platform, and/or available online.

The Design Process went through many iterations and at last, we wanted the target audience to decide on the presentation method. *Tankeverk* is structured to present three different presentation methods: animation, illustrations, and information(text-based). By presenting three different presentation methods we created variations and options for the target audience to choose between. Before the user testing was conducted, we hypothesized that the teachers might like the animation methods the best. The results from the user testing showed that we were wrong, the test participants were equally positive to all three presentation methods. They liked that it was a combination and that it broke with a boring teacher-oriented style. Websites that address mental health are often sterile and clinically designed. But *Tankeverk* is the opposite because we focused on creating a well-structured, clear, and warm design. From the start, the target group thought everything was commendably well done and everything matched in style. Overall, the net-based resource did exceed the participant's expectations in design, structure, navigation, and all three presentation methods. No one found it difficult learning the navigation methods and everyone manage to learn how to use *Tankeverk* by themselves at home.

7.1 Important new insights

Through consultations with Ingrid Lund [10], we were made aware of several aspects that we ourselves had not thought of. She shared with us important new insights, related to the development of *Tankeverk*. It is in our belief that following these suggestions for improvement, will be crucial for the resource to become more effective. She emphasized that all the information on the resource was good and mediated in a good way. However, her assumption is that the resource will fail, unless one stresses the importance of facilitating a good learning environment (6.4.1) and conducting meta-communication (6.4.1). It is important that the teacher early on establishes what attitudes are accepted to have in the classroom. Positive attitudes will contribute to establishing a good foundation for the learning environment so that the students dare to contact the teachers when they are struggling.

In order to reduce the pressure on teachers, it was mentioned that we should specify that the solutions conveyed on *Tankeverk* are only suggested solutions and may not be applicable in all contexts.

Feedback by an academic expert got us worried about whether the design and the "look and feel" of the net-based resource would be accepted by the target group. The net-based resource does break from the boring teacher-oriented style by focusing on easy structure, warmth color, graphical figures, and design. However, the enthusiasm and support by the health personal and teachers convinced us that we were on the right track. The positive feedback from our target group is the most important because they are who we are making the net-based resource for.

We embarked on this long and unknown journey in the belief of helping teachers by creating a net-based resource according to their needs. To achieve our goal, we had to choose a very time-consuming but extremely rewarding approach: The Human-Centered Design Process. This ensures that the needs of our target group are heard and better covered throughout the design process. When the process is iterated several times, the chance of detecting errors is easier and can save time and large costs in the future. The positive feedbacks and optimism about the product are the most rewarding throughout the process. The fact that our target group is satisfied that we have listened and created a net-based resource according to their needs, affects their willingness to learn how to use the net-based resource and wants to recommend the product further. The response from our target group is a proof that the Human-Centered Design process was the best approach for us to achieve our goal.

7.2 Future Work

In this section, we will describe our intentions and the potentials we find essential regarding the further development of *Tankeverk*.

As elaborated in the introduction chapter in section 1.3, we had to limit ourselves regarding functionalities/implementations to the resource. One important improvement to the resource would be to identify universal design issues that discriminate against users with disabilities. There are web content accessibility guidelines (WCAG) that are made up of 4 principles, which are supported by 12 guidelines and 61 testable success criteria [72].

The entire list regarding future work, made prior to the development process, is listed below:

- Prioritize universal design and accessibility.
- Add all relevant topics involving mental health that affects middle schoolers.
- Expand the targeted group (parents, high school, university, kindergarten, primary school, etc.)
- Social media
- Implement more interactivity
- Implement a survey function (5.2.2)

After discussing and interacting with the target group and experts on the field, we were made aware of other important areas regarding the net-based resource that should be further developed and improved.

The teachers want even more concrete information than what was already given on *Tankeverk*. We wish we could go even deeper in detail, but also including more themes. Finding relevant information supported by experts while designing solutions at the same time, is time-consuming and cumbersome. Using completed and quality-assured material, combined with close collaboration and consultation with domain experts, can make it easier for developers to focus on creating solutions adapted to the target group. Accompanying factors will also be time-saving and positive attitudes within the target group, who expects information that originates from experts in the field. For this project, we did not have the opportunity to do so, but this is something we wish can be done in the future.

If *Tankeverk* is to continue, one must find a way to finance it and how it is to be managed further. Who is willing to invest in a low-threshold offer that should be free for all schools, is an important factor to consider. If it is to be further developed, the developers must look more at important solutions and functions in order to be able to meet all the requirements for universal design.

How to advertise so that the target group knows that the product exists is important. Maybe social media is the right platform to use to create awareness around the product? It is important to create good advertising strategy for the product so that more teachers become curious and want to use it.

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Appendix

A.1 Qualitative interview guide of mapping survey

Intervjuguide kvalitetssikre kartleggingsundersøkelsen – ungdomsskole, lærere og psykisk helse

Om prosjektet

Vi er to masterstudenter som ønsker å lage en nettressurs om psykisk helse for lærere som jobber med ungdomsskoleelever. Målet med prosjektet er å lage et verktøy som kan være til støtte ved avdekking av problemer hos ungdomsskoleelever.

Formål og fremgangsmåte

Hver skole har sine egne handlingsplaner for å håndtere lokale problemer blant sine elever. Vi ønsker å lage en nettressurs som kan brukes som et eksternt lavterskeltilbud for lærere og skolene. Vi ønsker å utføre respondentintervju for å kvalitetssikre informasjon om psykisk helse blant ungdomsskoleelever, og for å få innsyn om lærere er godt nok rustet til å håndtere ungdommer med psykiske plager. Alle data blir anonymisert og vi vil ikke bruke navn på informanter, hvis det blir aktuelt å bruke sitater i skriftlig henvisning.

Forberedelser

Vi har utarbeidet en kartleggingsundersøkelse, men før vi kan sende ut undersøkelsen ønsker vi å utføre en kvalitetssjekk ved å utføre respondentintervju med fem intervjudeltakere som har erfaringer og kunnskap rundt temaet psykisk helse og ungdomsskoleelever. Intervjudeltakerne kan forbedre kartleggingsundersøkelsen gjennom tilbakemelding på om undersøkelsen er relevant eller om vi skal justere den.

Rekruttering: Rekruttering av intervjudeltakerne har vært via bekjente eller direkte kontakt med ungdomsskoler og intervjuet skal foregå etter avtalt tid med intervjudeltakerne.

Intervjuspørsmål: første delen fokuseres på bakgrunn, mens den andre delen fokuseres på psykisk helse og bruk av ressurs.

Utstyrliste: Pc, penn og papir

Selve intervjuet

Informere og få bekreftelse på at det er greit at intervjuet blir tatt opp.

Bakgrunn:

1. Hvor lenge har du jobbet i ungdomsskolen?
2. Er du lærer utdannet eller har du PPU? og når ble du ferdig med lærerutdannelsen din?
3. Hva er din nåværende stilling på skolen du jobber for? (sosialrådgiver, kontaktlærer, faglærer osv.)

Problem:

4. I hvilken grad ble elevers psykiske helse prioritert i din utdanning?
5. Føler du at utdannelsen din har rustet deg til å håndtere det som kreves av deg når det gjelder elevenes psykiske helse?
6. Opplever du at det finnes elever som har psykiske utfordringer? (for eksempel om dere har lagt merke til at elevene er under stress, press eller kanskje andre problemer som ensomhet etc)

(f.eks.vis til ungdatabesøket f.eks Ungdata konferansen
<https://film.oslomet.no/1112-ungdatakonferansen-2020>)

<https://www.ungdata.no/stress-press-og-psykiske-plager-blant-unge/>

7. Hva tenker DU er de største utfordringene som elever ved ungdomsskolen sliter med i dag?
- 8.
9. Har du opplevd situasjoner der du hadde bruk for ekstra veiledning når eleven har vist tegn til psykiske utfordringer eller plager?
 - a. Visste du hvor du kunne få veiledning?
 - b. Har du googlet eller søkt på nett for å få veiledning?
 - c. Fikk du da veiledning?
 - d. Og/eller hva gjorde du?
10. Hvis det hadde eksistert et digitalt hjelpemiddel. Hva hadde kriteriene vært for at du skulle brukt det? (troverdighet, tilgjengelighet, validitet, reliabilitet osv.)
11. Er det noe dere ønsker å tilføye etter å ha sett undersøkelsen?
12. Var det noen av spørsmålene du reagerte på i undersøkelsen?
- Vise undersøkelsen etter spørsmål 12 er besvart.

A.2 NSD approval



NSD sin vurdering

Prosjekttittel

Tankeverk - Ressurs for lærere

Referansenummer

904526

Registrert

17.02.2021 av Bente Vatne Rønningsen - bentvr15@student.uia.no

Behandlingsansvarlig institusjon

Universitetet i Agder / Fakultet for teknologi og realfag / Institutt for informasjons- og kommunikasjonsteknologi

Prosjektansvarlig (vitenskapelig ansatt/veileder eller stipendiat)

Rune Andersen, rune.andersen@uia.no, tlf: 41628634

Type prosjekt

Studentprosjekt, masterstudium

Kontaktinformasjon, student

Bente Vatne Rønningsen, bente.varo@gmail.com, tlf: 93695810

Prosjektperiode

17.03.2021 - 30.06.2021

Status

23.02.2021 - Vurdert

Vurdering (1)

23.02.2021 - Vurdert

Det er vår vurdering at behandlingen av personopplysninger i prosjektet vil være i samsvar med personvernlovgivningen så fremt den gjennomføres i tråd med det som er dokumentert i meldeskjemaet med vedlegg den 23.02.2021, samt i meldingsdialogen mellom innmelder og NSD. Behandlingen kan starte.

MELD VESENTLIGE ENDRINGER

Dersom det skjer vesentlige endringer i behandlingen av personopplysninger, kan det være nødvendig å melde dette til NSD ved å oppdatere meldeskjemaet. Før du melder inn en endring, oppfordrer vi deg til å lese om hvilke type endringer det er nødvendig å melde:

<https://www.nsd.no/personverntjenester/fylle-ut-meldeskjema-for-personopplysninger/melde-endringer-i->

meldeskjema

Du må vente på svar fra NSD før endringen gjennomføres.

TYPE OPPLYSNINGER OG VARIGHET

Prosjektet vil behandle alminnelige kategorier av personopplysninger frem til 30.06.2021.

LOVLIG GRUNNLAG

Prosjektet vil innhente samtykke fra de registrerte til behandlingen av personopplysninger. Vår vurdering er at prosjektet legger opp til et samtykke i samsvar med kravene i art. 4 og 7, ved at det er en frivillig, spesifikk, informert og utvetydig bekreftelse som kan dokumenteres, og som den registrerte kan trekke tilbake.

Lovlig grunnlag for behandlingen vil dermed være den registrertes samtykke, jf. personvernforordningen art. 6 nr. 1 bokstav a.

PERSONVERNPRINSIPPER

NSD vurderer at den planlagte behandlingen av personopplysninger vil følge prinsippene i personvernforordningen om:

- lovlighet, rettferdighet og åpenhet (art. 5.1 a), ved at de registrerte får tilfredsstillende informasjon om og samtykker til behandlingen
- formålsbegrensning (art. 5.1 b), ved at personopplysninger samles inn for spesifikke, uttrykkelig angitte og berettigede formål, og ikke behandles til nye, uforenlige formål
- dataminimering (art. 5.1 c), ved at det kun behandles opplysninger som er adekvate, relevante og nødvendige for formålet med prosjektet
- lagringsbegrensning (art. 5.1 e), ved at personopplysningene ikke lagres lengre enn nødvendig for å oppfylle formålet

DE REGISTRERTES RETTIGHETER

Så lenge de registrerte kan identifiseres i datamaterialet vil de ha følgende rettigheter: åpenhet (art. 12), informasjon (art. 13), innsyn (art. 15), retting (art. 16), sletting (art. 17), begrensning (art. 18), og dataportabilitet (art. 20).

NSD vurderer at informasjonen om behandlingen som de registrerte vil motta oppfyller lovens krav til form og innhold, jf. art. 12.1 og art. 13.

Vi minner om at hvis en registrert tar kontakt om sine rettigheter, har behandlingsansvarlig institusjon plikt til å svare innen en måned.

FØLG DIN INSTITUSJONS RETNINGSLINJER

NSD legger til grunn at behandlingen oppfyller kravene i personvernforordningen om riktighet (art. 5.1 d), integritet og konfidensialitet (art. 5.1. f) og sikkerhet (art. 32).

Microsoft Teams er databehandler i prosjektet. NSD legger til grunn at behandlingen oppfyller kravene til bruk av databehandler, jf. art 28 og 29.

For å forsikre dere om at kravene oppfylles, må dere følge interne retningslinjer og/eller rådføre dere med behandlingsansvarlig institusjon.

OPPFØLGING AV PROSJEKTET

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

Lykke til med prosjektet!

Tlf. Personverntjenester: 55 58 21 17 (tast 1)

A.3 Consent form - in depth interview

Vil du delta i forskningsprosjektet «Tankeverk»?

Dette er et spørsmål til deg om du ønsker å delta i et forskningsprosjekt?

I dette skrivet gir vi deg informasjon om målene for prosjektet og hva deltakelsen vil innebære for deg.

Formål

Produktet/nettressursen som skal forskes på er en prototype, utviklet i forbindelse med et masterprosjekt ved Universitetet i Agder. Produktet som skal testes er en prototype til et verktøy/nettressurs som forhåpentligvis, etter hvert, skal fungere som et eksternt lavterskeltilbud for lærere og skoler. Brukertesting og intervjuene skal avdekke eventuelle fordeler/ulemper med tanke på funksjonalitet, brukervennlighet og kvaliteten på informasjonen som blir formidlet i produktet.

Hvem er ansvarlig for forskningsprosjektet?

Universitetet i Agder(UiA).

Hvorfor får du spørsmål om å delta?

Grunnen til at vi ønsker din deltakelse er på bakgrunn av din erfaring og yrke.

Hva innebærer det for deg å delta?

Dersom du velger å delta i forskningsprosjektet innebærer det at du må:

- Delta i et dybdeintervju (varighet på ca. 1 time).
- I forkant av intervjuet vil du få tilgang til nettressursen og du vil bli tilsendt en liste med oppgaver. Dette er for å teste blant annet funksjonalitet og brukervennlighet (varighet ca. 30-40 min).

Opplysningene som blir oppgitt av deg registreres ved notering underveis i intervjuet samt bruk av lyd-/videoopptak.

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.

Personer med tilgang til opplysningene vil være:

Wanwisa Prathan(student) og Bente Vatne Rønningsen(student).

Din deltakelse vil ikke kunne identifiseres i publikasjon. For å sikre at ingen uvedkommende får tilgang til personopplysningene vil vi erstatte kontaktopplysningene med en kode som lagres på egen navneliste adskilt fra øvrige data. Datamaterialet (opptakene) vil bli lagret på et passord beskyttet filsystem.

Hva skjer med opplysningene dine når vi avslutter forskningsprosjektet?

Opplysningene anonymiseres når prosjektet avsluttes/oppgaven er godkjent, noe som etter planen er 06.06.2021.

Opplysningsmaterialet vil bli destruert innen 30.06.2021.

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 muntlige samtykke.

På oppdrag fra Universitetet i Agder (UiA) 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:

Fra Universitetet i Agder (UiA):

Studenter:

Navn: Wanwisa Prathan

E-post: wanwisa.prathan@gmail.com

Navn: Bente Vatne Rønningsen

E-post: Bente.varo@gmail.com

Veiledere:

Navn: Karl-Heinz Frank Reichert

E-post: frank.reichert@uia.no

Navn: Rune Andersen

E-post: rune.andersen@uia.no

Vårt personvernombud:

Navn: Ina Danielsen

E-post: ina.danielsen@uia.no

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

Bente Vatne Rønningsen og Wanwisa Prathan
(Forskere/Studenter)

(Samtykke vil bli gitt muntlig, før intervjuets start)

Muntlig samtykkeerklæring (video-/lydopptak)

Jeg har mottatt og forstått informasjon om prosjektet [*Tankeverk*], og har fått anledning til å stille spørsmål. Jeg samtykker til:

Å delta i Intervju: JA/NEI

A.4 Mapping Survey

Kartlegging av behov for digitale hjelpemidler i møte med psykiske plager hos elever i ungdomsskolen.

Varighet: 5-10 minutter

Målet med denne undersøkelsen er å kartlegge behovet i en nettressurs der formålet skal være å veilede og informere lærere vedrørende psykiske problemer hos elever på ungdomsskolen.

Undersøkelsen er anonym og svarene dine forblir konfidensielle. Dataene vil kun brukes til relevant analyse i forhold til en masteroppgave ved Universitetet i Agder.

På forhånd - tusen takk!

***Må fylles ut**

1. Hvor lenge har du jobbet som lærer i ungdomsskolen? *Markér bare én oval.*

1-3 år

3-5 år

5-10

10-15 år

mer enn 15 år

2. Velg 5 utfordringer du opplever som mest utbredt blant ungdomsskoleelever i dag? *

Merk av for alt som passer

- Stress og press
- Mobbing
- Spiseforstyrrelser og kroppspress
- Sosiale medier
- Depresjon/angst
- Selvmordstanker
- Vanskelige familierelasjoner
- Alkohol og stoffmissbruk
- Ensomhet
- Skolevegring/motivasjon
- Seksualitet
- Ubehagelig språkbruk

Andre:

3. Om du ser en elev som sliter, hva gjør du?(Du kan krysse av flere alternativer) *

Merk av for alt som passer

- Tar en prat med eleven med en gang.
- Observerer atferden over en periode, før jeg prater med eleven.
- Rådfører meg med andre kollegaer eller leder
- Ber helsesykepleier eller sosialrådgiver om å ta kontakt med eleven
- Kontakter foreldrene til eleven
- Søker om hjelp og råd på nett
- Ingenting, jeg er redd for å gjøre feil
- Vet ikke
- Bygge tillit hos eleven

Andre:

4. Har du opplevd situasjoner der du hadde bruk for ekstra veiledning når eleven har vist tegn til psykiske utfordringer eller plager? *

Markér bare én oval.

Ja

Nei

5. Visste du hvor du kunne få råd og veiledning? *

Markér bare én oval.

Ja

Nei

6. Har du googlet eller søkt på nett for å få råd og veiledning? *

Markér bare én oval.

Ja

Nei

7. Dersom det hadde eksistert et digitalt hjelpemiddel ville du brukt det?
(Utarbeidet i samarbeid med profesjonelle) *

Markér bare én oval.

Ja

Nei

Kanskje

8. Hva ønsker du av et digitalt hjelpemiddel? (Du kan krysse av flere alternativer) *

Merk av for alt som passer

Fremstillinger av ulike scenarier gjennom illustrasjoner

Fremstillinger av ulike scenarier gjennom animasjonsfilmer

Informasjon om ulike psykiske plager som oppstår blant ungdommer

Råd til hva man selv kan gjøre før man eventuelt må kontakte ekstern helsehjelp

Jeg ønsker å bli videreført til andre tjenester, nettsider og kontaktteltelefoner

Jeg mener at det ikke er behov for et slikt hjelpemiddel

Ikke lisensbasert

Gratis for alle

Må ikke opprette bruker

Lett å navigere

Oversiktlig

Lett å bruke

Utarbeidet og kvalitetsikret i samarbeid med profesjonelle

Andre:

9. Hvor burde man få tilgang til det digitale hjelpemiddelet?
(Du kan Krysse av flere alternativer) *

Merk av for alt som passer

På skolens nettside

Tilgjengelig på skolens læringsplattform (ItsLearning, Fronter, Canvas osv.)

Kommer opp når man søker på nett

Annet

10.

Har du noen forslag til hva et digitalt hjelpemiddel burde inneholde?
(Noe som ikke er nevnt tidligere i undersøkelsen)

A.5 Pre-test

Pre-test av Tankeverk.no

Hei!

Vi er to studenter fra Universitetet i Agder som for tiden tar en mastergrad i multimedia- og læringsteknologi.

I forbindelse med vårt masterprosjekt ønsker vi å komme i kontakt med et lite utvalg deltagere som kunne tenke seg å for-teste funksjonalitet av produktet vårt for å se om endringer må gjøres før selveste brukertesting.

Prosjektets formål:

Vi ønsker å lage en nettressurs om psykisk helse for lærere som jobber med ungdomsskoleelever. Målet med prosjektet er å lage et verktøy/nettressurs som kan være til støtte når lærere trenger informasjon, og når de opplever at ungdomsskoleelever viser tegn til psykiske utfordringer.

Dette gjør du:

1. Gå inn på [tankeverk.no](https://www.tankeverk.no)
2. Naviger deg rundt for å bli kjent med [tankeverk.no](https://www.tankeverk.no)
3. Gå gjennom hvert tema
4. Se gjennom en eller flere animasjoner inne på [tankeverk.no](https://www.tankeverk.no) (animasjoner finner du på forsiden under læringsmiljø og tema angst)
5. Deretter, fullfør google undersøkelsen

Link:

<https://www.tankeverk.no/>

1. Tror du at produktets design samsvarer med formålet?
(1= ikke enig og 5= veldig enig)

Markér bare én oval.

1 2 3 4 5

2. Utdyp i kommentar hvis du ikke er enig med designet. Hva kunne blitt gjort annerledes?

3. Tror du målgruppen føler at dette produktet er designet for dem?
(1= ikke enig og 5= veldig enig)

Markér bare én oval.

1 2 3 4 5

4. Utdyp i kommentar dersom du mener vi ikke treffer målgruppen. Hva kunne blitt gjort annerledes?

5. Opplevde du at det var lett å navigere rundt på nettsiden?
(1= ikke enig og 5= veldig enig)

Markér bare én oval.

1 2 3 4 5

6. Utdyp i kommentar om du ikke er enig. Hva kunne blitt gjort annerledes?

7. Oppstod det noen problemer (errors) da du navigerte deg rundt på nettsiden?
Markér bare én oval.

Ja

Nei

Annet

Andre:

8. Utdyp i kommentar om du kryssa av annet. Hva kunne blitt gjort annerledes?

9. Var informasjonen du fikk på nettsiden presentert på en troverdig måte?
(1= ikke enig og 5= veldig enig)

Markér bare én oval.

1 2 3 4 5

10. Kommentarer eller forslag til endringer om informasjonen på nettsiden?

11. Ditt helhetsinntrykk av Tankeverk.no?

A.6 Personas

Hilde Larsen (35) works as a contact teacher for 8B at Lind middle school. She has worked there ever since she was offered an internship 13 years ago. In addition to being a contact teacher, she is a subject teacher in math and science. A lot of her spare time is spent driving her two daughters to football practice and matches. She enjoys her job as a teacher, but she feels that she has lost some of the spark she had the recent years. The feeling of being inadequate nibbles away at her motivation. She simply do not have the extra time to follow up both socially and academically, as she much as she wishes, on all her students.

Jon Sivertsen (28) lives in an apartment together with his dog. Jon has worked as a middle school teacher for almost 4 years. The subjects he teaches are gym and social studies for the entire 9th grade. He often finds it difficult to know how to handle situations where he experiences that some students may be extra vulnerable. He do not always know what to say or do to help, but is eager to be there as a support if they want it. As a student he learned theory concerning students' mental health, but he feels it can not be compared with how it actually is in practice.

Karin Olsen (58) has worked as a teacher for nearly 40 years. She looks forward to her retirement but expresses a certain ambivalence. As a teacher she has experienced countless young students where everyone has different starting points and problems. She still thinks of the students she did not know how to help. She dismissed several students due to "bad" behavior, but has since then realized that this "bad" behavior may have been triggered by underlying mental challenges.

A.7 Interview Guide Experts

Muntlig samtykkeerklæring (video-/lydopptak)

Jeg har mottatt og forstått informasjon om prosjektet [*Tankeverk*], og har fått anledning til å stille spørsmål. Jeg samtykker til:

Å delta i Intervju: JA/NEI

Intervjuguide (eksperter)

Fase 1: Snakke med intervjudeltagerne

Hilse og få deltagerne til å føle seg velkommen og avslappet.

Fase 2: Informere

Vi er to masterstudenter som ønsker å lage en nettressurs om psykisk helse for lærere som jobber med ungdomsskoleelever. Vi har laget en prototype til et verktøy/nettressurs som forhåpentligvis etter hvert skal fungere som et eksternt lavterskeltilbud for lærere og skoler. Målet er at den skal være til støtte når lærere trenger informasjon, spesielt når de opplever at ungdomsskoleelever viser tegn til psykiske utfordringer.

Formål og fremgangsmåte

Du(deltager) er spurt om å delta i brukertesting for å primært kvalitetssikre at innholdet i nettressursen er troverdig og holder mål. Men, vi er også interessert i dine kommentarer ang. brukervennlighet og funksjonalitet.

Som Intervjudeltager har du fått tilgang til produktet(www.tankeverk.no) og oppgaver utdelt noen dager før intervjuet for å orientere deg og bli kjent med nettressursen.

Vi vil også informere om at alle data blir anonymisert og vi vil ikke bruke navn på informanter, dersom det blir aktuelt å bruke sitater i skriftlig henvisning.

Fase 3: Intervju og undersøkelse

Pre intervju:

1. Hvilken utdanning har du?
-Når tok du den?
2. Hvor lenge har du jobbet som *yrke*?
3. Var psykisk helse en del av pensumet under din utdanning?
-Har du opplevd at elever har slitt med psykisk helse?

- Har du opplevd adferds forandringer?
 - Hendelser der elevene viser sterke fysiske og psykiske reaksjoner
 - Svette, skjelving, gråting eller sinne?
4. Har du kjennskap til eksterne ressurser der lærere har tilgang til lignende/annerledes informasjon relatert til psykisk helse?
- Om ja, hvilke ressurser?
 - Hva skiller den ressursen fra tankeverk?
5. På en skala fra 1 til 5 (1 = ikke trygg i det hele tatt, 5 = veldig trygg), hvor trygg er du på å bruke mobiltelefonen/datamaskinen til hjelpressurser (alla tankeverk..)?

Post intervju:

1. Ditt helhetsinntrykk av Tankeverk.no?
 - Hva er dine første tanker når du ser forsiden til Tankeverk?
 - Hvordan opplevde du, som *Yrke*(lærer, helsesykepleier, spes.pedagog etc.) å bruke Tankeverk?
 - Hvordan var språket?
 - Opplever du tankeverk som troverdig?
hvorfor/hvorfor ikke?
 - Hva var positivt?
 - Hva var negativt?
2. Hvor relevant var informasjonen du fikk om temaene?
 - Besvarte informasjonen alle spørsmålene dine knyttet til temaet?
 - om nei, hva manglet du?
3. Tror du en ressurs som tankerverk kunne bidra med å lette jobbhverdagen deres? (med tanke på at lærere kanskje blir litt mer selvstendig i ulike situasjoner med elever)
4. Hvilken av presentasjonsmetodene; Animasjon, illustrasjon og tekst mener du får frem budskapet på best måte?
 - Var det en presentasjonsmetode du foretrakk mer enn andre?
 - Om ja, hvilken?
5. Tenker du at tankeverk kan dekke et behov for lærere?
 - På hvilken måte?
 - Er veiledningen tilstrekkelig?
 - Hvorfor/hvorfor ikke?

6. Tror du målgruppen vil tenke at dette produktet er designet for dem?
- Hvorfor/hvorfor ikke?
7. På en skala fra 1-5 hvor stor er sannsynligheten for at du ville anbefalt dette produktet til en lærer?
8. Har du noen kommentarer eller tilbakemeldinger til oss?
9. Hvordan kunne vi forbedret din opplevelse av nettressursen?
- Er det noe vi kunne gjort annerledes?

Fase 4: Oppsummere funn

Oppsummere alt brukeren har svart på

- Har jeg forstått det riktig?
- Er det noe du ønsker å legge til?

Back-up spørsmål til ikke interesserte deltagere:

1. Hva er din bakgrunn? (Alder, yrke, utdanning)
2. Hvor lenge har du jobbet?
3. Har du opplevd at det finnes elever som sliter med psykisk helse?
4. Når du testet nettressursen, hva likte du? Hva likte du ikke?
5. Kan noe forbedres?
6. Ville du anbefalt nettressursen til andre?
7. Var du fornøyd med måten innholdet ble presentert på? Hvorfor/hvorfor ikke?
8. Har du noen andre kommentarer? Om ja, hva?
- Takk for at du tok deg tid til å intervjues 😊

A.8 Interview Guide Teachers

Muntlig samtykkeerklæring (video-/lydopptak)

Jeg har mottatt og forstått informasjon om prosjektet [*Tankeverk*], og har fått anledning til å stille spørsmål. Jeg samtykker til:

Å delta i Intervju: JA/NEI

Intervjuguide (lærere)

Fase 1: Snakke med intervjudeltagerne

Hilse og få deltagerne til å føle seg velkommen og avslappet.

Fase 2: Informere

Vi er to masterstudenter som ønsker å lage en nettressurs om psykisk helse for lærere som jobber med ungdomsskoleelever. Vi har laget en prototype til et verktøy/nettressurs som forhåpentligvis etter hvert skal fungere som et eksternt lavterskeltilbud for lærere og skoler. Målet er at den skal være til støtte når lærere trenger informasjon, spesielt når de opplever at ungdomsskoleelever viser tegn til psykiske utfordringer.

Formål og fremgangsmåte

Du(deltager) er spurt om å delta i brukertesting primært for å kvalitetssikre nettressursens troverdighet, brukervennlighet og funksjonalitet, og for å få tilbakemeldinger om hvilke presentasjonsmetoder du og andre lærere kan foretrekke.

Som Intervjudeltager har du fått tilgang til produktet(www.tankeverk.no) og oppgaver utdelt noen dager før intervjuet for å orientere deg og bli kjent med nettressursen.

Vi vil også informere om at alle data blir anonymisert og vi vil ikke bruke navn på informanter, dersom det blir aktuelt å bruke sitater i skriftlig henvisning.

Fase 3: Intervju og undersøkelse

Pre intervju:

1. Hvor lenge har du jobbet i skoleverket?
2. Hvor gammel er du?
3. Hvilken utdanning har du?
-Når tok du den?

4. Hvor i landet jobber du?
 - Er det en stor eller liten skole?

5. Ble psykisk helse tatt opp som tema under din utdanning?
 - Har du opplevd at noen av elevene dine har slitt med psykisk helse?
 - Har du opplevd adferds forandringer?
 - Hendelser der elevene viser sterke fysiske og psykiske reaksjoner
 - Svette, skjelving, gråting eller sinn?

6. Har du kjennskap til eller brukt eksterne ressurser der lærere har tilgang til lignende/annerledes informasjon relatert til psykisk helse?
 - Om ja, hvilken ressurs?
 - Hva skiller den ressursen fra tankeverk?

7. På en skala fra 1 til 5 (1 = ikke trygg i det hele tatt, 5 = veldig trygg), hvordan vil du rangere ditt tillitsnivå for å bruke mobiltelefonen/datamaskinen din til [en eller flere teknologiske redningsaktiviteter]?

Post intervju:

1. Ditt helhetsinntrykk av Tankeverk.no?
 - Hva er dine første tanker når du ser forsiden til Tankeverk?
 - Hvordan opplevde du, som *Yrke*(lærer, helsesykepleier, spes.pedagog etc.) å bruke Tankeverk?
 - Hvordan var språket?
 - Opplever du tankeverk som troverdig?
hvorfor/hvorfor ikke?
 - Hva var positivt?
 - Hva var negativt?

2. Var det lett å navigere seg rundt på Tankeverk.no?
 - Var det noe som kunne gjort navigeringen enklere?
 - Om nei, hvorfor/hvorfor ikke?

3. Hvilket tema appellerte mest til deg og hvorfor?
 - Var det noe temaer du likte mer enn andre?
 - Kan det ha noe med måten temaet er presentert på?

4. Hvor relevant var informasjonen du fikk om temaene?
 - Besvarte informasjonen alle spørsmålene dine knyttet til temaet?
 - om nei, hva manglet du?

5. Likte du designet på Tankeverk.no?
 - Er bruk av fargene på nettsiden behagelig å se på?
 - Om ja, hva likte du?
 - Om nei, hva likte du ikke?

6. Hvilken av presentasjonsmetodene; Animasjon, illustrasjon og tekst, likte du best?
 - Var det en presentasjonsmetode du foretrakk mer enn andre?
 - Om ja, hvilken?
 - Hvis du skulle valgt ville du valgt kombinasjon av illustrasjon, animasjon og tekst eller bare tekst, bare animasjon eller bare illustrasjon.
 - Tema angst i kategori animasjon er case 1 og case 2 lagd med ulike karakterer, hvilken karakterstil foretrekker du?

7. Tenker du at tankeverk kan dekke et behov for deg/andre lærere?
 - På hvilken måte?
 - Er veiledningen tilstrekkelig?
 - Hvorfor/hvorfor ikke?

8. Tror du målgruppen vil tenke at dette produktet er designet for dem?
 - Hvorfor/hvorfor ikke?

9. Kunne du tenke deg å bruke nettressursen i fremtiden?
 - Hvorfor/hvorfor ikke?

10. Hvor ofte ville du brukt produktet selv? (aldri - sjeldent - av og til - ofte - Veldig ofte)

11. På en skala fra 1-5 hvor stor er sannsynligheten for at du ville anbefalt dette produktet til en annen kollega?

12. Har du noen kommentarer eller tilbakemeldinger til oss?

13. Hvordan kunne vi forbedret din opplevelse av nettressursen?
 - Er det noe vi kunne gjort annerledes?

Fase 4: Oppsummere funn

Oppsummere alt brukeren har svart på

- Har jeg forstått det riktig?
- Er det noe du ønsker å legge til?

Back-up spørsmål til ikke interesserte deltagere:

1. Hva er din bakgrunn? (Alder, yrke, utdanning)
 2. Hvor lenge har du jobbet?
 3. Har du opplevd at det finnes elever som sliter med psykisk helse?
 4. Når du testet nettressursen, hva likte du? Hva likte du ikke?
 5. Kan noe forbedres?
 6. Ville du anbefalt nettressursen til andre?
 7. Var du fornøyd med måten innholdet ble presentert på? Hvorfor/hvorfor ikke?
 8. Har du noen andre kommentarer? Om ja, hva?
- Takk for at du tok deg tid til å intervjues 😊

A.9 User Task

Informasjon

Tusen takk for at du ønsker å delta i brukertesting av vår nettressurs. Vi setter stor pris på at du setter av tid i en hektisk hverdag for å hjelpe oss å komme i mål med vår masteroppgave.

Vi er to masterstudenter som ønsker å lage en nettressurs om psykisk helse for lærere som jobber med ungdomsskoleelever. Vi har laget en prototype til et verktøy/nettressurs som forhåpentligvis, etter hvert, skal fungere som et eksternt lavterskeltilbud for lærere og skoler. Målet er at den skal være til støtte når lærere trenger informasjon, spesielt når de opplever at ungdomsskoleelever viser tegn til psykiske utfordringer.

Formål og fremgangsmåte

Brukertesting og intervjuene er ment for å avdekke eventuelle fordeler/ulempes med tanke på funksjonalitet, brukervennlighet og kvaliteten på informasjonen som blir formidlet i produktet.

Med tanke på dagens smittesituasjon (COVID-19) forstår vi at det er vanskelig å foreta brukertesting og intervjuer som krever fysisk oppmøte. Brukertesting vil derfor bli gjort noe annerledes. Alle deltagere som har sagt ja til å delta, vil få tilgang til nettressursen og et oppgaveark noen dager før avtalt intervjudato. Det blir gjort på denne måten slik at deltagerne skal ha mulighet til å orientere og bli kjent med nettressursen i trygge og mindre stressende omgivelser i god tid før selveste intervjuet. Oppgavene deltagerne skal utføre vil være relatert til testing av produktet og tar ca. 30-40min.

Du må gjerne notere underveis hva du tenker om produktet. Alle kommentarer og tilbakemeldinger tar vi gjerne imot når vi møtes online til intervju.

All data blir anonymisert og vi vil ikke bruke navn på informanter, dersom det blir aktuelt å bruke sitater i skriftlig henvisning. Opplysningene som blir oppgitt av deg registreres ved notering underveis i intervjuet samt bruk av lyd-/videoopptak.

Dette gjør du:

1. Gå inn på www.tankeverk.no

2. Utfør disse oppgavene:

1. Finn informasjon om læringsmiljø.
2. Se animasjonsfilmen om læringsmiljø.
3. Finn alle temaene.

4. Naviger inn på stress og press.
-Les og klikk deg gjennom illustrasjonene.

5. Naviger inn på angst.
Naviger inn på **kategori "se animasjonsfilmer"**:
Del 1:
 1. Velg case 1.
 2. Se animasjonen.
Del 2:
 1. Velg case 2.
 2. se animasjon
Naviger inn på kategori "se illustrasjoner":
 1. Velg case 1.
 2. Les og klikk deg gjennom illustrasjonene.
Naviger inn på kategori "les informasjon":
- Les informasjon om angst.

6. Naviger deg tilbake til forsiden.

7. Finn informasjon om motivasjon.
- Les informasjonen.

8. Finn informasjon om skolevegring.
- Les informasjonen.

9. Gå inn og les "om oss".

A.10 Email of Concernt - Fagbokforlaget

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Bente Rønningsen

4 January 2021 at 14:56

Trenger tillatelse fra forlag ifm. masteroppgave ved UiA

To: post@fagbokforlaget.no

Hei,

Jeg og en medstudent fra Universitetet i Agder arbeider for tiden med masteren vår i multimedia- og læringsteknologi. I løpet av jan/feb skal vi være ferdig med å utarbeide en pilot til en nettressurs angående elevers psykiske helse, spesielt rettet mot lærere i ungdomsskolen. Målet med nettressursen er at den skal kunne brukes av lærere dersom de ønsker råd og veiledning til hva de kan gjøre dersom de har elever som sliter med diverse psykiske utfordringer. Vi ønsker å veilede gjennom bruk av animasjoner og illustrasjoner som er basert på ulike scenarier som blir beskrevet veldig bra i i boken "Stress og mestring i skolen" som er gitt ut med deres forlag.

Grunnen til at vi kontakter dere er fordi vi ønsker at produktet vårt skal være utarbeidet i samråd med eksperter for å kvalitetssikre innholdet. Vi sendte derfor en mail til forfatter Edvin Bru og fikk til svar:

"Dere har anledning til å utarbeide animasjoner utifra scenarioer og råd som står beskrevet i disse bøkene. For meg er det greit at dere også bruker sitater. Hvis mulig bør referanse komme fram. Hvis dere bruker hele casebeskrivelser er det tryggest å kontakte forlagene."

Vi lurer derfor på om vi kan få tillatelse til å sitere og utarbeide animasjoner utifra casebeskrivelsene og rådene som står beskrevet i boken "Stress og mestring i skolen"?

Vennlig Hilsen,
Bente Vatne Rønningsen



Hallvard Aamlid

6 January 2021 at 11:29

SV: Trenger tillatelse fra forlag ifm. masteroppgave ved UiA

To: Bente Rønningsen

Hei, Bente

Takk for forespørselen. Jeg kan ikke forstå noe annet enn at dette må være greit så lenge det er tydelig hvor dette er hentet fra. Lykke til.

Vennlig hilsen
Hallvard Aamlid

Hallvard Aamlid
forlagsredaktør pedagogikk og lærerutdanning
+47 413 00 042
Fagbokforlaget
St. Olavs gate 12 0165 Oslo
<https://magasin.fagbokforlaget.no/>

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A.11 Email of Conccent - Universitetsforlaget

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Bente Rønningsen

4 January 2021 at 14:52

Trenger tillatelse fra forlag ifm. masteroppgave ved UiA

To: post@universitetsforlaget.no

Hei,

Jeg og en medstudent fra Universitetet i Agder arbeider for tiden med masteren vår i multimedia- og læringsteknologi. I løpet av jan/feb skal vi være ferdig med å utarbeide en pilot til en nettressurs angående elevers psykiske helse, spesielt rettet mot lærere i ungdomsskolen. Målet med nettressursen er at den skal kunne brukes av lærere dersom de ønsker råd å veiledning til hva de kan gjøre dersom de har elever som sliter med diverse psykiske utfordringer. Vi ønsker å veilede gjennom bruk av animasjoner og illustrasjoner som er basert på ulike scenarier som blir beskrevet veldig bra i i boken "Psykisk helse i skolen (2020)" som er gitt ut med deres forlag.

Grunnen til at vi kontakter dere er fordi vi ønsker at produktet vårt skal være utarbeidet i samråd med eksperter for å kvalitetssikre innholdet. Vi sendte derfor en mail til forfatter Edvin Bru og fikk til svar:

"Dere har anledning til å utarbeide animasjoner utifra scenarioer og råd som står beskrevet i disse bøkene. For meg er det greit at dere også bruker sitater. Hvis mulig bør referanse komme fram. Hvis dere bruker hele casebeskrivelser er det tryggest å kontakte forlagene."

Vi lurte derfor på om vi kan få tillatelse til å sitere og utarbeide animasjoner utifra casebeskrivelsene og rådene som står beskrevet i boken "psykisk helse i skolen"?

Vennlig Hilsen,
Bente Vatne Rønningsen



post@universitetsforlaget.no

4 January 2021 at 15:02

(Saks-id:315229) Trenger tillatelse fra forlag ifm. masteroppgave ved UiA

To: Bente Rønningsen

Hei Bente,

Ja det er greit for oss at dere bruker disse. Vennligst oppgi referanser etter vanlig skikk.

Lykke til!

Vennlig hilsen

Cecilie Ulstein-Brokner

Kontrakts- og administrasjonsansvarlig

T: +47 924 35004

.....
Universitetsforlaget AS

Sehesteds gate 3, PB 508 Sentrum, 0105 Oslo

A.12 Email of Consent - Edvin Bru (Author)

Found in Sent - Google Mailbox



Bente Rønningsen

4 January 2021 at 12:40

Trenger tillatelse fra forfatter ifm. masteroppgave ved UiA

To: Lars Edvin Bru

Hei,

Jeg og en medstudent fra Universitetet i Agder arbeider for tiden med masteren vår i multimedia- og læringsteknologi. I løpet av jan/feb skal vi være ferdig med å utarbeide en pilot til en nettressurs angående elevers psykiske helse, spesielt rettet mot lærere i ungdomsskolen.

Grunnen til at vi kontakter deg er fordi vi ønsker at produktet vårt skal være utarbeidet i samråd med eksperter for å kvalitetssikre innholdet. Vi har allerede vært i kontakt med professor i spesialpedagogikk, Ingrid Lund og utifra arbeidet ditt er det tydelig at du også har stor kompetanse innen dette feltet.

Målet med nettressursen er at den skal kunne brukes av lærere dersom de ønsker råd å veiledning til hva de kan gjøre dersom de har elever som sliter med diverse psykiske utfordringer. Vi ønsker å veilede gjennom bruk av animasjoner og illustrasjoner som er basert på ulike scenarier som du/dere beskriver veldig bra i:

- Psykisk helse i skolen (2020)
- Stress og mestring i skolen (2019)

Vi lurer på om vi kan få tillatelse til å sitere og utarbeide animasjoner utifra scenarier og råd som står beskrevet i disse bøkene?

Vennlig Hilsen,
Bente Vatne Rønningsen



Lars Edvin Bru

4 January 2021 at 13:57

SV: Trenger tillatelse fra forfatter ifm. masteroppgave ved UiA

To: Bente Rønningsen

Hei!

Spennende prosjekt dere er i gang med.

Dere har anledning til utarbeide animasjoner ut ifra scenarier og råd som står beskrevet i disse bøkene. For meg er det greit at dere også bruker sitater. Hvis mulig bør referanse komme fram. Hvis dere bruker hele casebeskrivelser er det tryggest å kontakte forlagene.

Vennlig hilsen!
Edvin Bru

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A.13 Ethical Issues QR

Table 3.2 Ethical Issues in Qualitative Research

<i>Where in the Process of Research the Ethical Issue Occurs</i>	<i>Type of Ethical Issue</i>	<i>How to Address the Issue</i>
Prior to conducting the study	<ul style="list-style-type: none"> • Seek college/university approval on campus • Examine professional association standards • Gain local permission from site and participants • Select a site without a vested interest in outcome of study • Negotiate authorship for publication 	<ul style="list-style-type: none"> • Submit for institutional review board approval • Consult types of ethical standards that are needed in professional areas • Identify and go through local approvals; find gatekeeper to help • Select site that will not raise power issues with researchers • Give credit for work done on project; decide on author order
Beginning to conduct the study	<ul style="list-style-type: none"> • Disclose purpose of the study • Do not pressure participants into signing consent forms • Respect norms and charters of indigenous societies • Be sensitive to needs of vulnerable populations (e.g., children) 	<ul style="list-style-type: none"> • Contact participants and inform them of general purpose of study • Tell participants that they do not have to sign form • Find out about cultural, religious, gender, and other differences that need to be respected • Obtain appropriate consent (e.g., parents, as well as children)
Collecting data	<ul style="list-style-type: none"> • Respect the site and disrupt as little as possible • Avoid deceiving participants • Respect potential power imbalances and exploitation of participants (e.g., interviewing, observing) • Do not “use” participants by gathering data and leaving site without giving back 	<ul style="list-style-type: none"> • Build trust, convey extent of anticipated disruption in gaining access • Discuss purpose of the study and how data will be used • Avoid leading questions; withhold sharing personal impressions; avoid disclosing sensitive information • Provide rewards for participating
Analyzing data	<ul style="list-style-type: none"> • Avoid siding with participants (going native) • Avoid disclosing only positive results • Respect the privacy of participants 	<ul style="list-style-type: none"> • Report multiple perspectives; report contrary findings • Assign fictitious names or aliases; develop composite profiles
Reporting data	<ul style="list-style-type: none"> • Falsifying authorship, evidence, data, findings, conclusions • Do not plagiarize • Avoid disclosing information that would harm participants • Communicate in clear, straightforward, appropriate language 	<ul style="list-style-type: none"> • Report honestly • See APA (2010) guidelines for permissions needed to reprint or adapt work of others • Use composite stories so that individuals cannot be identified • Use language appropriate for audiences of the research
Publishing study	<ul style="list-style-type: none"> • Share data with others • Do not duplicate or piecemeal publications • Complete proof of compliance with ethical issues and lack of conflict of interest, if requested 	<ul style="list-style-type: none"> • Provide copies of report to participants and stakeholders; share practical results; consider website distribution; consider publishing in different languages • Refrain from using the same material for more than one publication • Disclose funders for research; disclose who will profit from the research