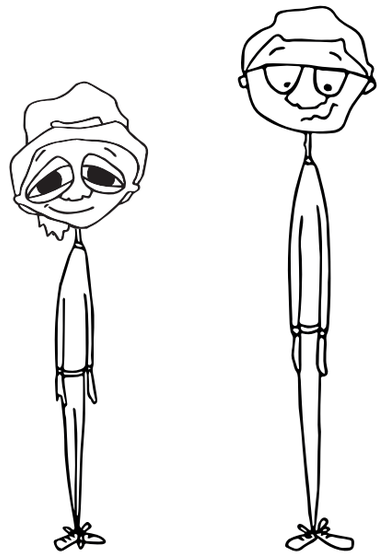
Sofie A. Thomassen | J. Alberto Soriano

Wandering mind

Helping teenagers manage stress and anxiety through interactive mindfulness-meditation.

A Service & Interaction design diploma
Oslo School of Architecture and Design

2017



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A Service & Interaction design diploma
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Fall 2017

Supervisors.
Mosse Sjaastad
Jonathan Romm

Collaboration.
Charlotte Lunde, MD working on the field
of child and adolescents mental health

Abstract.

Common mental disorders such as anxiety affect one out of three of us at some point in our lives. According to the World Health Organization (WHO), plenty of knowledge exists on the topic but the biggest challenge is how to implement it. How can design contribute to applying this knowledge and making something so common more manageable?

Wandering Mind is a design diploma that explores mindfulness-meditation as an instrument for managing mental disorders such as stress and anxiety in adolescents. In this report, we will guide you through the -what, why and how- of our design process and proposal.

The goal of this diploma is to contribute to applying existing experts' knowledge and to inspire relevant service providers by designing a service that enhances therapeutic treatment. We also wanted to inspire fellow design students to work with a more cross-disciplinary and explorative approach. Finally, we wanted to motivate those in our communities to look after their own mental wellbeing, reconnect with their own body and to seek help if thoughts and emotions are too overwhelming.

When our mind wanders off, mindfulness-meditation helps us refocus by paying deliberate, non judgemental attention in the present moment. We want you to think about this when reading the report but most importantly, we want you to be kind to your own wandering mind.

Content

/ **Research**
▽ **Explore**
◇ **Communicate**

Foldable

Personal motivation

We wanted our diploma to show who we are as designers by taking on a complex and valuable project that was also meaningful on a personal level. Our personal goal was also to make this diploma project a fun and joyful experience.

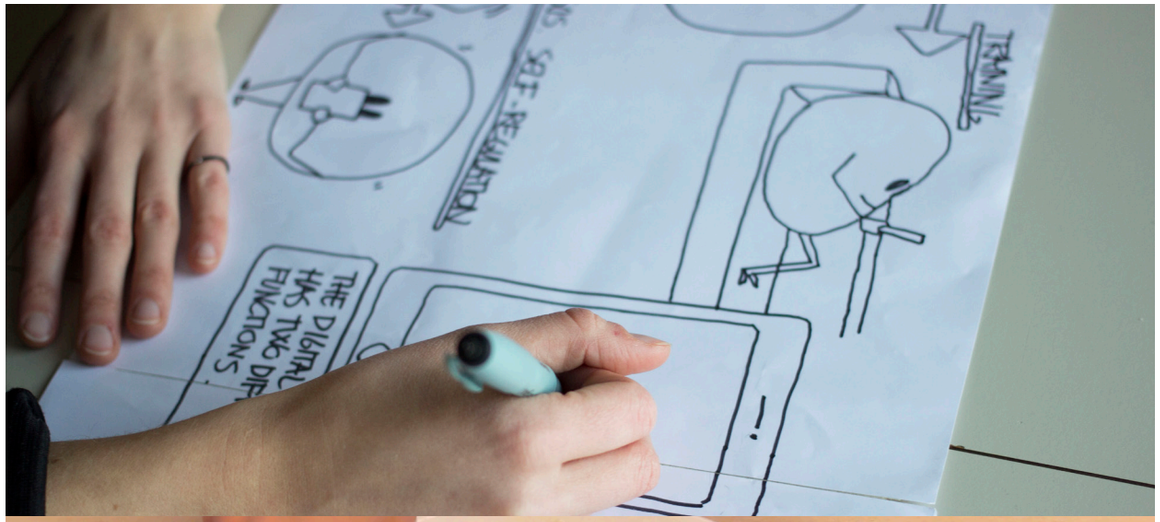
Choice of topic

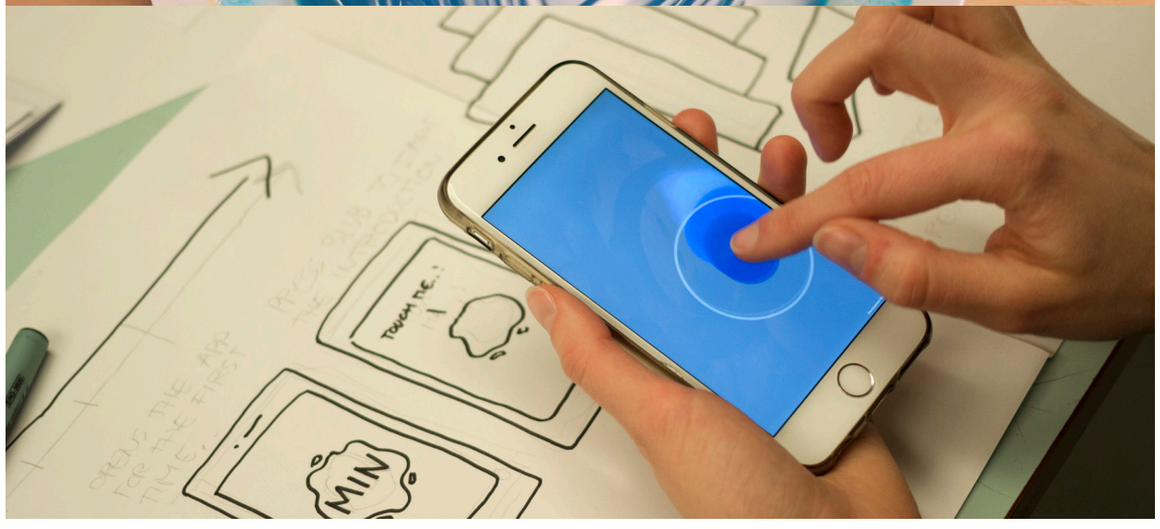
We wanted to work with mental health because while it is strongly connected with physical and health overall, we feel that it is a stigmatized, intangible topic that can be difficult to understand.

We believe that with a design approach, we could use qualitative methods to dig deeper into users' behaviors and experiences and contribute to normalizing a topic that is buried in a lot of statistics and complex language.

Our position as designers

Both of us have previous experience with school healthcare projects in service-, product- and interaction design, and through that we have seen the value and the positive impact that design thinking can bring to health care systems. Therefore, we believe that by combining service- and interaction design, we can dig deep into the details of how people interact with digital platforms, and simultaneously take a holistic approach to the context that surrounds these interfaces.



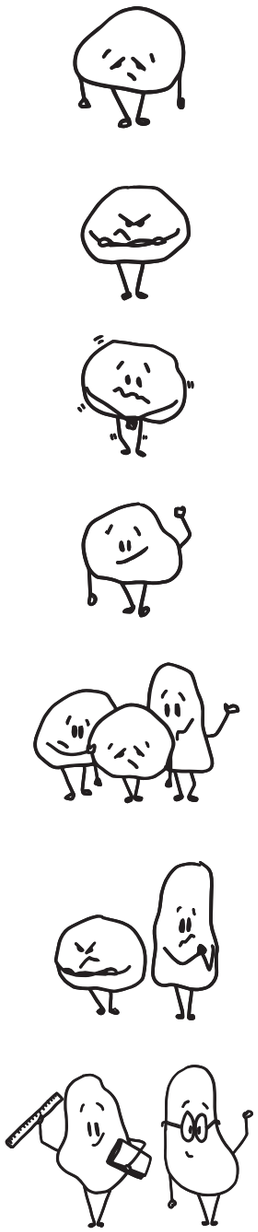


Project visual expression

Nowadays, mental health is still a stigmatized topic. As such, we wanted to create a project visual that didn't show any personal information or reflect any characteristics of our target group or collaborators. We wanted the visual to be gender neutral, and non-human in order to make it more broadly relatable.
After exploring different ideas, we decided to move away from shapes that were boxy or rigid, and move forward with shapes that were more organic or fluid. We imagined the shapes to be a visualization of the ball of emotions that teenagers can be.

We designed a visual expression for "Wandering Mind", to help communicate our project to our interviewees, partners and the AHO community, but also for our collaborative partner to use to continue to communicate the project after we are done.

Photos, visualizations, and everything else by ourselves(Sofie & Alberto) unless otherwise noted.




MINDFULNESS VS. MEDITATION
How might we motivate and engage teenagers in treatment of stress, anxiety and mild depression, to learn emotional self-regulation techniques through a digital interface, so that they can cope better with their thoughts and feelings?
SELF REGULATION:
"The self-awareness to monitor one's state and the capability to influence it."
What's Actually the Difference Mindfulness and Meditation?
PRAGUE SCHOOL OF DESIGN
Rising From A Night's Sleep
START
LA CRÈME DE LA CRÈME

08

09

1

Frame

The scoping phase

In this first chapter we will outline why this project is relevant in today's context, provide an explanation of the chosen target group and conclude with our initial brief and methodologies applied throughout the project.

Context & Relevance

Mental Health

Strengthening mental health promotion, Fact sheet No 220, WHO, 2001

The World Health Organization (WHO) defines mental health as a level of psychological well-being in which an individual can realize his or her own potential, cope with the normal stress of life, work productively and make a contribution to the community.

Mental disorders consist of a broad range of conditions with different symptoms. However, these conditions are generally characterized by alterations in thinking, emotions, mood or behavior, relationships with others and/or impaired functioning.

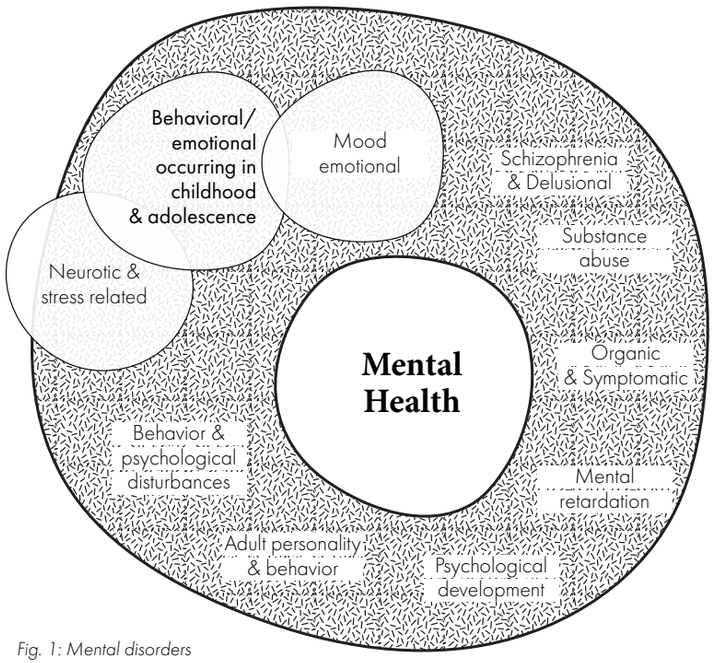


Fig. 1: Mental disorders

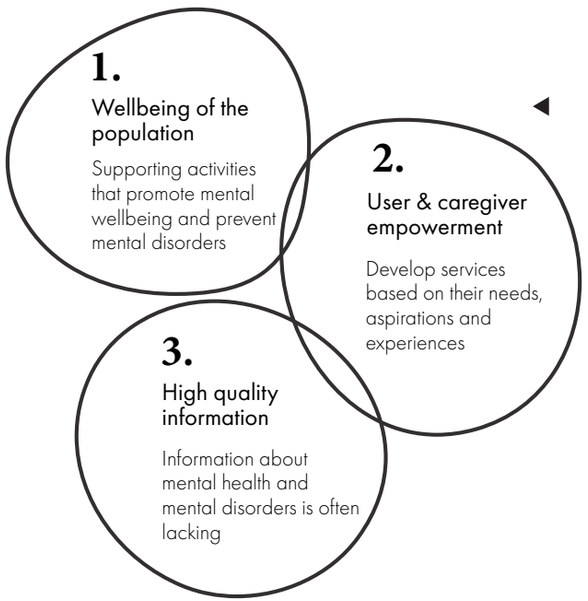
Mental health: strengthening our response. (n.d.). from http://www.who.int/mediacentre/factsheets/fs220/en/

No health without mental health

Mental health is an essential component of health. WHO states: *"Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity."*

Mental health problems not only affect the lives of people living with mental disorders, it also has an impact on their careers, family & relatives and the productivity of a society as a whole.

In the European region, WHO has established five priorities when it comes to mental health. We have found that the following three priorities fit the Norwegian mental care context and our project:



According to WHO, there is a strong, existing body of knowledge on what works in mental health promotion, prevention, care and treatment. However, services and practices of today do not always reflect this knowledge; implementation remains a challenge.

Stigma and prejudice are still common, and they affect all aspects of mental health, including whether people seek and receive help.

Situation in Norway

According to the Norwegian Institute of Public Health (Folkehelseinstituttet), mental disorders are a major health problem for children and adolescents in Norway. They estimate that 15-20% of children between 3 and 18 years old have reduced function due to symptoms of mental disorders such as anxiety, depression and behavioral disorders. Half of this population (approximately 70,000 youth) will have such severe symptoms that they meet the requirements for a psychiatric diagnosis that requires treatment.

We have chosen to focus and design for teenagers, as we have identified that they are vulnerable to developing mental disorders and we see a need to promote positive mental wellbeing among this group.

The importance of positive mental wellbeing in adolescence

People who experience mental disorders during childhood and adolescence have a higher risk of experiencing mental health problems later in life. According to WHO, about half of all mental health problems in adulthood begin during or before adolescence.

Improving resilience to mental illness among young people is very important; being in good emotional and physical health allows them to manage the challenges of adolescence and eases their transition into adulthood. Teaching adolescents coping mechanisms, and providing them with support and early interventions designed to promote well-being, are key to building mental health resilience.

Feeling low in adolescence. (2017, March 29). from http://www.euro.who.int/en/media-centre/events/events/2017/04/world-health-day-2017-depression-lets-talk/news/news/2017/03/feeling-low-in-adolescence

“”

Promoting positive mental wellbeing in childhood and adolescence is associated with increased social competence and good coping strategies that lead to more positive outcomes in adulthood

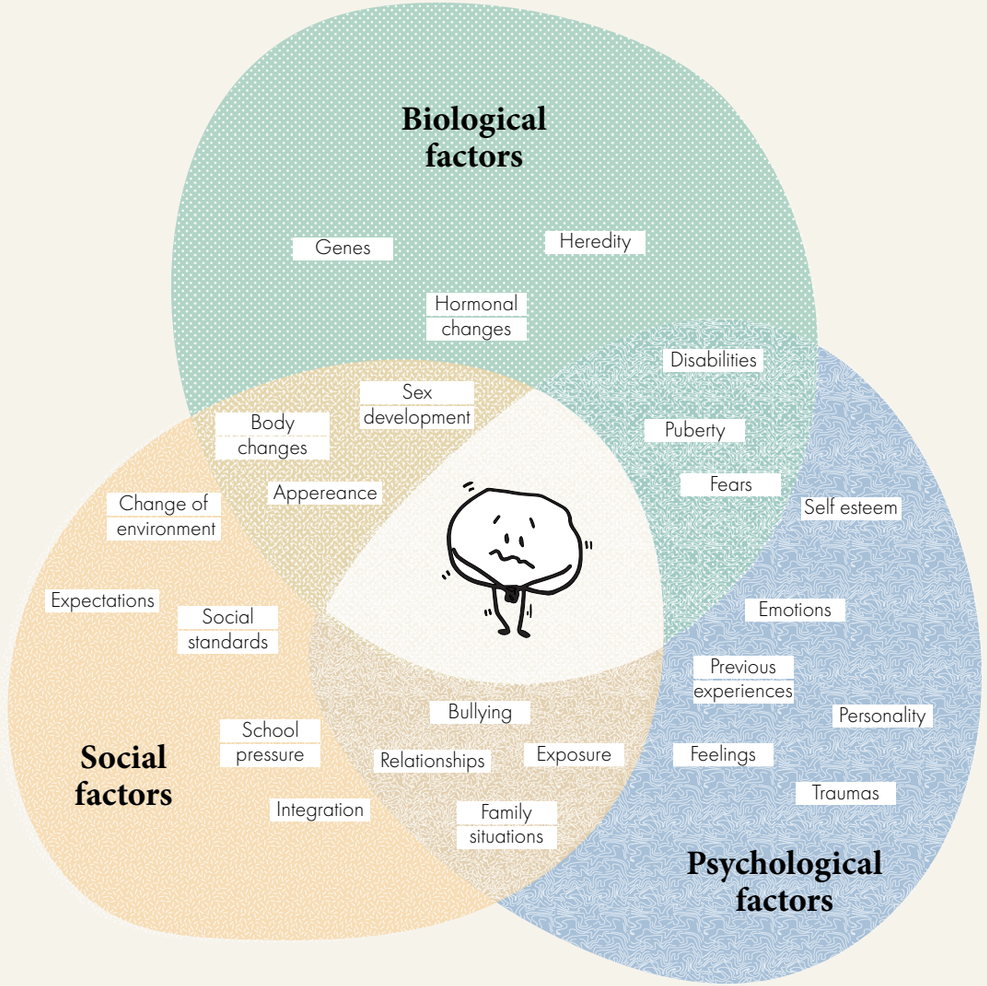
Target group

Mental disorders in adolescence

Mental disorders, as with most physical illnesses, develop in a complex interaction between biological, psychological and social conditions. Experiencing stress, pressure at school, bullying and hormonal changes are some of the most common causes of low moods among adolescents; feeling low from time to time can be normal, however poor coping skills and low self-esteem can cause regular and prolonged episodes of low mood that eventually progress to a mental disorder and impact long-term health, well-being and development. *(Fig 2)*

http://www.euro.who.int/en/media-centre/events/events/2017/04/world-health-day-2017-depression-lets-talk/news/news/2017/03/feeling-low-in-adolescence

*Fig 2: Biopsychosocial model



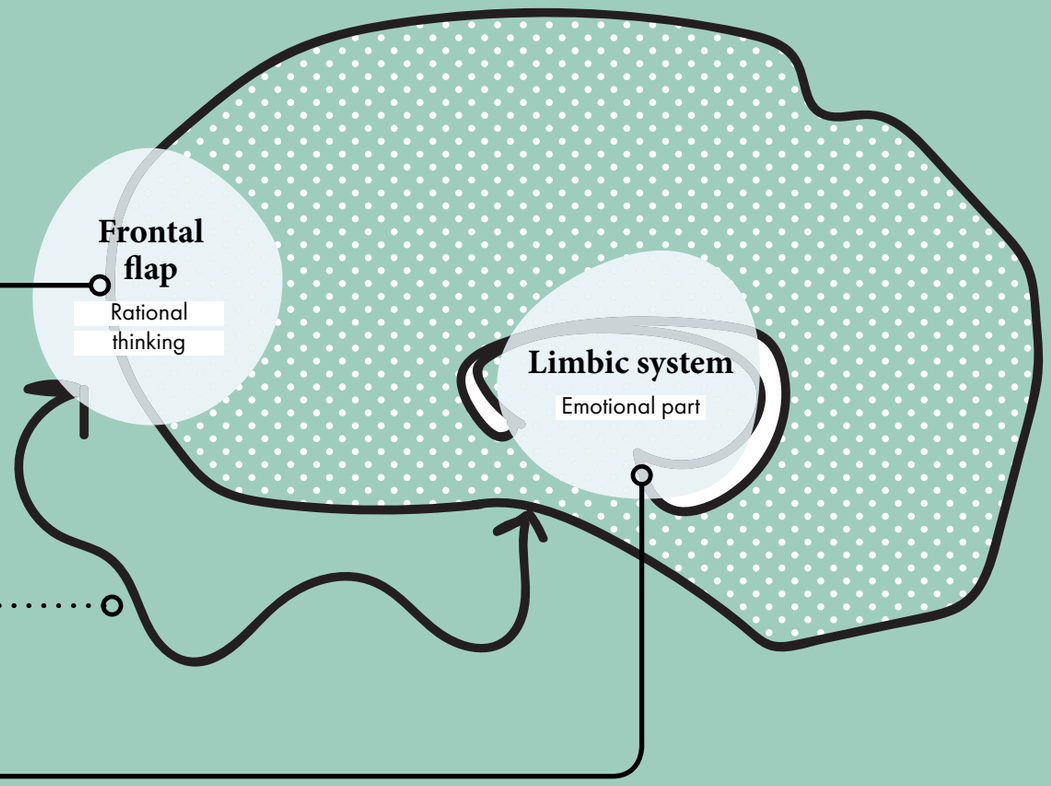
**Jay Gjedd. Neuroscience researcher*
US national institute of mental health.
https://tv.nrk.no/serie/schrodingers-katt/DMPV73003512/06-12-2012

Fig 3: Teenagers' brains

A teenager's brain

The brain is fully developed by the age of 25, it grows by becoming more specialized.

The frontal flap is the part of the brain that thinks rationally. It is crucial for long term planning and assessment impulse control. The teenagers' brain can do this but is not at its best yet.



Signals from the frontal flap compete with impulses from the emotionally charged limbic system, however the limbic system develops faster during adolescence than the frontal flap. This is why teenagers are more emotionally controlled and thoughts and feelings can be overwhelming, making them more vulnerable and emotionally unstable.

The limbic system is the more emotional, primitive part of the brain. It is more controlled by feelings than reason.

"

Most mental disorders in adolescents come from an emotional dysregulation

*Emotional dysregulation refers to the inability of a person to control or regulate their emotional responses to provocative stimuli. It can also be termed "emotional hyperreactivity"

http://www.pchtreatment.com/what-we-treat/emotional-dysregulation/

Scope & Brief

We've been lucky to have Charlotte Lunde as a collaboration partner for the diploma. She is a medical doctor (MD) working on the field of child and adolescent mental health with more than 10 years of experience.

Through her, we were introduced to the Nic Waals Institutt, part of "barne- og ungdomspsykiatrisk poliklinikk" or BUP. The Nic Waals Institutt is a specialized health service-clinic for children and adolescents in Norway. It is named after the first Norwegian child psychiatrist to work with a more holistic view of what therapy for kids and adolescents should be. This holistic vision is still present at Nic Waals in the way specialists and therapists work to address mental disorders in the youth.

From our first meeting with Charlotte, we identified three main takeaways for our project: ▶

We translated these takeaways into themes that became the basis of our research and project. This helped us define a concrete problem statement to start working from.

1.

"We are made of what we experience"

Meaning that the things we experience in the past, shape the way we are today and influence our future.

2.

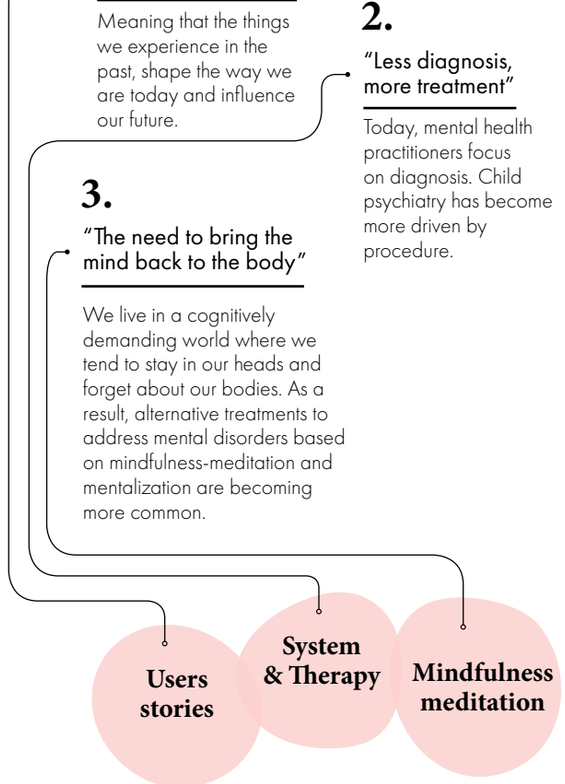
"Less diagnosis, more treatment"

Today, mental health practitioners focus on diagnosis. Child psychiatry has become more driven by procedure.

3.

"The need to bring the mind back to the body"

We live in a cognitively demanding world where we tend to stay in our heads and forget about our bodies. As a result, alternative treatments to address mental disorders based on mindfulness-meditation and mentalization are becoming more common.



Problem statement

1

How might we use mindfulness-meditation techniques as an instrument in treatment of stress, anxiety and depression in teenagers?

Methodology

Our approach to the project has been strongly explorative; we have combined traditional design frameworks such as the double diamond *(British design council, 2005)* with a more experimental and mindfulness-based approach. It's worth mentioning that one of the key drivers for this project has been to keep a high level of enjoyment throughout the process. We have looked for opportunities for 'joy' in order to trigger our creativity and learn from such situations iteratively.

When diving into complexity, we have used the rich design space framework, a tool for intensified research-by-design, collaboration, synthesis and decision making, with the aim of developing new design solutions and to visualize the development of the project. *(Sevaldson 2008, p. 41)*

In summary, the process could be described as user-centered, holistic, explorative, detail-oriented and fun overall.

A. (n.d.). The Rich Design Research Space. from http://www.systemsorienteddesign.net/index.php/tools/rich-design-space

Methods & techniques

It should be mentioned that the different phases overlapped most of the time and were not strictly separated from each other. However, the main focus of each phase changed as the project evolved, as shown in figure 4.

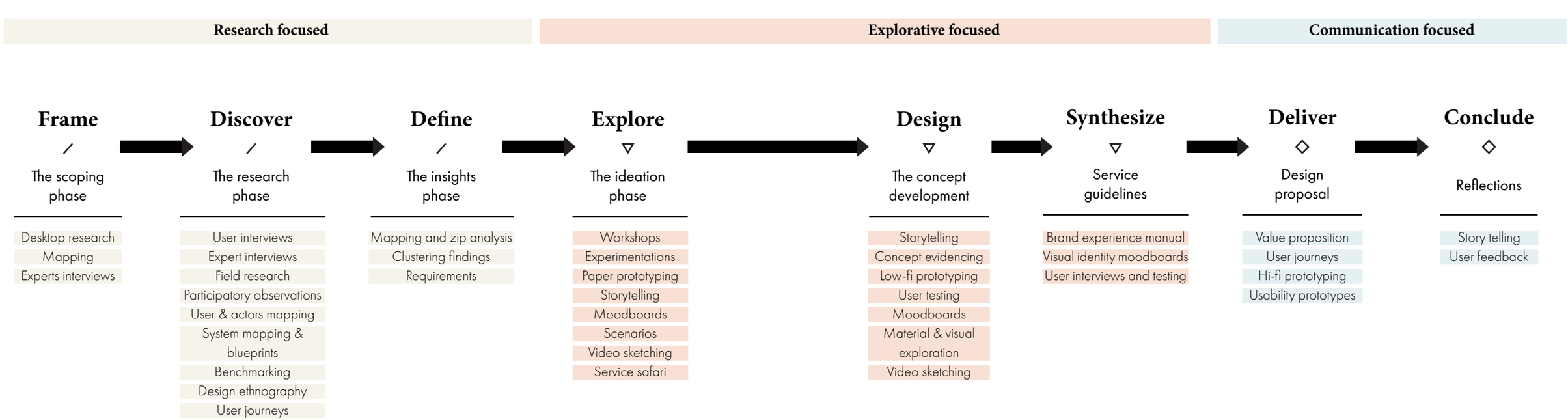


Fig. 4: Our Process


How might we use meditation and mindfulness techniques, inform treatment of Teenagers (12-18) with stress, anxiety and depression ?
digital mindfulness
MONDAY
TUESDAY
WEDNESDAY
THURSDAY
FRIDAY
SATURDAY
SUNDAY
SEPTEMBER
OCTOBER
NOVEMBER
DECEMBER
FIRST MIDTERM
SECOND MIDTERM
FINAL DELIVERY

2

In this chapter we will dive into the research phase of the project. We will describe the three main areas we explored when talking to users and experts: user stories, the system and therapy context, and the world of mindfulness-meditation.

Discover

The research phase

Users stories

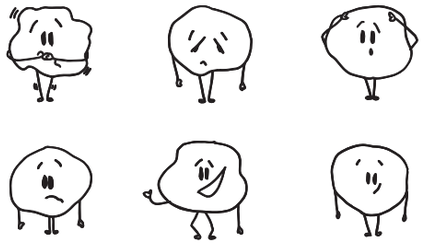
In previous projects, we have experienced the value of involving users throughout the process in order to understand their behavior and beliefs, co-create, user test, etc. However, as our target group was teenagers dealing with mental disorders, the situation was slightly different for this project.

A challenge we were aware of from early on was how to reach the target group; since they are under 18 years old, strict regulations and protections apply, and advance permission from their parents or guardians would be required. Further, in order to be able to contact patients at the clinic, we would have to go through a process to get the required permission from senior administrators. This process requires time, and permission was not certain to be granted to a research-driven, explorative project such as ours. Our collaborator was also unsure about involving her own patients as this could have a negative effect on their treatment and therapy.

Another challenge that we identified is that it can be difficult for someone to recognize that their mental health may be a problem when they are struggling with a mental disorder. This makes it hard to reach out to and approach people in this situation.

We addressed these challenges by interviewing people who have experienced a mental disorder in their childhood and adolescence, and who attended therapy in that time or in recent years. We found this valuable in the early stage of the project, as these people have a more holistic and reflective perspective of their own experience. Some of them became a resource for feedback and concept evidencing throughout the process.

For later stages of the project, we got in touch with teenagers to define an appropriate brand strategy, visual identity and discuss the features of the proposal.



We gathered a total of 6 stories from people in their 20-30s. This helped us gather insight on the impact and evolution of mental disorders with onset in early years in life.

We mapped out the stories based on the "human development" timeline in order to identify patterns and insights, as shown in *Fig 5*.
In this map, we can see how the stability of the person changed over time as they aged. As they grew older and mental disorders emerged, we identified some common emotional patterns that users went through regardless of their individual experience.

The loneliness feeling

The first phase has an onset at an early age, commonly between ages 6-8 years, when kids are strongly influenced and affected by their surroundings.

At this age kids are not very vocal, therefore mental disorders are difficult to identify. Most of the time, mental disorders tend to be mistaken for a physical illness when somatic symptoms are present.

During this phase, parents play the biggest role in determining whether or not the child gets help.

During this phase, kids experience what we called "the loneliness feeling", when they feel and think something is wrong with them, and they are the only ones in that situation.

> ***I felt I was the only kid with this...***

This often leads kids to keep things to themselves and not talk about it or look for help. As one person told us:

> ***I didn't want to be the kid that always needed help...***

Need of validation and knowledge

The second phase develops during adolescence, between the age of 14-19 years. During this time, teenagers are exposed to a mix of different psychosocial factors that, combined with biological developments, can be overwhelming. In addition, this age is a transitional state from childhood to adulthood and therefore changes in behavior and independence from parents become more obvious.

When mental disorders are present, a need for validation and knowledge arises. As one person told us:

> ***You don't have the mental capacity to determine yourself when you're in it...***

It is in this phase when teenagers try to reach out for help.

However, the public healthcare system does not always support this. The threshold to enter the system can be too high, and waiting times combined with the fear of being seen or discovered can result in individuals going untreated.

Acceptance and understanding are the key to regain control

The final phase is the culmination of the previous two; it takes place from age 19 to the mid-twenties, when mental disorders develop into more serious problems and the need for treatment becomes crucial.

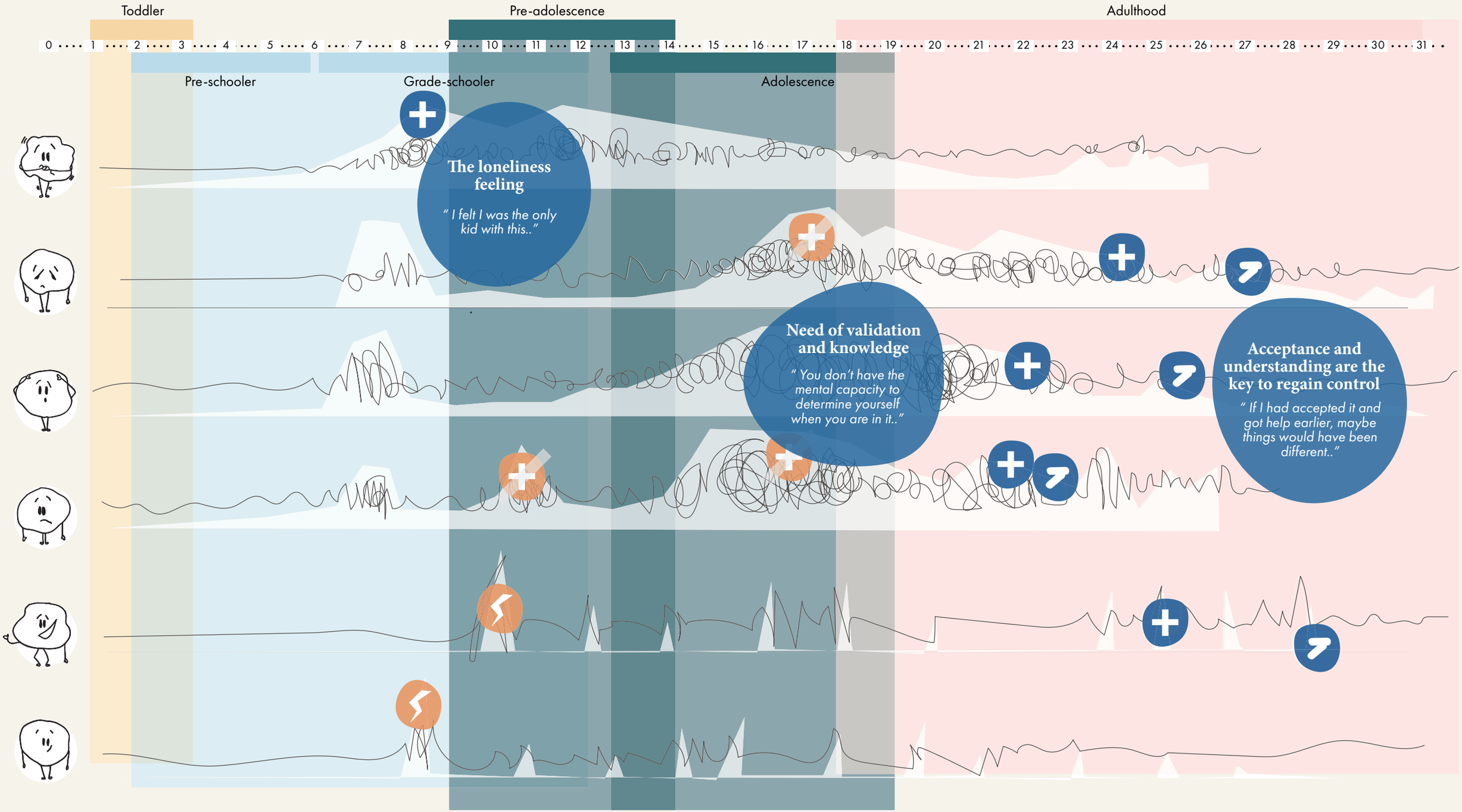
The threshold to get into the healthcare system is still high, however, there are other service providers who make additional services available to this age group, such as student welfare organizations.

Once in treatment, young adults face a journey of accepting and understanding their condition in order to regain control. During this stage, many struggle with thoughts of what could have been different. As someone told us: "If I had accepted it and got help earlier maybe things would have been different."

> ***If I had accepted it ang got help earlier, maybe things would have been different...***

Here, we see a correlation of untreated mental disorders resulting in more serious problems requiring medication-based treatment, and the impact that this has on the young adult's journey towards self-acceptance.

Fig 5:Users stories map



Traumatic experience

Failed attempt to access the specialized care

Succesful attempt to access the specialized care

Medication based treatment

Actors map

From the stories gathered, we got an overview of the teenager's network and relevant stakeholders. We mapped this out in order to identify key actors involved in his or her life that are actually empowered to do something.

As we can see in figure *Fig 6*, The parents/ caregivers, friends and teachers have the strongest relations and are the closest to the teenagers. However, only caregivers and teachers have the possibility to help the teens if they need it.

We talked to a parent, and to Ryan Anthony Rothanburg, teacher at "ungdomsskolen"(Junior high) to get an understanding of the role they play and of their experience. We found two main insights:

1. A mental disorder affects not only the individual teenager, but the people around them as well. A big part of the teacher's job is to look after the mental health and wellbeing of the students.

2. Lack of information.
Even though there is plenty of information in the topic of mental health, many parents do not know how to act or help when their child experiences a mental disorder.
This often leads parents to believe they have done something wrong and to develop feelings of guilt.

> *Mental health and well-being is a big part of being a teacher. That's what makes the job so intriguing! But it's hard to see the difference between common teen problems and heavy stuff...*

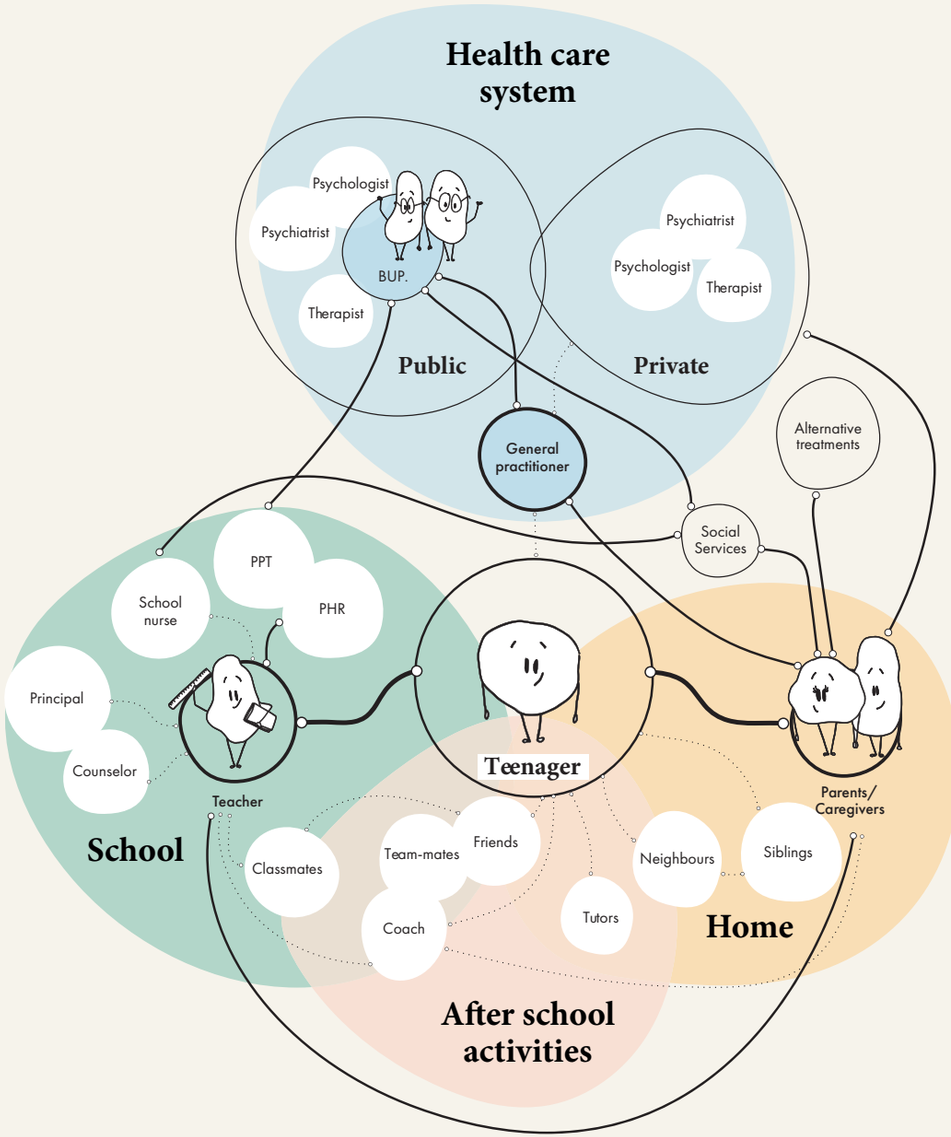
Teacher

> *We felt we had done something wrong. We as parents needed therapy too, it affected the whole family...*

> *I was afraid to say the wrong things...*

Parent

Fig 6: Actors map



Health care system

We talked to our collaborator Charlotte Lunde MD at Nic Waals, and Trine Lise Auklend, psychologist at a different BUP, in order to understand and map out the current system, presented in *Fig 7*.

1. Struggling with a mental disorder

When a teenager struggles with a mental disorder, it can take some time before they decide to seek help.

2. Seeking help

When seeking help, teenagers can do it on their own, through their parents or through the school system (Teacher/school nurse).

3. Talking to someone

This will lead teeangers further into the system, for example to a GP, PHR (Klinikk for psykisk helse og rus) or PPT (Pedagogisk-psykologisk tjeneste) at school.

Here the medical staff will assess the severity of the case through a questionnaire and refer further in the system based on the results.

4. Referral & waiting list

If the life of the teenager is not in risk, it could take up to three months to get into the specialized care, and therefore many teens drop out of the process.

Fig. 7: Specialized public healthcare system

This looks like a linear process and in fact, this is what the Directorate of Health was striving for with the implementation of the "Pakkeforløp for psykisk helse og rus" in 2018, a diagnosis and treatment plan for mental health aiming to reduce wait times and standardize the service across the country.

5. Getting to know

Once admitted to BUP (Barne- og ungdomspsykiatrisk poliklinikk), the medical staff get to know the case and situation, diagnose the user, and oversee treatment based on the diagnosis.

The focus is on diagnosis. Both front and backstage therapists and specialists have to follow rules and procedures to determine if the case meets the criteria for treatment.

This process is strictly clinical, following a set of guidelines provided by WHO in the "ICD 10 Classification of Mental and Behavioural Disorders," in combination with observations, forms and interviews with both the teenager, parents and other relevant actors.

6. Diagnosis procedures

This could take some weeks, but once enough information has been gathered, a team at BUP determines a diagnosis and course of treatment for the teenager.

If the case does not meet the criteria or can not be treated at BUP, they are referred to the appropriate clinic without further follow-up.

7. Treatment

8. Follow-up

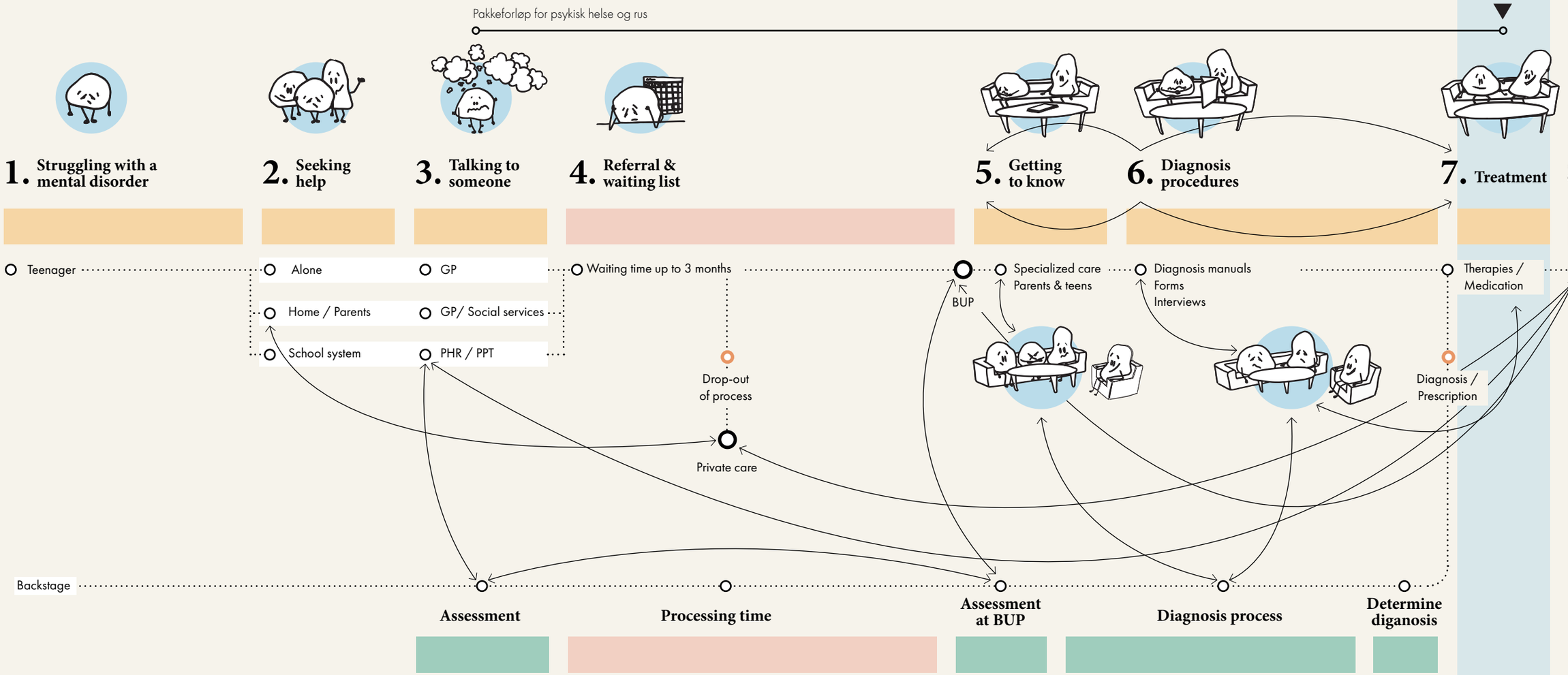
The nature of the follow-up depends on the type of treatment required and if medication was involved.

'Pakkeforløp for psykisk helse og rus. (n.d.). from https://helsedirektoratet.no/folkehelse/psykisk-helse-og-rus/pakkeforlop-for-psykisk-helse-og-rus#arbeidsgrupper-i-pakkeforløp-for-psykisk-helse-og-rus

Fig 8: Specialized healthcare system map

However, today the situation is much more complex as there are many loops and most of it relies on the individual's needs.

We have chosen to focus on the treatment stage, as we see that providing a solution there could also have an impact on other places in the user journey in the future.



Therapy

When looking into the therapy context, we can see that it focusses strongly on diagnosis and procedures resulting in the actual treatment getting less attention. When it comes to the treatment itself, there are a variety of techniques to treat mental disorders:

Exposure therapy

Documented for treatment of anxiety and compulsive disorders, where the patient will gradually learn to approach anxiety-inducing situations in order to experience how the fears gradually decrease.

Conversational therapy

Another common treatment for anxiety disorders, the well-known Cognitive Behavioral Therapy or CBT is a form of conversational therapy. Through support and advice, the patient learns to identify and alter unwanted thoughts, feelings, ideas and actions that trigger anxiety.

The appropriate treatment is determined by the team at BUP and in agreement with the caregiver based on the diagnosis given and the teenager's condition.

However, there is an alternative treatment (based in mindfulness-meditation principles) called mindfulness based stress reduction or MBSR, which is not based on diagnosis and it has been proved to have a positive impact in people dealing with stress, anxiety and other illnesses. Places like Nic Walls, and Charlotte Lunde specifically, practice this kind of treatment in order to reduce the involvement of medication when it is not needed.

Group therapy

A form of treatment where the patient will see their own situation in relation to others in order to get insight on why others do what they do, and see that they are not alone. It can also help to know and understand thoughts, feelings, actions and reaction patterns better. Group therapy also has an impact as a motivating factor for other forms of therapy.

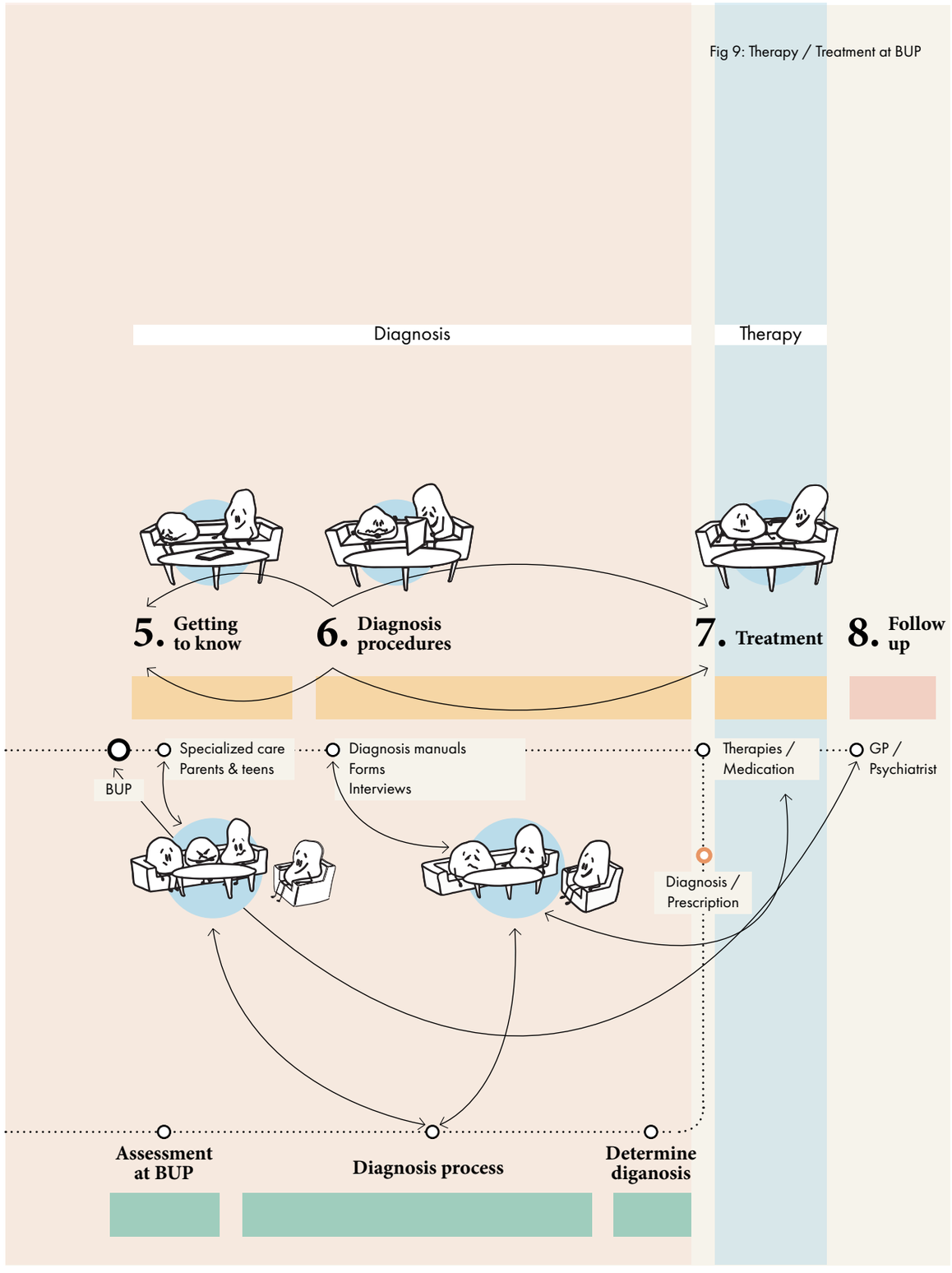
Medication

Often, this can be very helpful for anxiety and obsessive-compulsive disorders. It can be given by itself or in combination with other forms of treatment.

Mindfulness based stress reduction (MBSR)

Angst. (n.d.). from https://www.kognitiv.no/psykiske-lidelser/ulike-typer/angst/

Fig 9: Therapy / Treatment at BUP



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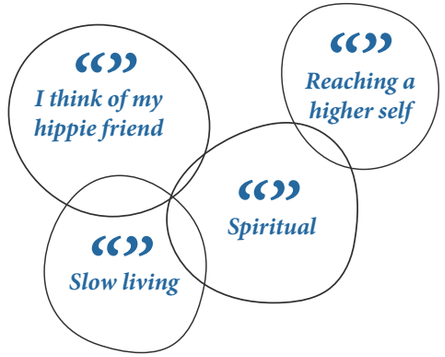
https://lyckelivet.com/blog/2015/11/15/mindfulness-har-du-10-minutter/
http://arwen.no/meditasjon/
https://www.senterforbevissthet.no/index/mindfulness/
http://www.webstash.no/2009/02/zen-meditasjon-og-buddhisme/

Mindfulness - meditation

In order to understand what mindfulness-meditation means, we conducted desktop research and exploration of common associations to the term. We started by asking people what they think when hearing the words "mindfulness" and "meditation", and from this we created a moodboard to visualize their thoughts. *(Fig 10)*



In general, the two terms are hardly differentiated. They are commonly associated to spiritual meditation culture. Mindfulness-meditation is perceived as somewhat boring and as something that is used to "fix" something that is wrong with oneself.

Fig. 10: Moodboard of common associations

Guyaux, F. (2017, September 29). Mindfulness: Getting Started. from https://www.mindful.org/meditation/mindfulness-getting-started/

However,
this is what they actually mean. *(Fig 11)*

Jon Kabat-Zinn Professor of Medicine and creator of the Stress Reduction Clinic and the Center for Mindfulness in Medicine, also defines it as:

> ***The awareness that arises through paying attention, on purpose, in the present moment and nonjudgementally. It's knowing what's on your mind...***

Mindfulness-meditation is not about getting to a fixed destination, it is about exploring. This way, we get to explore the workings of our minds, our sensations, emotions and thoughts. Our minds are naturally capable of mindfulness, awareness, kindness and compassion.

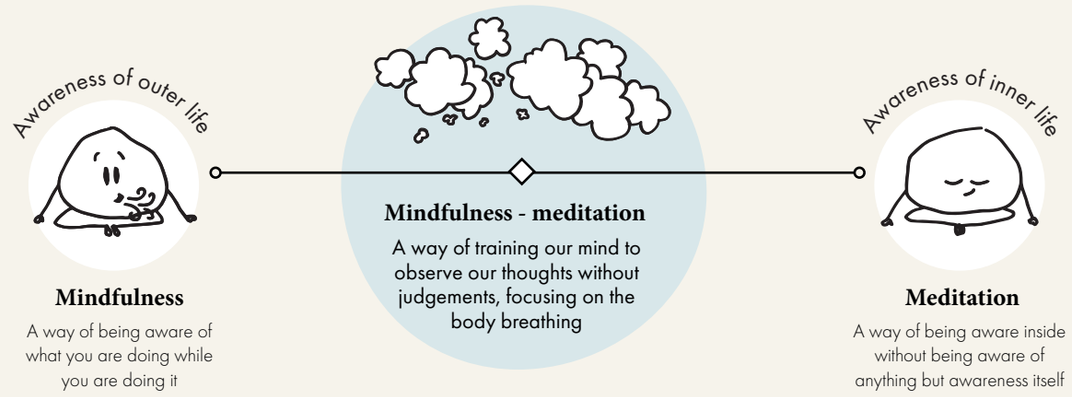


Fig. 11: Mindfulness-meditation

**Screenshots from the following applications: Calm, Breathe, Smiling mind, Headspase, Booster buddy, OMM, Breathe+, Mindfulness, happyfy, Ada, simple habit, pause and sway.*

State of the art

In order to really get a grasp of the mindfulness-meditation concept and practice, we needed to try it out ourselves.

We joined a mindfulness group session, conducted by an organization called Oslo Community Mindfulness, to conduct observations and experience the practice. The session consisted of a short introduction by two guides, followed by a 30min silent meditation and a wrap up conversation where the attendees shared their thoughts.

A total of 15 people attended the session and even though we knew what mindfulness-meditation meant in theory, the actual practice was rather difficult. People had different levels of experience, and for beginners like us, it was a big challenge to sit down in silence for 30 minutes in a "mindful way", without any previous experience or an introduction to how to do it.

Therefore, we looked into existing online services and popular apps that provide a more guided practice. We tested a total of 20 apps that offer different ways to take a "break", based on their popularity and within the topics of mindfulness-meditation, mental well being and breathing exercises.

We saw the potential a digital interface can provide for a guided practice in different situations; a digital interface can be portable and also work on the platforms frequently used by teenagers. We decided to conduct a more detailed analysis of the 13 most used apps in order to identify their qualities and identify opportunity areas for developing a new digital service.

1.

On a scale from mindfulness to meditation and spiritual level to mental well being, we want to apply mindfulness-meditation towards mental wellbeing, separating it from the spiritual associations. *(Fig 12-top)*

2.

Secondly, from sound-based to visual-sensorial and simplicity to complexity, we want a more sensorial experience but easy enough for teenagers to use. *(Fig 12-middle)*

3.

Lastly, we want to actively engage users and use body breathing as a key technique and anchor. *(Fig 12-bottom)*

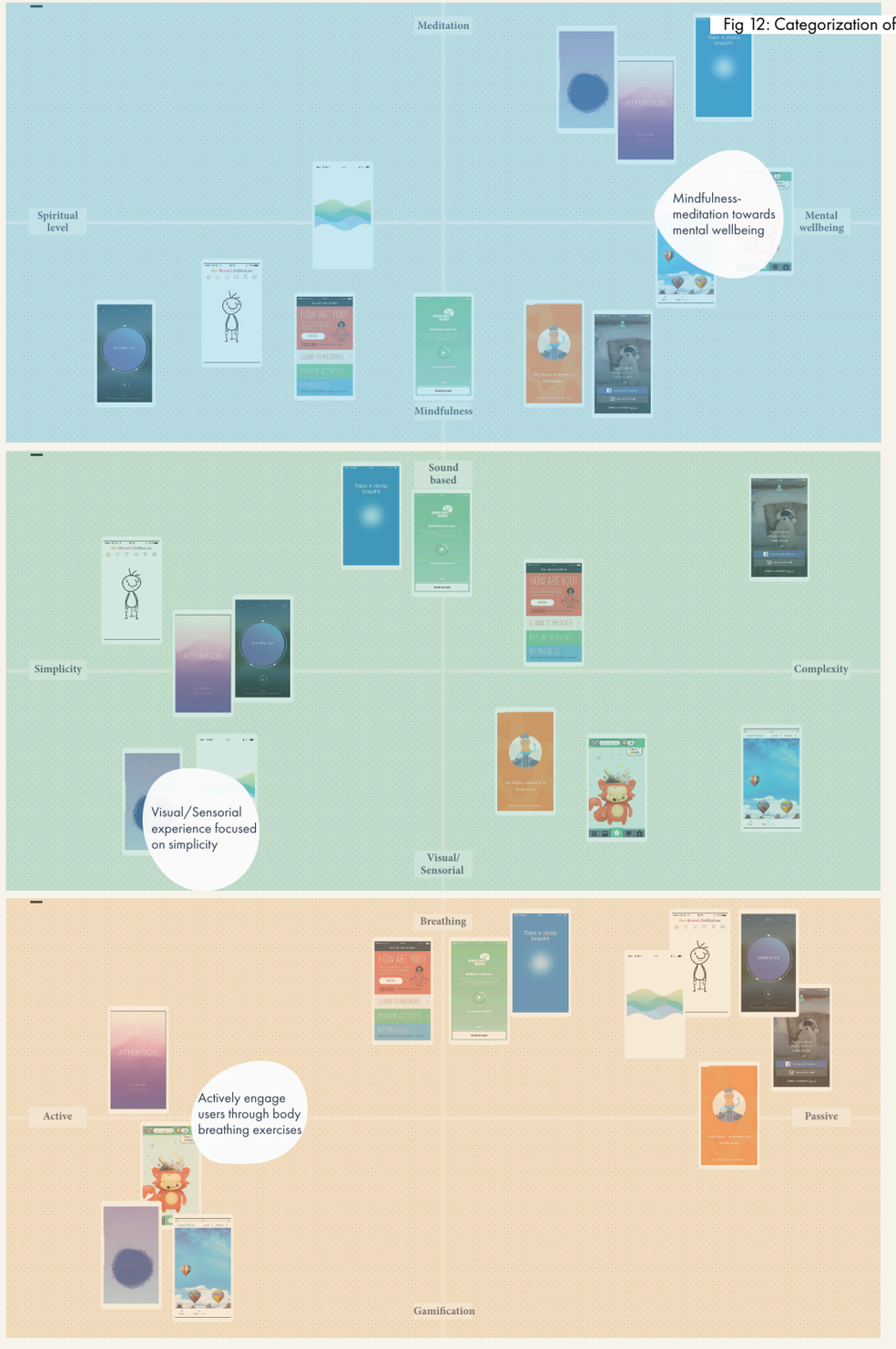


Fig 12: Categorization of apps

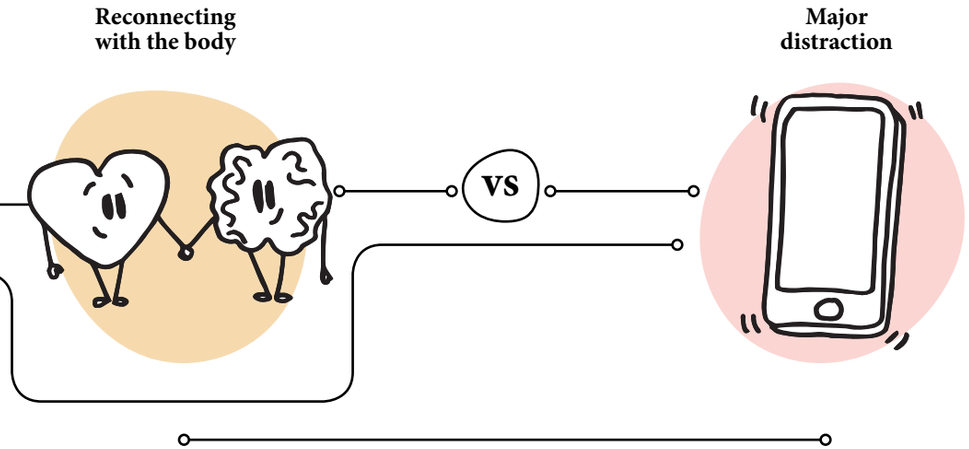

MEDITATION
SUBSCRIPTION BASED.
VOICE
INTRO
OMM
INTRO.
Choosing a Buddy (Naming at the start).
Things you can buy with earned coins.
POSITIVE QUALITIES:
- Connection to characters.
- Buddy concept.
NOT SO POSITIVE:
- Too much TEXT.

With the information gathered,
we re-wrote our initial statement

2

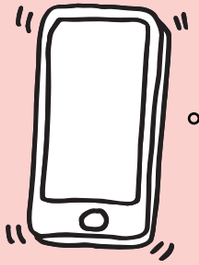
How might we translate mindfulness-meditation techniques into a digital interface that can be used in treatment of stress, anxiety and depression among teenagers?

In this reframed brief, we identified a tension
between two elements we are trying to work with

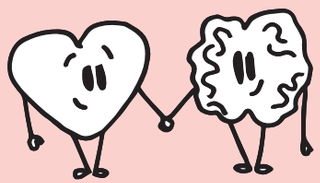


To practice mindfulness-meditation, we are trying to reconnect with our own bodies and somehow stop any external input as a way of “going offline”.

We are trying to do so through a digital interface because of its potential and versatility -- however these devices also serve as a door, always connecting us to the world.



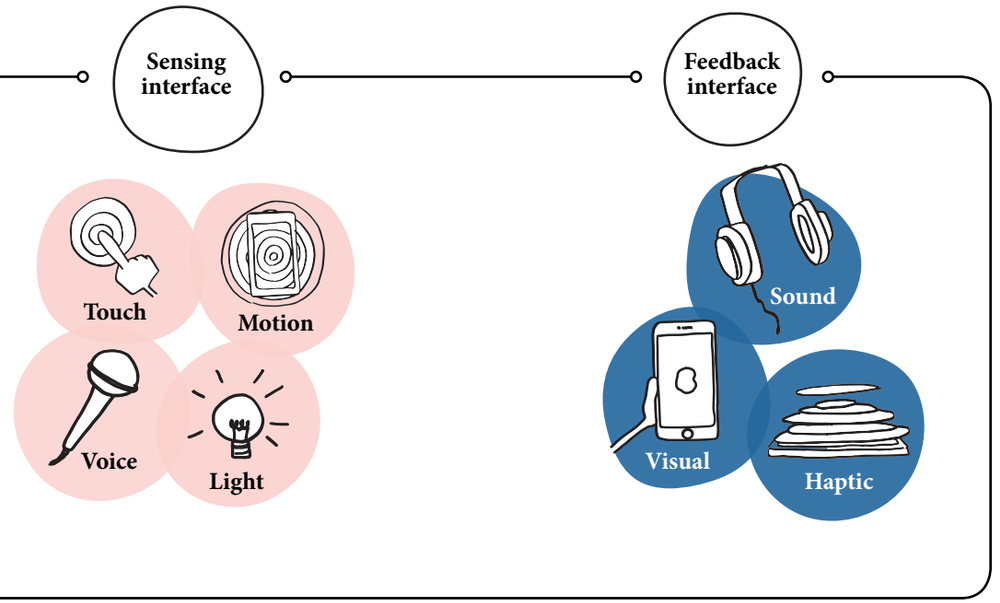
So how can the “biggest” distraction help us be less distracted?



There is a lot of discussion on how this interactive technology is making our lives more distracted and stressful.

However, we see a huge potential for using mobile phones as a platform for reaching out to teenagers. It combines both sensing interface and feedback interface.

This means that mobile phones are capable of detecting mindful body movements while at the same time providing real-time digital feedback to encourage people to sustain these mindful movements for a longer period of time. This is called *“Interactive mindfulness-meditation”*.



Ustwo Nordics. “Introducing interactive meditation” https://ustwo.com/blog/introducing-interactive-meditation Published: 30.03.2017

Interactive mindfulness - meditation

In today's digital age, external stimulations and experiences are designed to capture, manipulate and compete for our attention. We perceive the external world through five basic senses, however we are constantly overexposed, leading us to feel distracted and get overwhelmed by the external world, making us lose connection with ourselves and our own bodies.

In addition to the five senses, we also possess an internal sense scientifically referred to as "proprioception". This "sixth sense" is essentially the awareness of our body's movements, as well as the ability to change our movements based on additional inputs received from our visual and tactile organs. This sense is also an integral part of our voluntary muscle control system and the reason why every physical activity can be performed with precision and grace.

This means that once we are conscious of our body, we can control how our movements will follow from moment to moment. This principle has been used since ancient times; conscious control of body and movement have been an essential part of the mindfulness-meditation practice.

Mindful movement as it is called, can help us work in a space beyond our busy minds. By focusing on the breath while doing simple movements, we can synchronize our minds and bodies. After doing that for a few minutes, we start to focus and become more present. This principle is not strictly attached to any specific practice, and therefore can be applied to every movement we make, allowing mindful movement to be a general practice that can be integrated into our lives.

In addition, today's technology can easily sense slow, continuous and gentle body movements, enabling us to detect voluntary attention in a simple and effective way. This is an unique opportunity for interactive technology like smartphones to effectively facilitate mindfulness-meditation practice without the need of expensive biofeedback monitors such as a brain scanner or breath monitor.

Ustwo Nordics. "Introducing interactive meditation" https://ustwo.com/blog/introducing-interactive-meditation Published: 30.03.2017

The framework

The multi-platform design studio ustwo in collaboration with the Danish mental health company Pausable have developed an approach that enables interactive technology to detect human attention, engaging humans with a purposefully designed activity for an extended period of time and digital feedback.

This is called attention feedback loop, and it is the foundation of interactive mindfulness-meditation.

The framework is grounded in the scientific areas of attention restorative process in psychology, and the relaxation response in physiology.

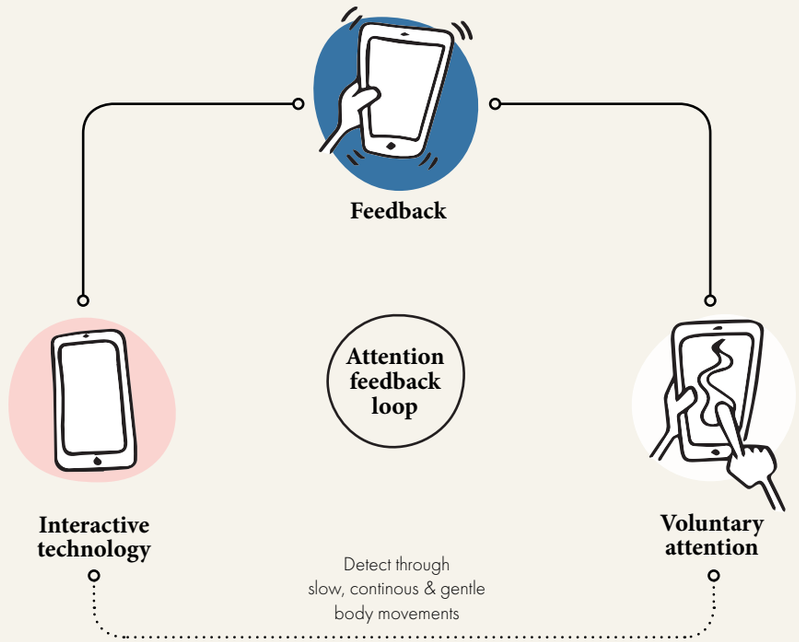


Fig. 13: Attention feedback loop

Stephen Kaplan. 2001. Meditation, restoration and the management of mental fatigue. Environment and Behaviour 33(4), 480-506. http://dx.doi.org/10.1177/00139160121973106

Attention restorative process

Professor Stephen Kaplan from the University of Michigan, has proposed to principles for the attention restorative process:

1.
Avoid calling on tired cognitive patterns, by being away from everyday environment.

2.
Avoid unnecessary effort. Running a single cognitive map for an extended period of time is ideal for attention restoration.

Utswo + Pausable have developed two applications based on the interactive mindfulness-meditation framework. They apply mindful body movements on an engaging audio-visual environment that gives people a single cognitive map, avoiding unnecessary cognitive effort. In addition, a rewarding experience is available to people when the interactive technology detects a person's focused attention through mindful movements. In this way, the experience gives meaning to the act of focused attention, motivating people to keep going for an extended period of time.

Herbert Benson and Miriam Z. Klipper. 1975. The Relaxation Response. Avon.

The relaxation response

Professor Herbert Benson from the Harvard Medical School introduced the concept of "relaxation response" as a way to counteract the stress response. This is a physiological response characterized by decreased arousal and diminished heart rate, respiratory rate and blood pressure. This relaxation response is essentially a self-regulative process, and therefore can be practiced by anyone.

There are two principles to trigger the relaxation response:

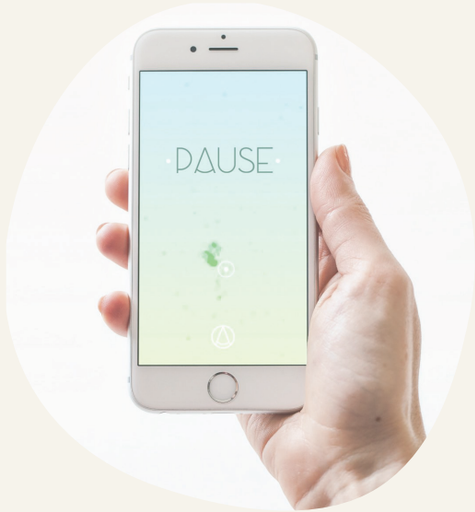
1.
The person directs and pays attention to the repetition of a word, sound, phrase, prayer or muscular activity.

2.
The person passively disregards everyday thoughts that inevitably come to mind and returns to the repetition.

The interactive mindfulness-meditation builds upon the repetitive muscular activity by using slow, continuous and gentle movements as the anchor of attention. This way interactive technology can easily detect when a person is distracted by sensing when they have difficulty sustaining the focused movements. In response, it is possible to design a digital experience to remind people to bring attention back to the focused movements repetitively, and in this way, trigger the relaxation response in the body.

**Pictures from:*
Sway. from https://ustwo.com/work/sway

The story of PAUSE.
from https://ustwo.com/blog/the-story-of-pause



PAUSE

Meditation & relaxation
for a calmer state of mind

SWAY

Mindfulness
on the move

Kavous Salehzadeh Niksirat, Chaklam Silpasuwanchai, Mahmoud Mohamed Hussien Ahmed, Peng Cheng, and Xiangshi Ren. 2017. A Framework for Interactive Mindfulness Meditation Using Attention-Regulation Process. In Proceedings of the 2017 CHI Conference on Human Factors in Computing Systems. ACM, In Press.

There is scientific evidence showing that interactive mindfulness-meditation works significantly better than guided meditation in noisy and busy places, and similarly in quiet environments. This suggests that interactive mindfulness meditation could play an important role in modern society, allowing people to experience the benefits of mindfulness-meditation anytime, anywhere.

3

In this chapter we will summarize the insights from the previous chapters. We will elaborate on the framework used to structure the findings and how we developed design principles and directions to explore further in the project.

Define

The insights phase

Findings & Ingishts

In order to structure all the information and findings we gathered from the research, we used the "3 aspects model of information flow" described by the renowned child psychiatrist Daniel Siegel in his book: The Developing Mind.

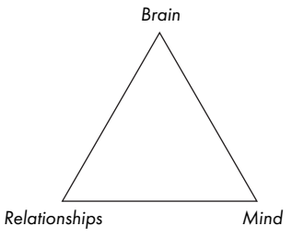
This model describes the close interaction between the brain "as the mechanisms of the embodied neural system", the mind "as the process to regulate all information and stimuli", and the relationships "as the way to share with others". We combined this model together with the biopsychosocial model presented earlier in the report, as we found a correlation between the different elements: the brain as the biological part, the mind as the psychological side and the relationships as the social part.

Based on this, we clustered and placed all the findings using a ZIP analysis and a modified Euler diagram in order to visualize and represent sets of information and their relationships [wikipedia.org, heading Euler diagram].

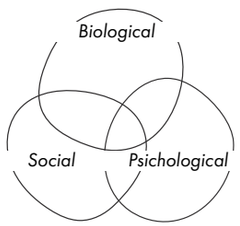
The result of this synthesis is presented in three main clusters of the brain, the mind and the relationships, in addition to the healthcare system and mindfulness meditation clusters. *(Fig 14)*

Each topic is represented with quotes from interviews; there are a vast number of them but we have picked the most representative ones to describe each topic.

The combination of the three main clusters affect the way we think and behave, and shape the way we are. Therefore we decided to focus on the central layer, as this represents the internal mind of the user/teenager and we see a greater opportunity to work from the inside.



3 aspects of energy & information flow model



Biopsychosocial model

"

To treat the symptoms of the child, you have to work from the inside

Fig 14: 3 aspects of energy and information flow.
Adapted from Daniel J. Siegel

The internal mind

1.

The loneliness feeling

“”

I’m just wrong..

“”

I felt I was the only kid with this...

2.

Need of validation and knowledge

“”

Give kids the understanding that everything is ok with them...

“”

You don’t have the mental capacity to determine yourself when you’re in it...

3.

Acceptance and understanding are the key to regain control

“”

If I had accepted it and got help earlier maybe things would have been different...

Mindfulness meditation

Mindfulness is not based on diagnosis

“”

It’s about recognize and accept the problem in order to work with it, rather than just focusing on the pain...

“”

A way of being aware and not overreact or get overwhelmed by what’s going on around us...

Importance of semantics

“”

Mindfulness & meditation often worked as stop words...

“”

I’ think of my hippie friend when I hear that word...

The brain (mechanism)

Shape development at an early age

“”

It’s like basic tools I’m missing. Now I have to learn them as an adult...

An intervention won’t save the child’s life, but can train it

“”

Teaching kids from an early age, no matter what health condition they have...

Mental disorders in childhood lead to higher risk of experience mental problems later in life.

“”

Early intervention can reduce the risk of developing mental problems later in life.

“”

Need of low threshold interventions that can help kids to cope and regulate their stress and feelings...

Health care system

Mental health is so focus on the diagnosis.

“”

Child psychiatry has become an instrument in the diagnosis process..

Exploring rather than examine

“”

You need a good connection with the patient for a good treatment..

Neuropasticity

“”

If we learn to focus the mind, we can change the brain...

The need to rediscover our body

The system should fit the kids and not the other way around

“”

I was looking more for answers rather than just “talking”...

High-Threshold to get into the system

“”

I don’t trust the system. It’s a lot for nothing...

We are made of what we experience

“”

Teens are more easily affected by the environment they live in...

A good emotional and physical health enables kids to deal with challenges and eases the transition to adulthood.

“”

Most mental disorders come from an emotional dysregulation...

Mental disorders affect not only the individual but people around them

“”

I got a lot of attention because of this, it was not that easy for my brother...

“”

I remember I saw my mom crying once...

Lack of knowledge leads to misunderstanding

“”

My mom was afraid of saying the wrong things...

“”

I was always complimented for being quiet one...

Stigma

“”

I felt really embarrassed, I didn’t tell anyone...

“”

Kids don’t want to be sick...

“”

People laughed at me when I got anxiety attacks, they didn’t understand...

The way we interpret the world is influenced by our mental stability

“”

Looking at the world through negative glasses...

“”

It doesn’t have to be a traumatic experience to destabilize us when we are teenagers...

Relationships (sharing)

The mind (regulaton)

Design principles & directions

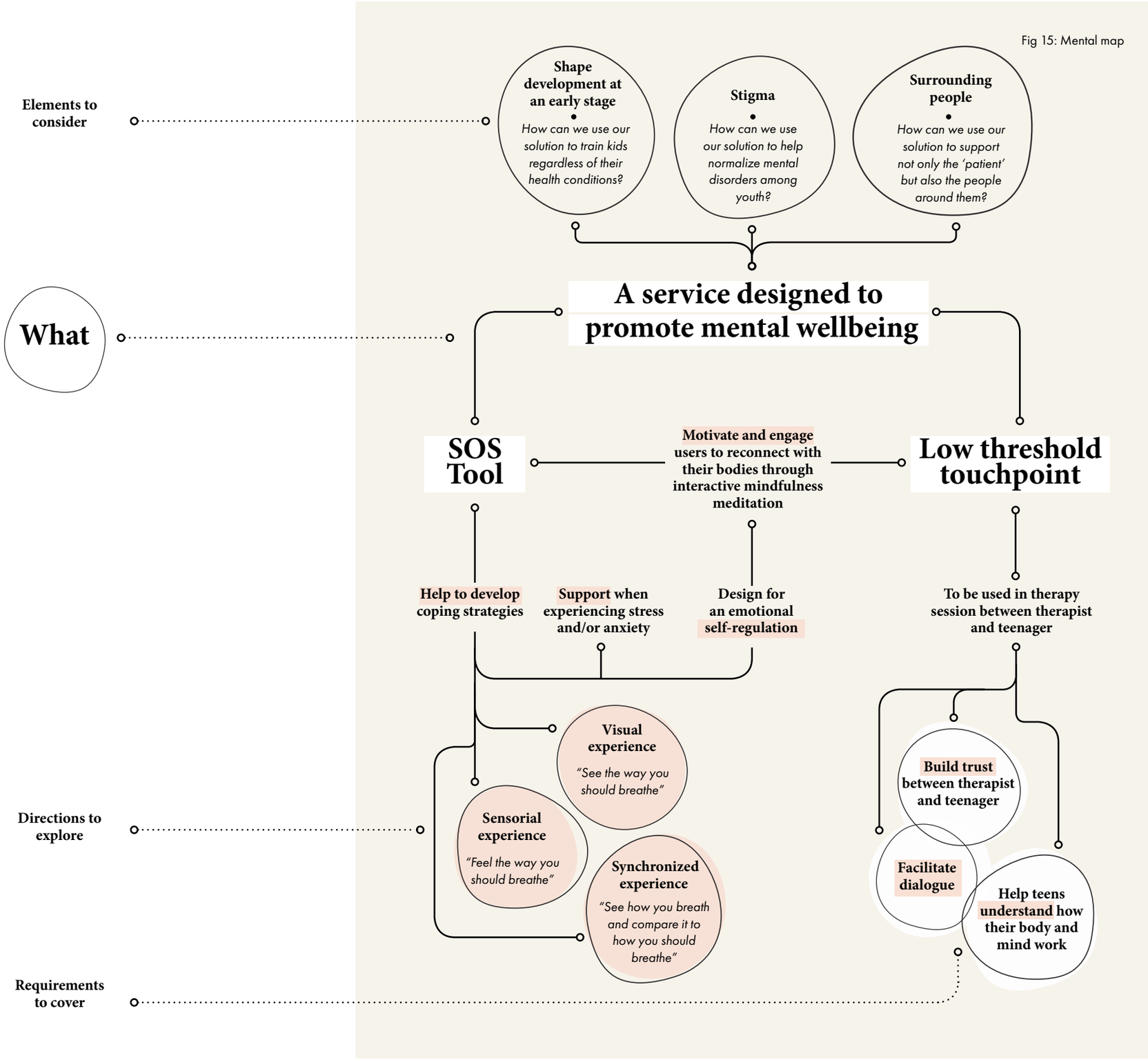
To begin concept exploration, we developed a set of principles and possible directions for the interaction and service part of the project.

We decided to structure these principles in a map in order to combine both approaches. We saw this as an opportunity to work in a crossdisciplinary way and develop a coherent proposal that answers the user's needs.

This provided us a more holistic overview of what type of service we should be designing, requirements to cover and directions to explore.

Additionally, we identified three important contextual elements that could influence or have an impact on people's behavior when interacting with our service.

Fig 15: Mental map



SOS TOOL

MOTIVATE AND ENGAGE USERS TO RECONNECT WITH THEIR BODY THROUGH BODY BREATHING

LOW THRESHOLD TOO

DEVLOPE TRATEGIES

PROVIDE SUPORT WHEN EXPERIENCING AN EPISODE OF STRESS, ANXIETY OR DEPRESSION.

DESIGN FOR AN EMOTIONAL SELF REGULATION

DESIGNED TO BE USED IN THERAPY SESSION BETWEEN TERAPIST AND TE

BILD TRUST BETWEEN BOTH THERAPIST AND TEENAGER

HELP TEENS UNDERSTAND HOW THEIR BODY REACTS TO SERTAIN SITUATIONS

HAPING DEVELOPMENT AT N EARLY AGE.

OW CAN WE USE OUR OLUTION TO TRAIN KIDS EARDLESS OF THEIR ALT CONDITIONS?

STIGMA

HOW CAN WE CON WITH OUR SOLUTION HELP NORMALISE DISORDERS AMON YOUTH?

PEOPLE

HOW CAN O OUR SOLUTION NOT ONLY T BUT ALSO

This lead us to reframe our brief once again, into our final problem statement

3

How might we motivate and engage teenagers in treatment of stress and anxiety, to learn emotional self-regulation techniques through interactive mindfulness-meditation, in order to cope better with thoughts and feelings?

It should be noted that we decided to scope our approach to work only with stress and anxiety.

Through research and talking to experts, we found that in order to work with depression, we would need to take a different approach as it could be harmful for the patients if we tried to cover all disorders with the same framework.

In addition, prolonged symptoms of stress and anxiety sometimes lead to episodes of depression and therefore, we saw appropriate to focus on the first two.

4

Explore

The ideation phase

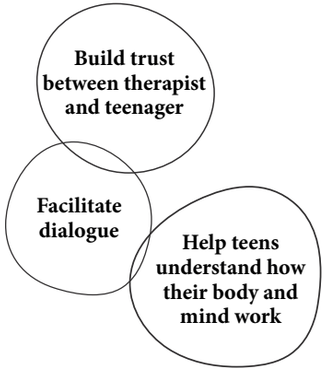
In this chapter we will dive into the ideation part of the project. We will describe the idea development process, and how we explored different directions for concept development.

Brainstorm & ideation

From early on, we started to build an “idea wall” where we placed all our thoughts and ideas to explore later in the process. The ideas were based on the findings from research, benchmark opportunities, talks with experts and people with experience in the different areas, and written material.

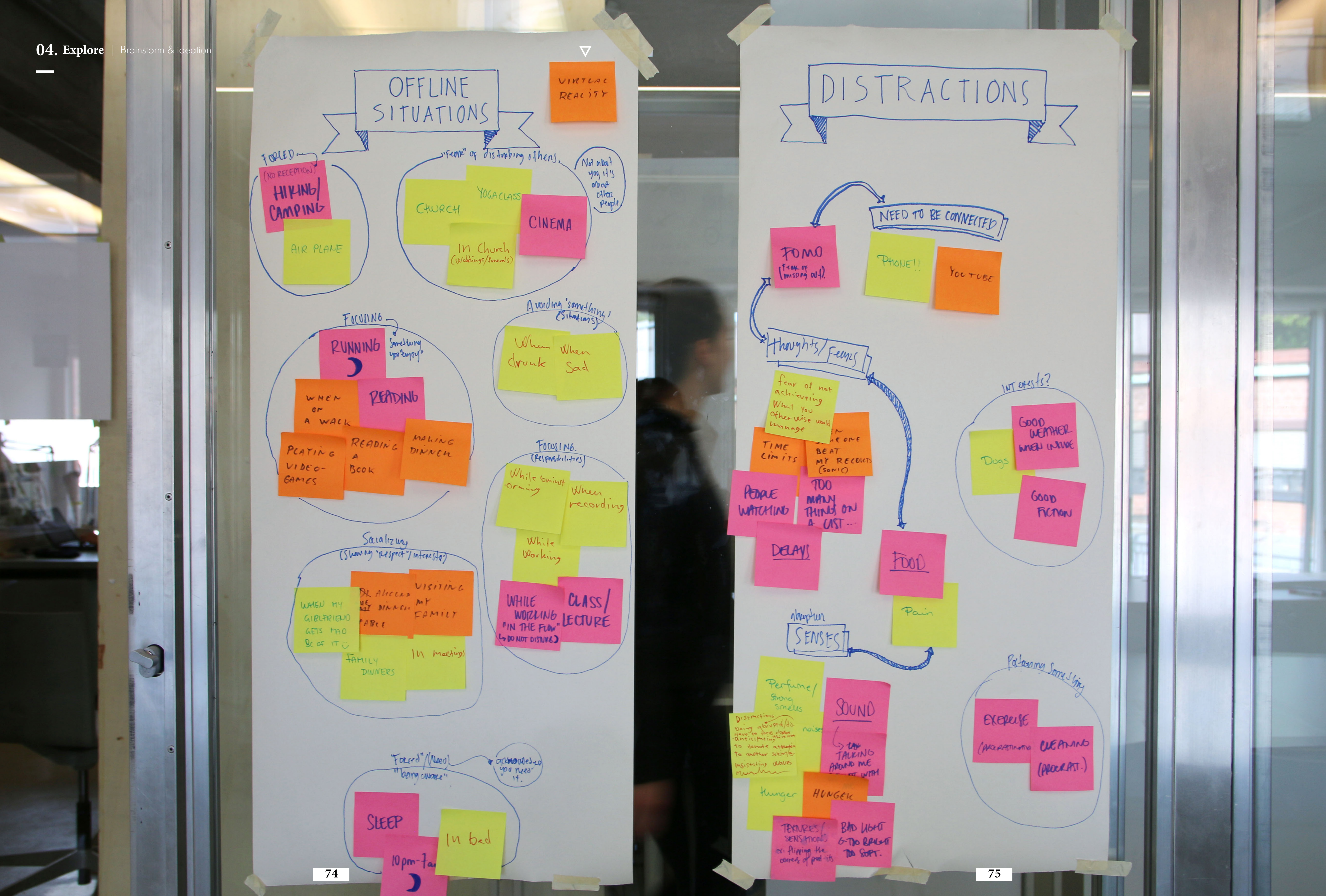
This became our starting point for the development and exploration phase. In addition, we ran a quick workshop with two interaction design students, and two external people with knowledge of CBT and mindfulness-meditation, in order to explore the concepts of “distraction” and “offline situations”, and gather more ideas.

We sorted all the ideas into the different directions presented in the last chapter, and defined a set of requirements. These requirements had to be present in all the ideas we explored further.

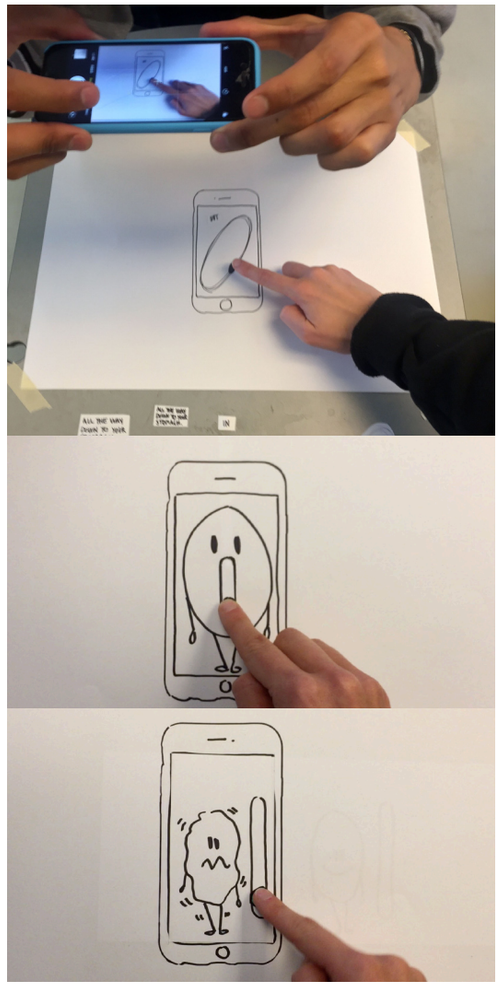


The ideas we gathered were based primarily on visualizing breathing in different ways. Breathing is an important part in mindfulness-meditation because it helps anchor our focus to something specific in order to avoid distractions from the outside. Since the right breathing is instantly relaxing, facilitating the right breathing became an important part of idea development.

We also identified many ideas primarily based on explaining how the body reacts to thoughts and feelings.


OFFLINE SITUATIONS
VIRTUAL REALITY
FORCED
(NO RECEPTION)
HIKING/ CAMPING
AIR PLANE
"Fear" of disturbing others
CHURCH
YOGA CLASS
CINEMA
In Church
Not about you, it's about other people
FOCUSING
RUNNING
Something you enjoy
WHEN ON A WALK
READING
PLAYING VIDEO-GAMES
READING A BOOK
MAKING DINNER
Avoiding 'something' (Situations)
When drunk
When Sad
FOCUSING (Responsibilities)
When recording
While Working
WHILE WORKING "IN THE FLOW"
CLASS/ LECTURE
Socializing
VISITING MY FAMILY
WHEN MY GIRLFRIEND GETS MAD
FAMILY DINNERS
In meetings
"being aware"
SLEEP
In bed
10pm-
DISTRACTIONS
NEED TO BE CONNECTED
FOMO
(Fear of missing out)
PHONE!!
YOUTUBE
Thoughts/ Feelings
Fear of not achieving what you otherwise would manage
TIME LIMITS
BEAT MY RECORD
PEOPLE WATCHING
TOO MANY THINGS ON A LIST...
DELAYS
FOOD
Pain
INTERESTS?
GOOD WEATHER
Dogs
GOOD FICTION
SENSES
Perfume/ Strong smells
SOUND
Hunger
HUNGER
BAD LIGHT
Performing Something
EXERCISE
CLEANING
(PROCRAST.)

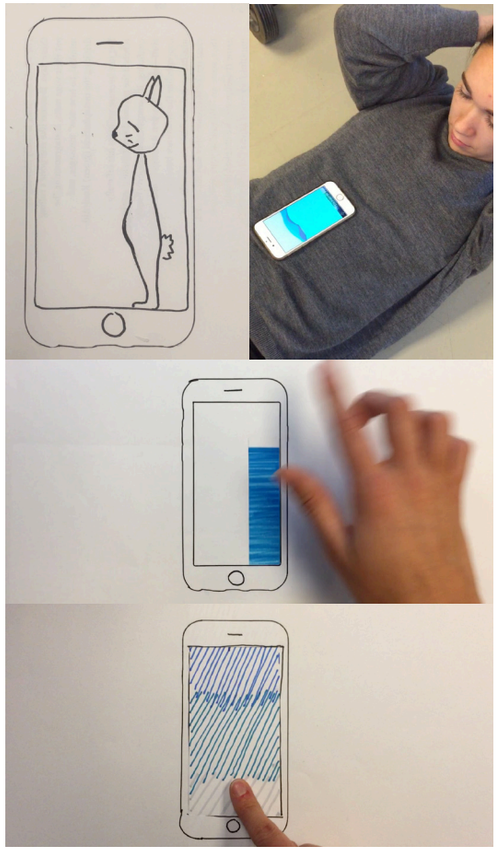
We used paper prototyping and video sketching to quickly visualize and explore the different ideas according to the three directions:



Visual experience

"See the way you should breathe"

The direction was based primarily on having a visual experience in order to understand and follow the correct breathing pattern. It was all about creating repetitive, metaphorical animations in order to understand and synchronize. This direction had many good qualities, but also was a bit weak. We discovered that focussing your attention on something visual without interacting was too shallow an experience to avoid distractions.

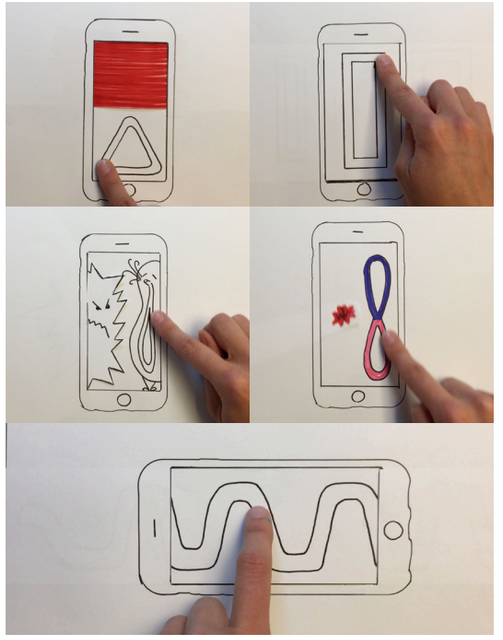


Sensorial experience

"Feel the way you should breathe"

This direction was about having a physical interaction with the correct rhythm of the breathing pattern, based on a physical movement where you actively follow something with the body that leads you to do the movement in the right rhythm.
We discovered here that there was a form of "forced" effect of this method. Focusing on following something physically would make it easier to pay attention to the specific action you are performing, which makes it easier to connect the breathing with the rhythm and not get distracted.

We found this similar to interactive mindfulness-meditation and later it became an important factor in the final proposal.

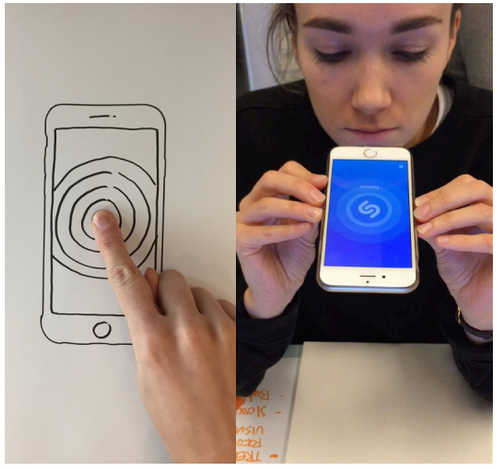


Synchronized experience

"See how you breath and compare it to how you should breathe"

This direction was primarily about seeing how you breathe, together with how you should breathe. We thought that visually seeing both your own breathing and how you should be breathing could make it easier to adjust your breathing to the correct way.
Using sensors, we could measure pulse and breath in order to connect the user's breathing with the recommended rhythm. However, it is difficult to accurately measure one's breathing with a phone in a way that is discrete and does not draw attention to the user.

That is why this direction became something we chose not to focus on quite early in the process.

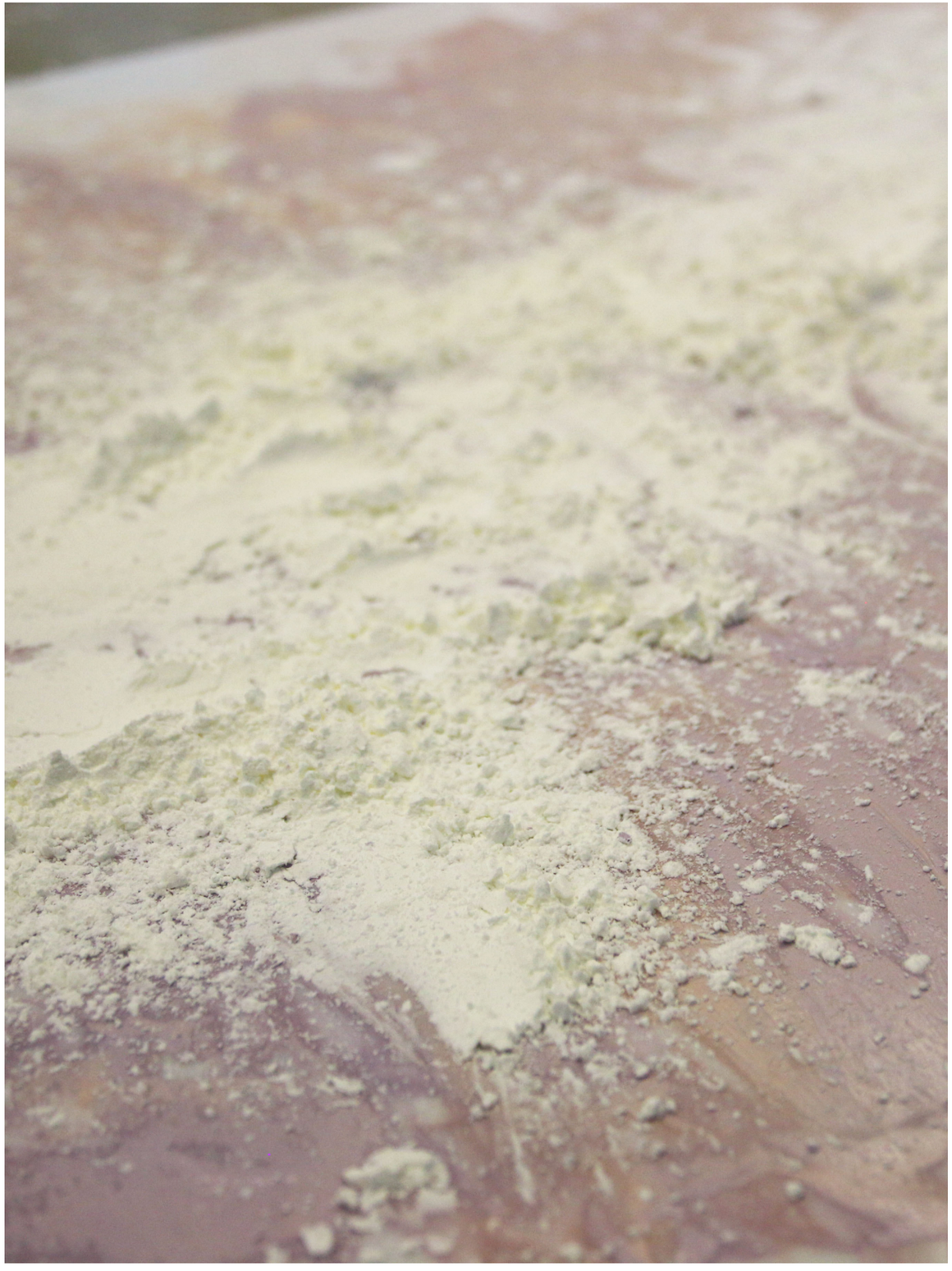


Experimentation

We have also taken an explorative approach where we look into how to mimic real, physical sensations in a digital interface, while applying mindfulness throughout our process.

Trends such as “make your own slime” and “sandy-clay”, have lately emerged in social media. These trends are about playing with a fascinating material without purpose. We looked into this phenomenon because we found it interesting that something so simple can be so engaging. What makes it so fascinating that people can play with it for hours? It emerged from various articles that in today’s screen-based world, we lack tactile stimuli, and that may be the trigger for it.

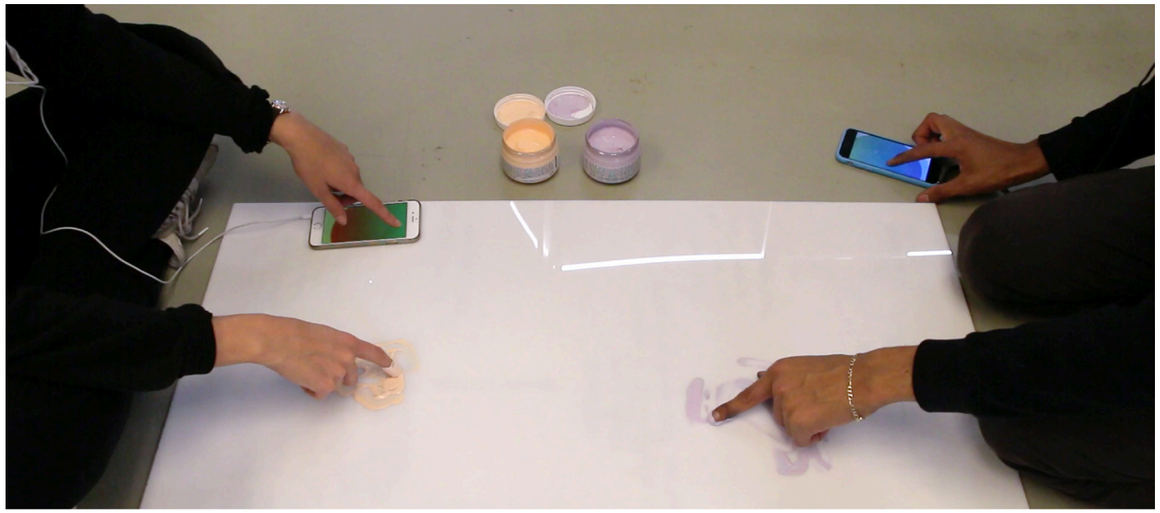
In order to explore this, we collected different physical objects made for this purpose and others, such as: fidget spinner and other fidget toys, paint, powder, sandy clay, and massage tools to have on the desk while we work. We discovered that we often used many of these objects when we were worried, bored, stuck or stressed in different phases of the process of our project. It seemed like engaging the body helped us focus, just like in mindfulness-meditation. The only difference is that in mindfulness-meditation, you are aware of what you are doing while you are doing it.

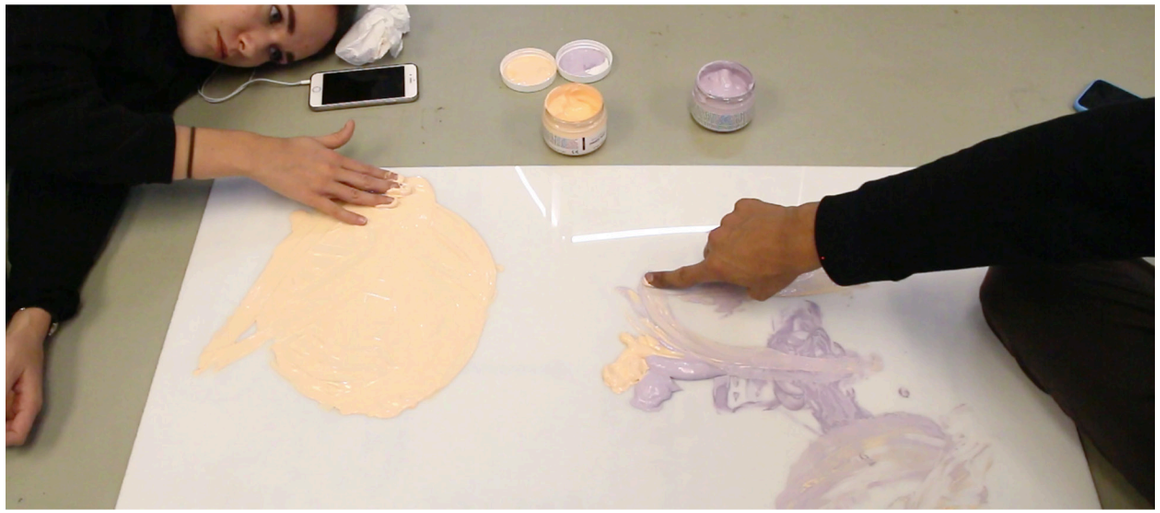


It is known that the diploma project is a demanding and stressful semester at AHO. We tried to use the fact that we were in the middle of our diploma semester as a method for exploration. We have worked on how to prevent stress and possibly anxious experiences by using good planning and a structured work approach. At the same time, as we read and learned more about CBT, mindfulness-meditation and mentalization, we became increasingly aware of our own thoughts, bodies, and reactions throughout the project.

We also tested the difference between moving a finger around on a screen and moving it around in a liquid material (paint) while listening to music. We ended up shutting off our screens and were completely absorbed in the finger painting.

Music often appeared as an important element in self-regulation. Relaxing music often has a calming effect and can have an influence on the body, and it can also help shut out distractions. We have added music as an opportunity in our solution, but this has not been one of our focus areas.





5

In this chapter we will elaborate on the chosen direction and the development and exploration of a concept.

Design

The concept development

Framework CBT + MM

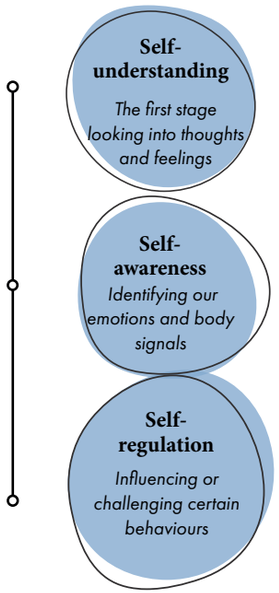
MM = Mindfulness - meditation

After the exploratory part of the project, we saw that all our ideas were too weak to work individually. To address this weakness, we looked back at our requirements and into cognitive behavioral therapy. This helped us develop a framework combining both mindfulness-meditation and CBT, to be integrated as a support treatment in the therapy context.

CBT focuses on the development of personal coping strategies by first looking into the thoughts and feelings of the patient, then helping to identify negative emotions and lastly, influencing or challenging certain behaviours and patterns. This is a well-known treatment method that has proven efficacy and therefore it is seen as a trustworthy treatment by people who work in the mental health field.

Kristin Lie Romm, a psychiatrist at Universitetssykehus HF - Ullevål suggested that applying CBT principles would strengthen our ideas and increase the potential for health professionals to see greater value in our proposals.

The framework is built on CBT principles as it follows:



We saw the potential to sort and place our ideas into this framework, as each of the ideas adhered to different CBT principles.

Self-understanding

This is primarily about understanding how thoughts and feelings affect the body. The ideas we put into this category are primarily about visualising the invisible world inside our heads and explaining how it works through visualizations and interactive activities based on metaphors. An example of this is about how we humans tend to chase our thoughts and feelings, instead of observing them.

Self-awereness

It is about reconnecting the mind back to the body, through the ability to recognize signals and being aware of how the body reacts to certain situations. Ideas in this category were based on visualizing how the body responds, for example, when you get an anxiety attack and why this happens.

Self-regulation

Regulation is about the development of coping strategies. In this category, the ideas were based on how to use breathing and mindfulness-meditation techniques to cope with different situations. This was about being able to practice techniques to calm down in order to think rationally. This became the concept where interactive mindfulness-meditation principles had great potential to be applied.

FLF

UNDERSTANDING

your thoughts and feelings affect your body.
the benefits of breathing.

SELF

AWARENESS

(Identify.)
Being Aware of how the body reacts to certain situations
reactions. and how can we influence them.

SELF

REGULATIO

Developing a strategy and build

Find your own pace

Finding your own way to do it.

BREADING

AUTONOMOUS
AND YOU CAN
CONTROL IT
V
LARGE POTENTIAL

Reconnecting
THE MIND AND
THE BODY.

REACTING TO
"DANGER."

STRESS
↓
STAYS IN ARMS AND LEGS.
↓
BREATH BECC
SUPERFICIAL
↓
SYMPATHIC NERVO
SYSTEM
ACTIVATE
STRESS HORMONES ARE PUMPED OUT
FROM ARM & LEGS IN TO INTERNAL ORGANS

BREATHING
↓
ACTIVATES
↓
PARASYMPATHIC
NERVOUS SYSTEM
THE PART OF THE NERVOUS SYSTEM THAT CALMS US DOWN.
STRESS HORMONES STOP SENDING OUT,
IMMUNE SYSTEM TURNS ON,
BLOOD PRESSURE LOWERS,
DIGESTION ACTIVATES,
LYMPH DRAINAGE AND
BLOOD FLOW INCREASE
WE BECOME
CALM AND RELAXED

ANXIETY
DEPRESSION

Focus attention.

NG TO STOP
HOUGHTS

AUTOMATIC

RHYTHM.

Tidal Rate.
How deep

BELLY

BELLY BREATHING

RHYTHM.

1 2 3 4

LEVELS

SYNC.
RHYTHM

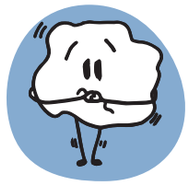
Choosing direction

As we were working towards a digital solution to support the therapy, we built our first concept around the CBT principles and tried to adapt the entire framework into a digital touchpoint.

We made a simple explanatory sketch-map of this application and its context of use, and invited four external designers with knowledge in interaction design and some experience with stress and anxiety for a workshop. We went through the concept, the different parts of the framework and the specific ideas within the different parts.

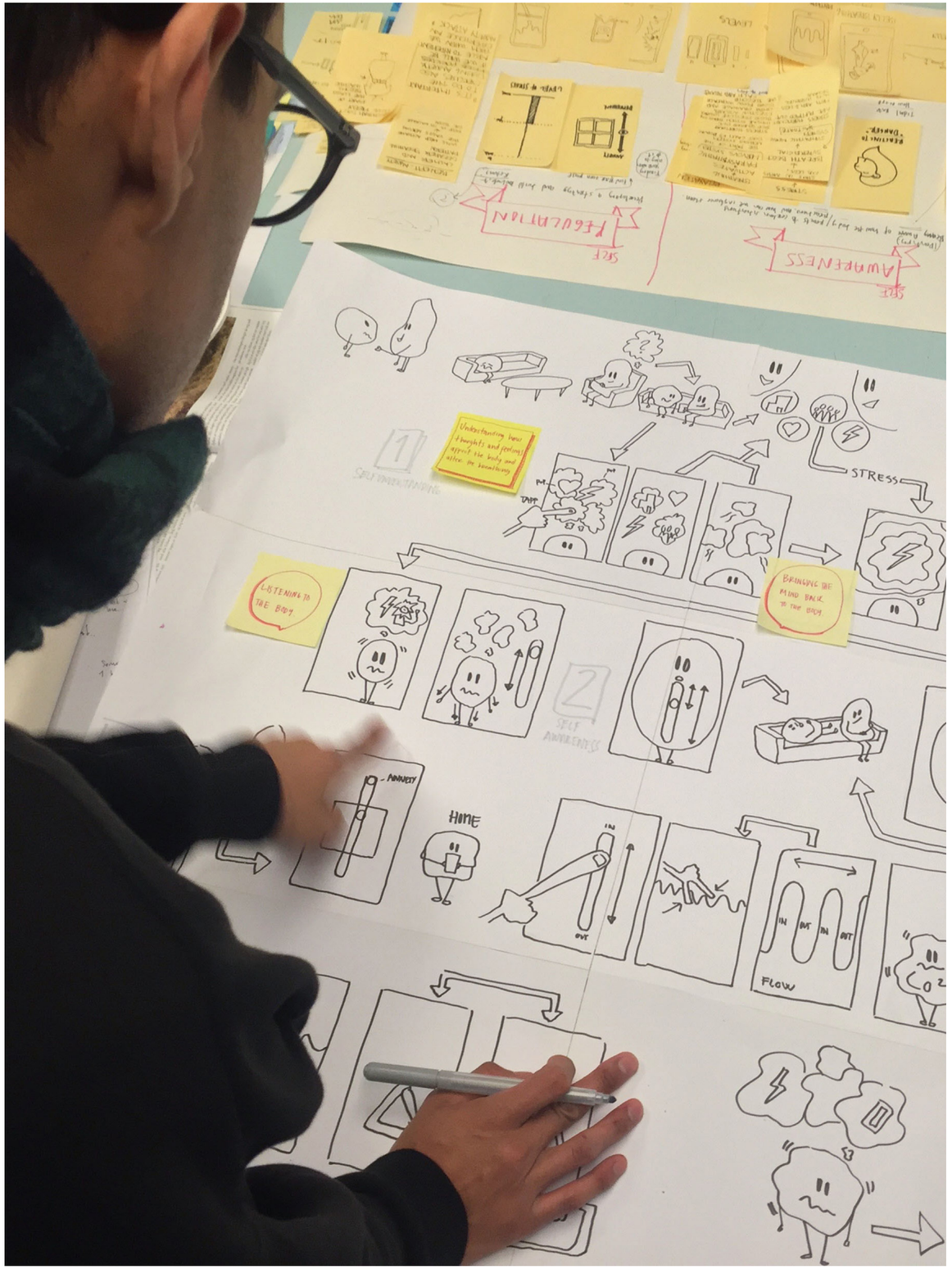
The first thing we found out was that we tried to add too much content into the digital touchpoint.

Self-understanding



Self-awereness

Self-regulation



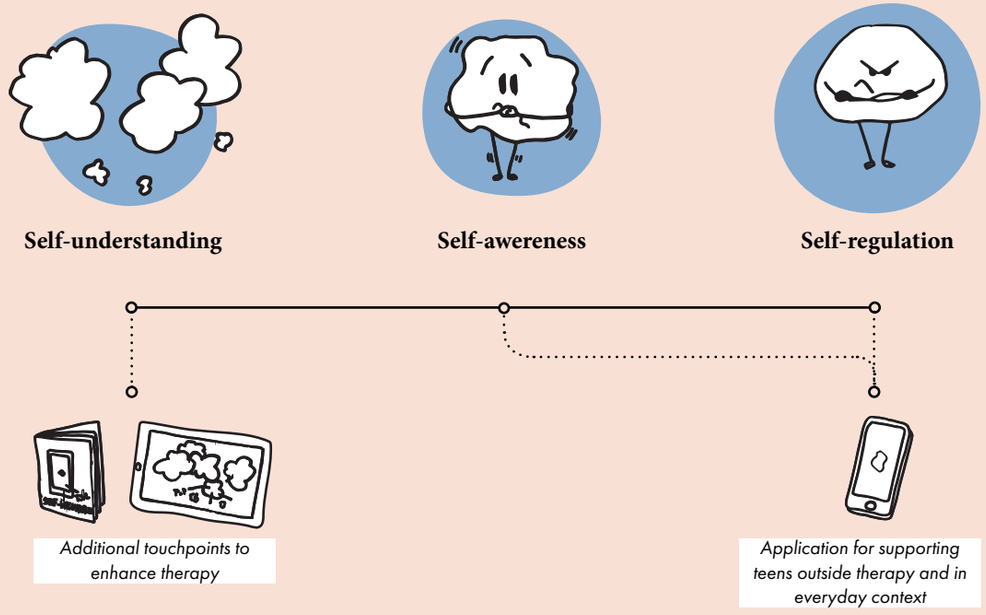
The app-trap

Early in the project, our collaborator MD Charlotte Lunde stated the need for tools to support the therapy treatment and suggested a digital interface as a solution to cover those needs. We wanted to investigate whether an application was actually the right solution for this need.

As mentioned in the research phase, we found many positive reasons for why an application could be an excellent channel for this purpose and specifically, to connect with our target group. One of the biggest weaknesses we found in existing apps was that they are too complex and try to cover too much content.

We called this the “app trap” as a way to remind ourselves of the path we should avoid.

We discovered that our first concept was heading towards the app trap; it was too complex and covered too much content. However, this first concept allowed us to see all the content at once, and made it easier to split it into different touchpoints with different functions.



Additional touchpoints to enhance therapy

Application for supporting teens outside therapy and in everyday context

We found that it was more appropriate to have an application for teenagers as a practice and supportive tool when experiencing stressful situation while in the self awareness and self regulation phases in the framework. In order to use this application, there is a need to understand how things work and why it is important to train self regulation.

For this reason, we defined additional touch points to support self-understanding. These additional touchpoints are meant to be conversational tools in therapy and therefore, its main user would be the therapist at the clinic.

We chose to focus on further developing and exploring the teenager’s application, as we saw a bigger need for a tool to provide support outside therapy.

Through feedback sessions with different psychiatrists, we discussed the value of this application and the development of additional touchpoints to enhance the therapy. Together, we defined a psychoeducational touchpoint, a conversational tool to help therapists to explain how the mind and the body are connected to each other. Even though this psychoeducational tool has great potential, we agreed that our main focus should remain on the development of the teenager’s application, and worked out the additional touchpoint in a more conceptual way.

Core touchpoint

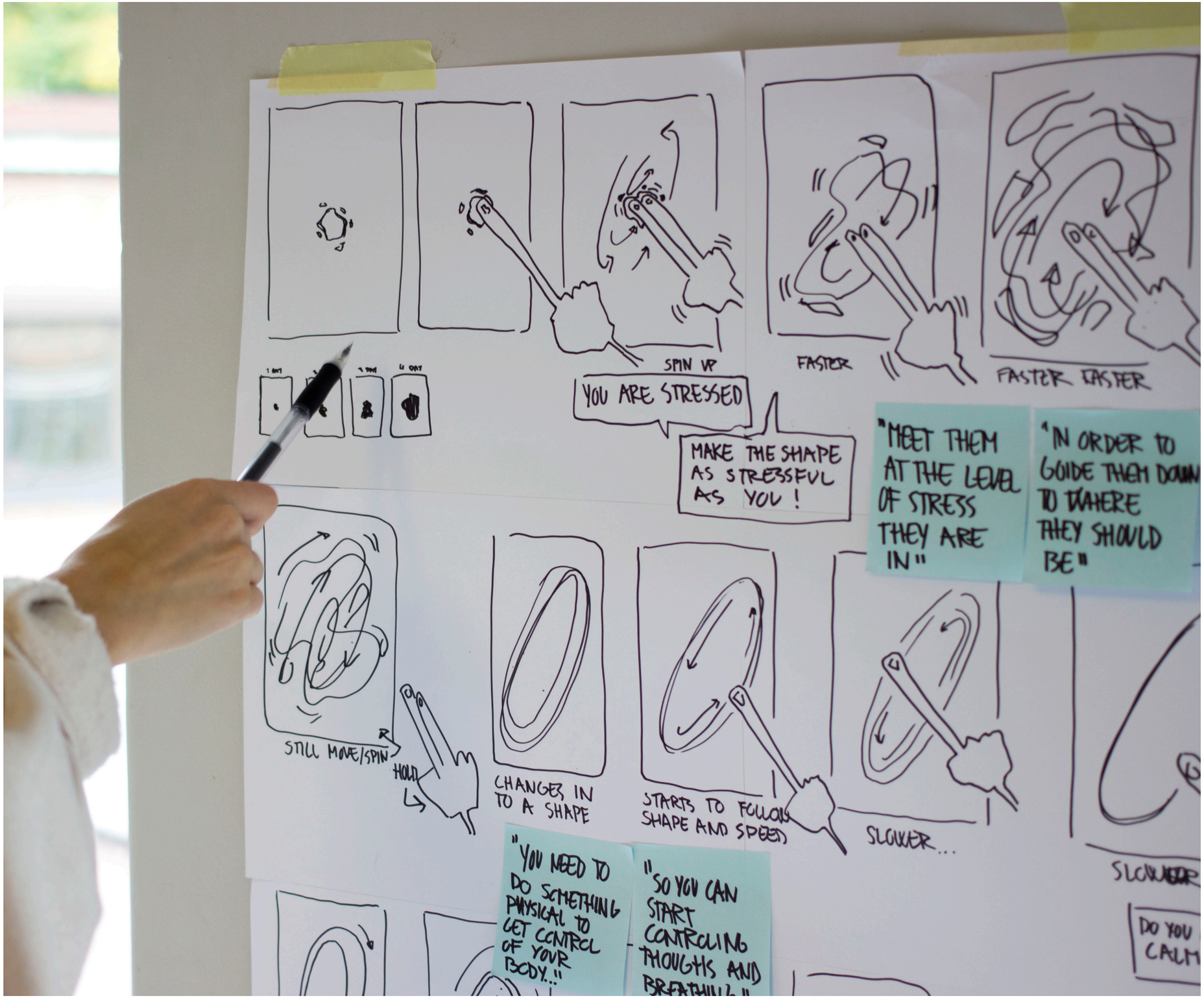
Level of stress

Meet the teenager in the level of stress they are in...

When you are in a stressed situation and trying to calm down, it is important that you start from your own starting point instead of an already calm starting point.

When synchronizing the feeling of being stressed with the exercise itself, and then slowing down the speed gradually, there can be a forced effect to calm down. This was based on experiences from participants of the workshop and people we talked to earlier in the process.

A metaphor came out of the workshop on how disturbed or "messed up" liquid fluid will naturally calm down; this metaphor became an important part of exploration into the final solution.



The interaction

Exploring the movement

The first area was a visual and movement exploration, where we looked into ways of "messing up" or disturbing something that will naturally come back to its original state after a while. We used different liquid things like mixing materials, mixing colors, textures and density to test the idea.

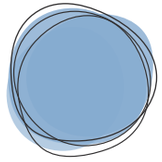
We saw potential in performing a stressed movement to reflect your feelings and explain to the application that you feel stressed. We also saw potential in making a stressed movement to let the stress go for a moment. We quickly discovered that there was potential in how the liquid slowly calmed down in a naturally way, and that this had a calming effect.

This liquid exploration combined with interactive mindfulness-mediation principles led us to a new framework for how the actual calm down process should be built in the application.

1.

Stress up

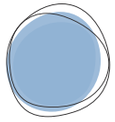
Action, fast movement
"mess up"- reflecting stress



2.

Synchronize

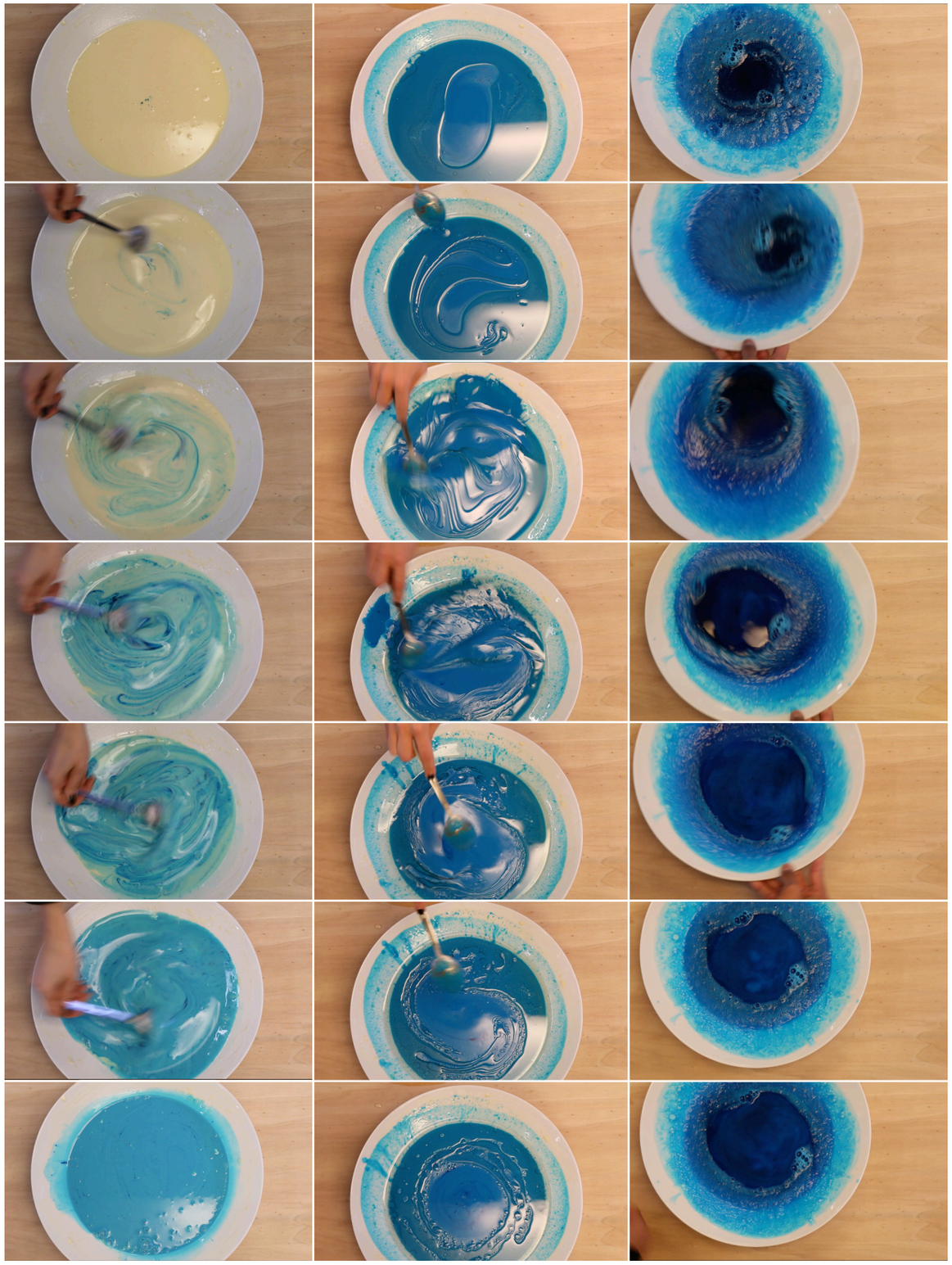
Follow the natural movement in order to synchronize with it, a forced effect



3.

Calm down

Slowly back to starting point, a calming effect

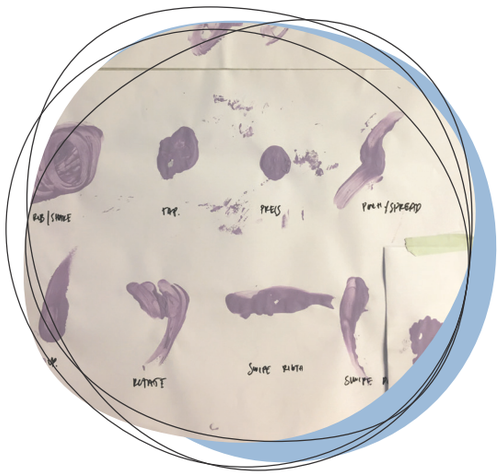


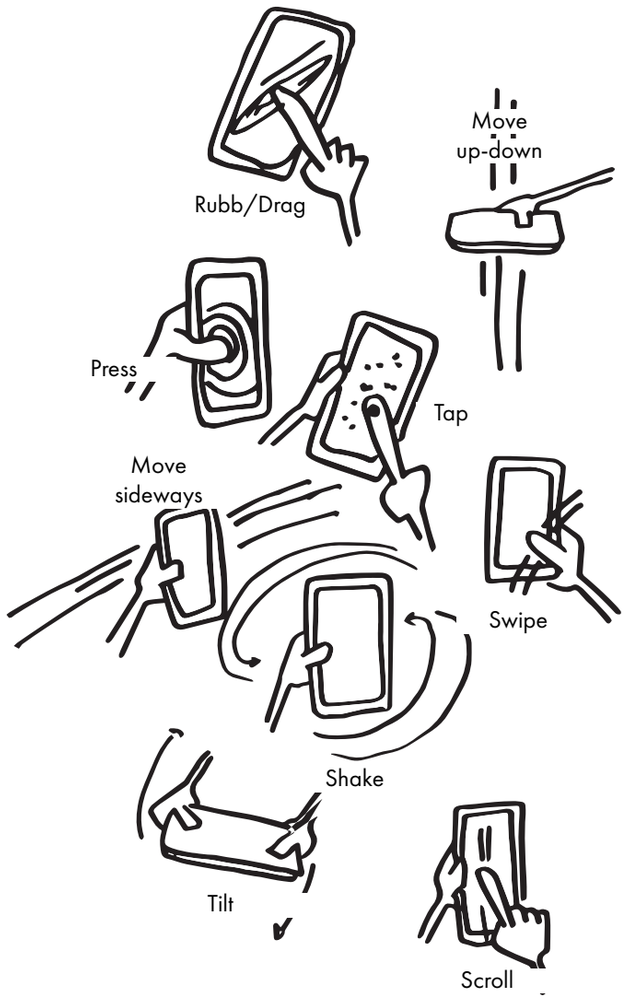
1.

Stress up

We did a further exploration of how this stress movement should be. We tested various potential ways to stress things up like shaking, big movements, tapping, spinning up, pushing, etc.

We saw that there had to be a quick movement, and also an abnormal movement to do on a screen. But at the same time it could not be so abnormal movement to draw other people's attention when performing the action.





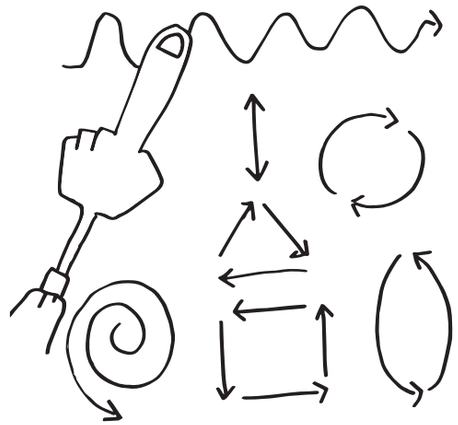
2.

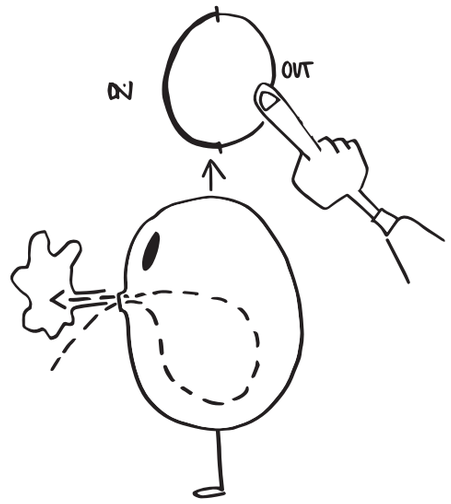
Synchronize

In the research phase where we explored mindfulness-meditation, we discovered some methods to use as the anchor of attention in order to not chase impulses. We chose to combine some of these methods with interactive mindfulness-meditation to anchor people's attentions to the muscle activity of the interactive action.

We took inspiration from exercises we heard about from a person who works with teenagers at a children's home. In order to calm teenagers down, they often used exercises where you draw a pattern in the air with your arm, and follow this pattern with your breathing. We started to look at different patterns that could give a repetitive movement that was not too complex or cognitively demanding. The repetitive movement helps to focus on something specific.

We tested out different patterns: waves, directions, circles, squares, triangles, spiral. In yoga and meditation they often use a circular mindset for breathing, where the breathing cycle should be coherent and continuous. Our concept was also meant to be connected to breathing, so we decided to proceed with the circular motion.





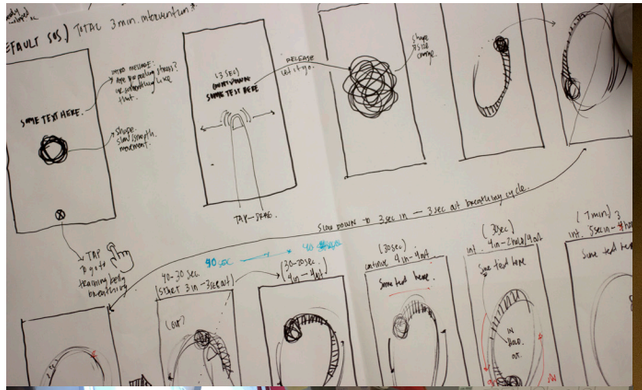
3.

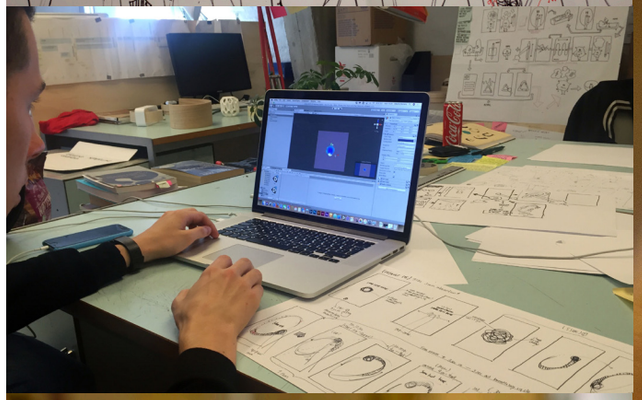
Calm down

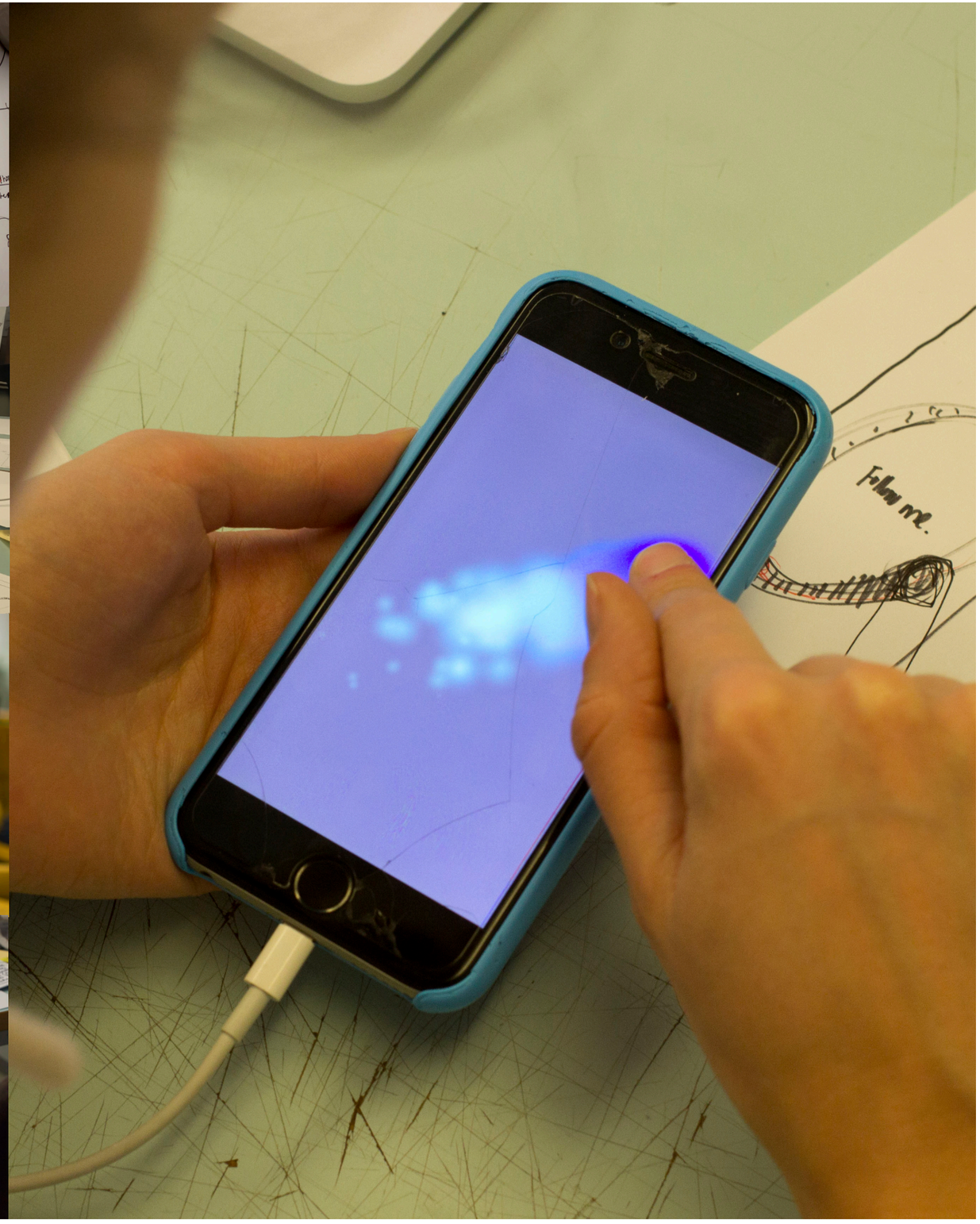
Research has shown that a combination of slow breath rate and deep breath tidal has relaxing effect on the body and can be used as pain relief. A deep breath tidal, often called belly breathing, and the right slow-rhythm can help to trigger the relaxation effect in the body.

We have based the length and frequency of breathing on recommended breathing exercises used in yoga and meditation. In this case it starts with breathing in for three seconds and breathing out for three seconds, as a first stage. Later it gradually slows down to four seconds in and out, and it ends with five seconds in and out.

To test this out, we had a collaboration with a student from Westerdals with experience in game software engines, in order to code a functional prototype that we could use as a discussion and test with different people. Through this prototype, we saw that the gradual change from start to slow had a forced-calming effect.







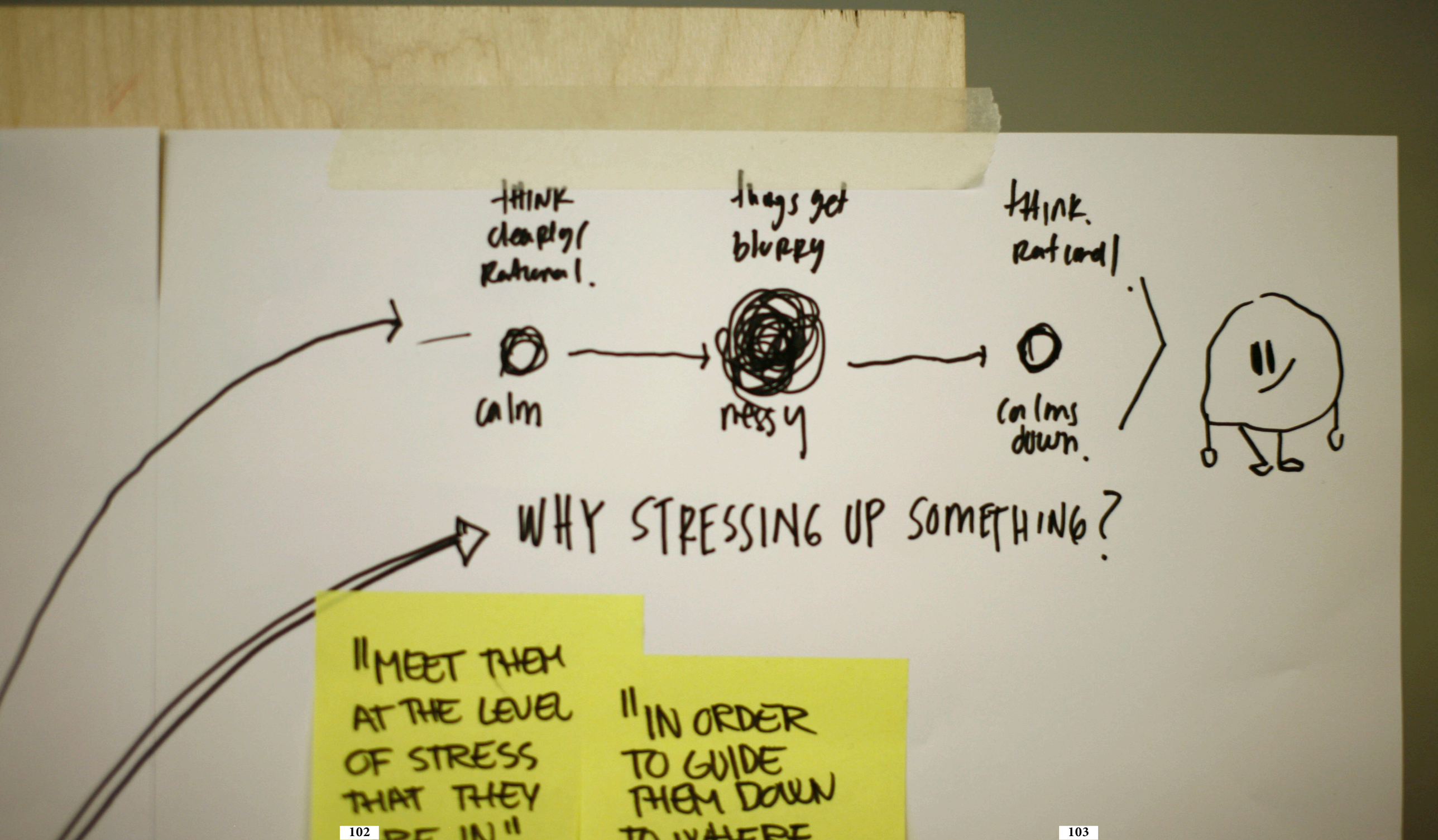
The visuals

Exploration

Functionality is very important but the visuals also have a pivotal role in the restorative process.

When we played with liquid and paint, we saw how interesting the movements in the different materials looked, how the colors blended together and the material oil and other liquids worked together. We also noticed how the visuals impact what associations you make, as we wanted the user to get an association to breathing.

We found existing visual expressions to test what expression was desired by users. In many breathing exercises, you are advised to visualize your breath as it moves into your body, down to your stomach, and out again. Instead of the central application visual being based on a shape or object that you "messed up", we wanted to build on the association that the visual was your embodied breath, and that the breath is a moving thing that happens automatically but that we also have the ability to influence if we want to. Therefore we made a metaphorical visual we call a "blubb". We based a character on this, which we later chose to name "miin".


THINK clearly/ Rational.
things get blurry
THINK. Rational
calm
messy
calms down.
WHY STRESSING UP SOMETHING?
"MEET THEM AT THE LEVEL OF STRESS THAT THEY ARE IN"
"IN ORDER TO GUIDE THEM DOWN TO WHERE

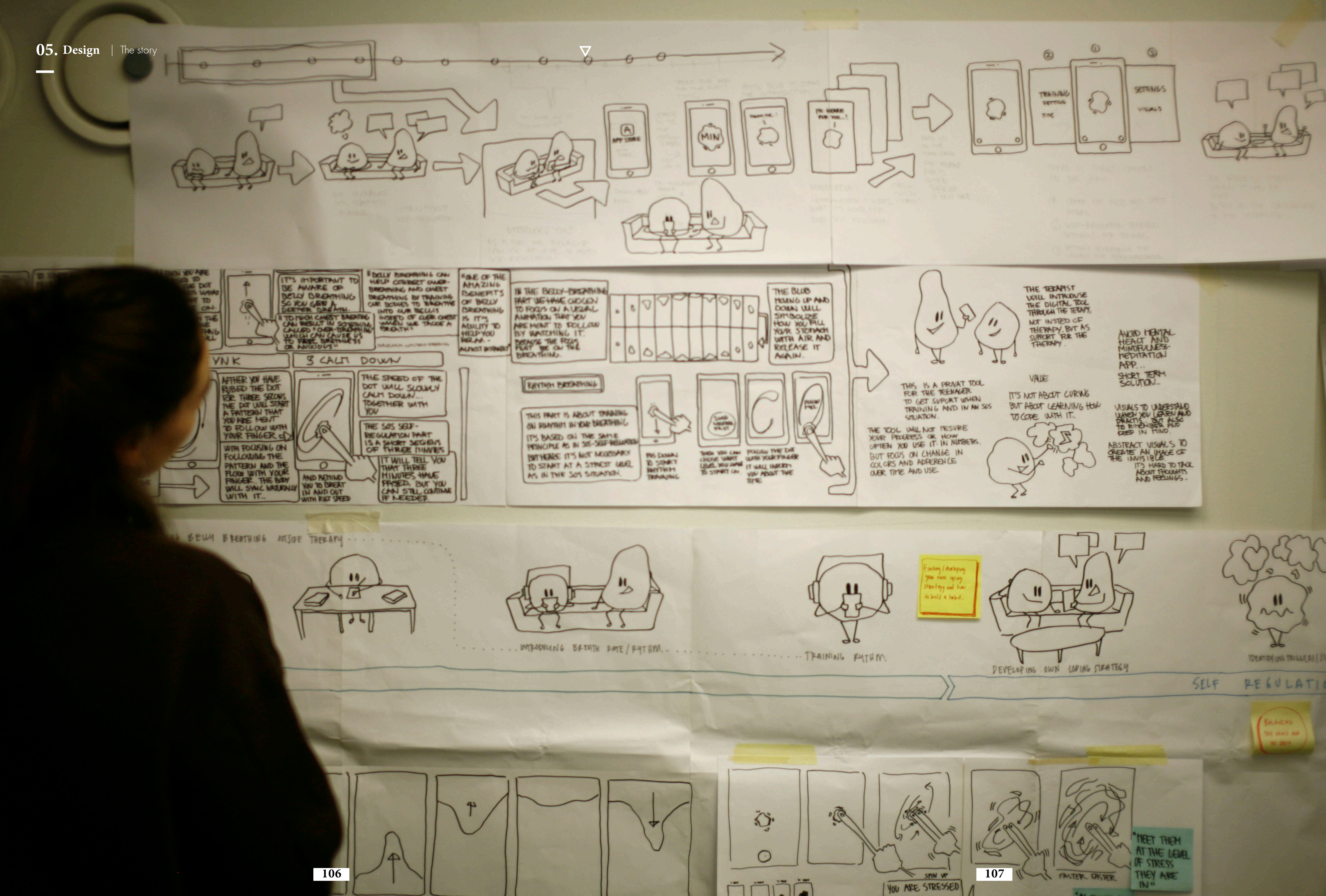
The story

User journeys & contexts

When building the story, we had several meetings with different experts where we used storytelling to present a journey, discuss, get feedback and iterate.

We used this user journey to determine where to place the different touchpoints along the process. This helped us place the concept in different contexts and discuss it with the experts.

It was important for us to look at the different situations where the application was in use in order to meet different needs: during onboarding, in daily use, and in situations of distress.


APP STORE
MIN
TRAINING
SETTINGS
3 CALM DOWN
THE BLOB MOVING UP AND DOWN WILL SYMBOLIZE HOW YOU FILL YOUR STOMACH WITH AIR AND RELEASE IT AGAIN.
RYTHM BREATHING
THE TERAPIST WILL INTRODUSE THE DIGITAL TOOL THROUGH THE TERAPY, NOT INSTED OF THERAPY, BUT AS SUPPORT FOR THE THERAPY
AVOID MENTAL HEALT AND MINDFULNESS MEDITATION APP. SHORT TERM SOLUTION.
VALUE
IT'S NOT ABOUT CURING BUT ABOUT LEARNING HOW TO COPE WITH IT.
TRAINING RYTHM.
DEVELOPING OWN COPING STRATEGY
YOU ARE STRESSED
FASTER FASTER
"MEET THEM AT THE LEVEL OF STRESS THEY ARE IN"

The structure

Application for teenagers

There are two main functions in the application that are the most important: the calm down mode and the practice mode. Since the calm down section had to be easily accessible for the teenager when in a stressed situation this became the main screen.

The practice mode is something that the teenagers are supposed to use when training self-regulation. The teenager is not stressed and can set preferences for duration and rhythm. This is in a completely different context and starting point than the calm down mode, where the teenager is stressed and needs to calm down.

We also saw a need to personalize the application. As it was the colors that made the biggest difference when we tested the visuals on the teenagers, we saw an opportunity to change the colors themselves in the application.

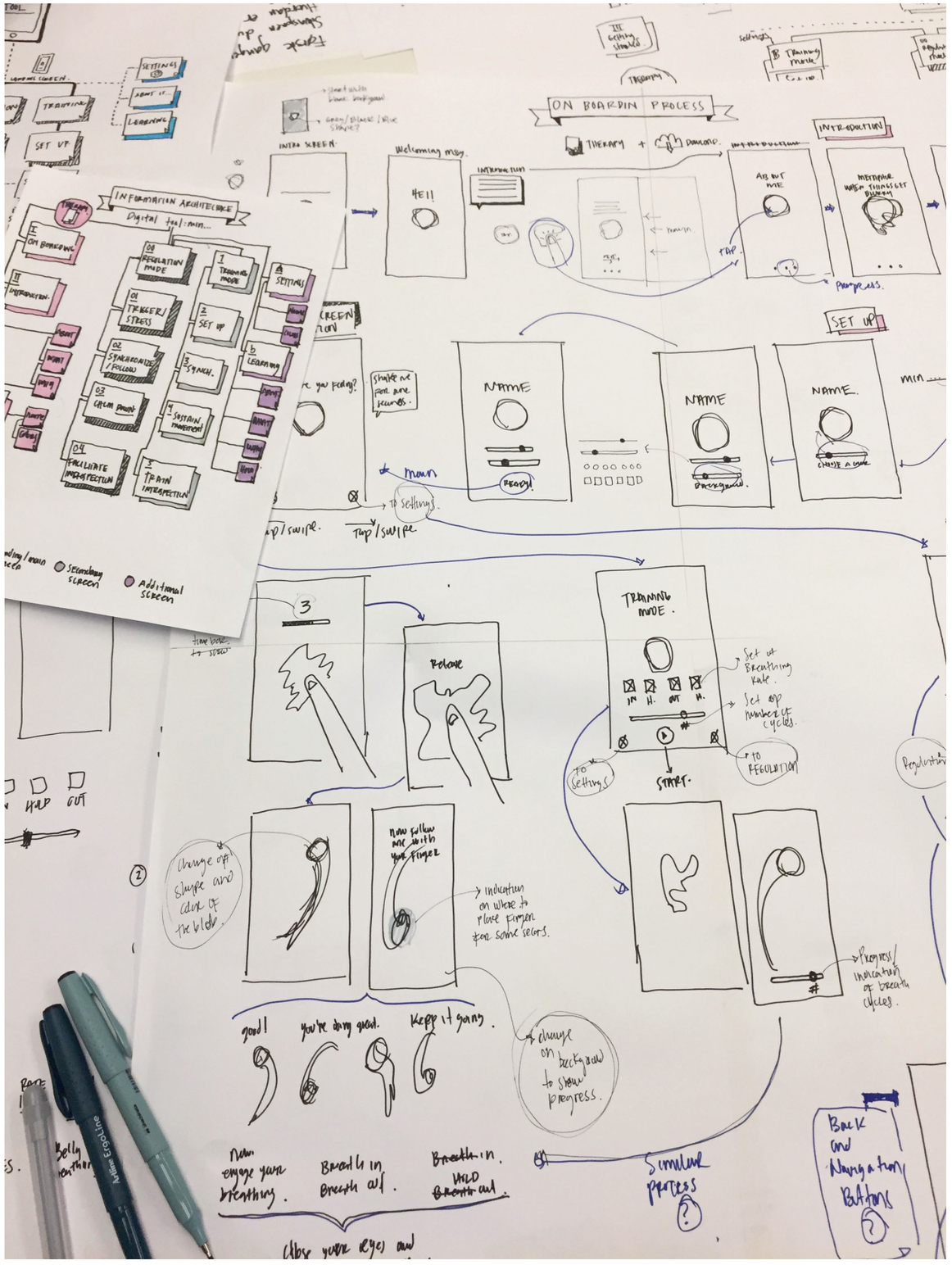
We did some research on what applications teenagers are using today. We got inspired by the popular application, Snapchat. We found it interesting how users can switch between different filters and how this changes the overall experience of the situation in the image. We found a parallel to how we wanted to switch between the practicing and calm down modes, as the difference between them is the context of use. However, we focused strongly on the interaction /functional side of the application, and place the actual navigation on a secondary level.

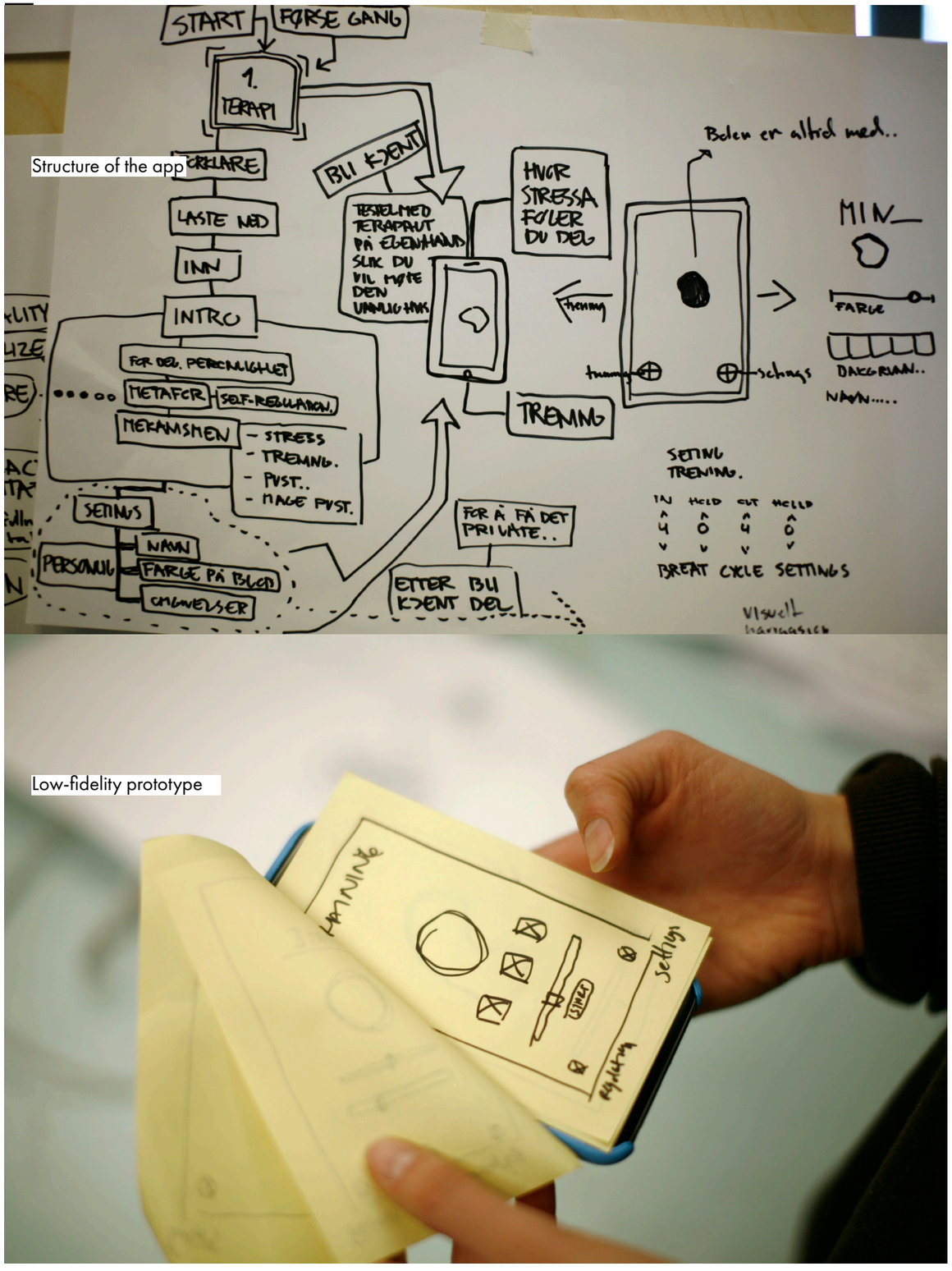
On boarding

Core function

Secondary function

Additional function





Structure of the app

Low-fidelity prototype

Iterations on navigation

Iterations on settings

Iterations on colors

Hi-fidelity wireframes

6

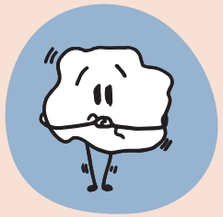
As a summary of the previous chapters, we will now present an overview of the users needs. We will elaborate on how we developed a brand strategy and service guidelines in order to deliver a desired service experience.

Synthesize

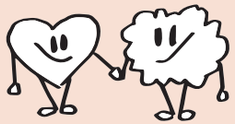
Service experience guidelines

*Summary of users needs map

Summary of needs

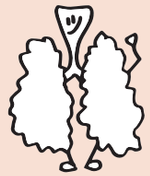


Target group



Understanding

Understand how their thoughts and feelings have an impact on their body. Learn about the invisible world of the mind.

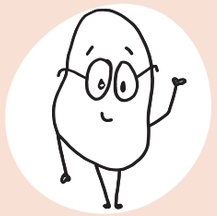


Awereness

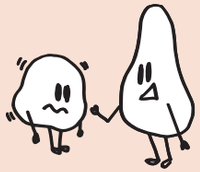
Reconnect the mind back to the body by developing the ability to recognize signals and understand how the body reacts to certain situations.

Regulation

Develop personal coping strategies by practicing techniques to calm down. Have support when experiencing a stressful or anxious situation.

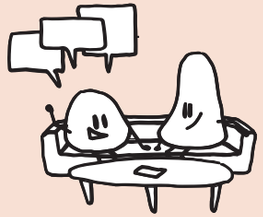


Therapists at BUP



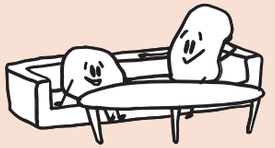
Build trust

Build trust between teenager and therapist.



Facilitate dialogue

Facilitate dialogue during therapy. Help therapists be in tune with the patient



Enhance therapy

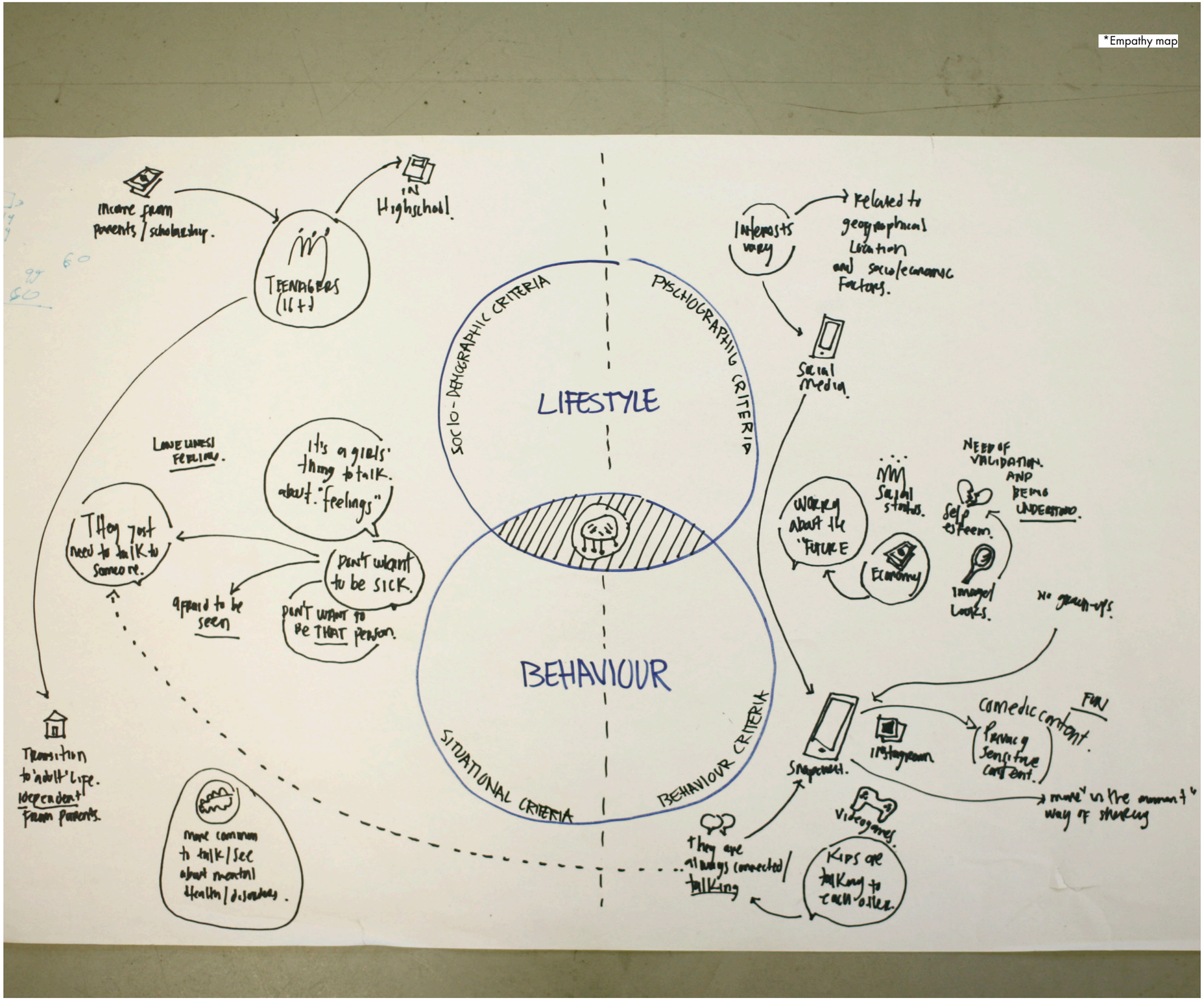
Enhance therapy by helping teenagers understand their mind and reconnect with their body.
-Provide supporting tools for use outside of therapy.

Brand strategy

When designing the interactions between the service and the users, we needed to define a strategy for how the service should be communicated to and recognized by the users.

In order to do this, we conducted research to get a deeper understanding of our target group and the way they behave. We created an empathy map presented on the right, where we placed socio-demographic/psychographic criteria regarding their lifestyle, and situational/behavioral criterias representing their behavior.

In addition, we looked into common channels used by our target group in order to develop an identity that would be appealing for them.



PLAYFULNESS

HOW DO YOU SNAP ?

"CLEAN & NICE"

PAUSE

PRETENTIOUS

DESTROY/ DISTURB.

ORGANIC/ UNCONTROLLED "FREE"

MESSY

The service experience

In order to address the needs of different users and provide a coherent experience across touchpoints, we referred to the theoretical framework of "The Brand Experience Manual" (Motta-Filho,M. 2012), and developed a set of guidelines for the desired service interaction.

The Brand Experience Manual is a tool to communicate the Brand Experience Proposition to the teams responsible for the development of new service offerings.

Brand Experience Proposition is defined as the experiences the organization wants the customer to have.

The service guidelines consist of a service personality, personality traits and service principles.

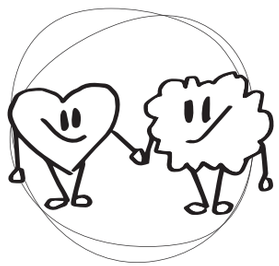
Service personality

The service personality expresses who the service is and its relationship with the users. It expresses whom the user will be interacting with and it is presented as a set of traits.

Who is Wandering Mind?

Wandering Mind is that "internet-friend" teens meet on a social media channel. It understands what teenagers are going through as it is experiencing or has experienced the same things. Wandering Mind is there to support teens and listen to them when they need it. It can guide and give advice, but it will never tell teens what to do.

Wandering Mind is a non-judgemental friend teenagers can trust and confide in.



Personality traits

Wandering Mind has some characteristics that make it interact and behave with others in a particular way. It is trustworthy, supportive, empathetic and jovial.

Trustworthy

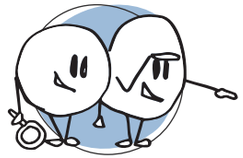
Supportive

Empathetic

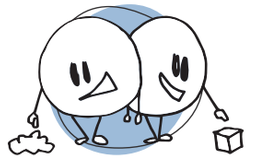
Jovial

Service guidelines

The service principles are guidelines meant to inform service providers on how they can embed Wandering Mind into the development of new or existing services. The objective of these principles is to outline what has to be done in order to move from the current to the desired experience.



1. Explore rather than examine



2. Personalized rather than standardized

3. Focus on the journey rather than the destination

7

In this section, we will present our service proposal and outline why it exists, what it offers, and how it works. Our proposal is not a final solution; rather, it is an example of how our findings and guidelines could be realized as a service offering.

Deliver

Design proposal

Wandering Mind

Vision

Wandering Mind is a service that aims to help teenagers (age 16+) develop coping strategies for stress and anxiety through a self regulation program and interactive mindfulness-meditation.

The aim of the program is to make the process of managing stressful and anxious situations more manageable, with the main focus of facilitating the journey towards self acceptance. The program utilizes cognitive behavioural therapy principles to provide teenagers the information to understand their own thoughts, feelings and body reactions, monitor and build awareness of their own state and regulate their emotions when experiencing some distress.

Wandering mind aims to be an additional service to the therapy treatment at Nic Waals Institutt, with the possibility to scale to other contexts (e.g. the school system) as a primary low-threshold service.

Wandering Mind

For teenagers

Wandering Mind is a health-management service with a mission to provide teenagers the knowledge and tools to manage their own mental health. Its main offering, Miin, is a personal companion that helps them wherever and whenever.

Miin is a close friend that is always there to listen and support teenagers without judgement. It is a friend they can trust and reach out to when feeling stressed or anxious and need to calm down.

Miin provides a soothing visual experience to help teenagers reconnect with their bodies instead of getting caught up in negative thoughts. It reminds them about regulating their breathing and guides them to eventually regain control of their minds.

Miin can be very helpful but Miin knows that in order to truly have an effect, it has to be combined with the knowledge obtained in therapy and regular practice exercises.

Wandering Mind

For therapists

Wandering Mind is an addition to current therapy treatments; it aims to provide therapists at BUP with resources to build trust, facilitate dialogue and enhance their relationship with their patients.

Wandering Mind aims to reframe how the existing service at BUP is offered by providing guidelines and principles to help therapists deliver an optimal experience throughout the process.

Additionally, the service also suggests an interactive psychoeducational tool to help therapist visualise and explain how the invisible world of our minds work.

Service identity

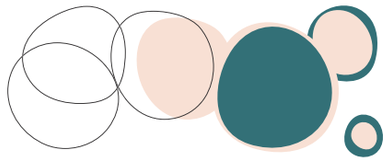
How the service is communicated

"To be kind to our wandering mind" is one of the core principles of the mindfulness-meditation practice.
This practice aims to recognize when our mind gets carried away in thoughts and wanders. It encourages the user to be in the present moment and deliberately and nonjudgementally pay attention to his or her own thoughts.

The name "Wandering Mind" acknowledges the natural behaviour of the mind and focuses on cultivating self-awareness and positive thinking patterns and attitudes towards oneself.

Through the service's visuals and tone, we aimed to communicate an empathetic and compassionate feeling across all touchpoints.

Shapes



Logo

Typhography

Titles & subtitles **Minion pro bold**

Body Futura PT book

Details Futura PT light

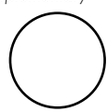
Colors

Background & text

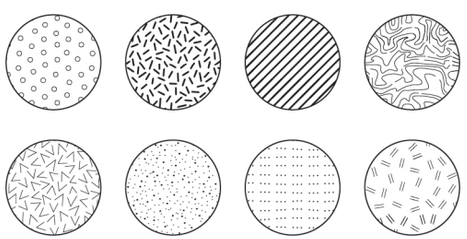
Main colors

Additional colors

Supplementary



Patterns



Identity for miin

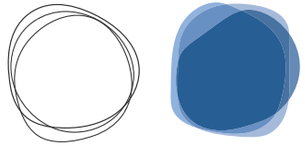
We saw a need to create an identity for the digital touchpoint for teenagers, since it is meant to be used as a personal companion for teenagers.

The identity is based on a metaphor that when you are stressed, things get unclear and you cannot think rationally; but if you take a moment and focus on your breath, it will help you calm down, things will get clearer and it is easier to think rationally.

The name comes from the creation of a character in the application: an abstract “blubb” that is meant to visualize the teenager’s own breath. This way, we played with the words “pusten min”(norwegian of “my breath”), in order to create a stronger association with the breath.

We named it Miin: a companion that provides teenagers support outside therapy when they need to calm down.

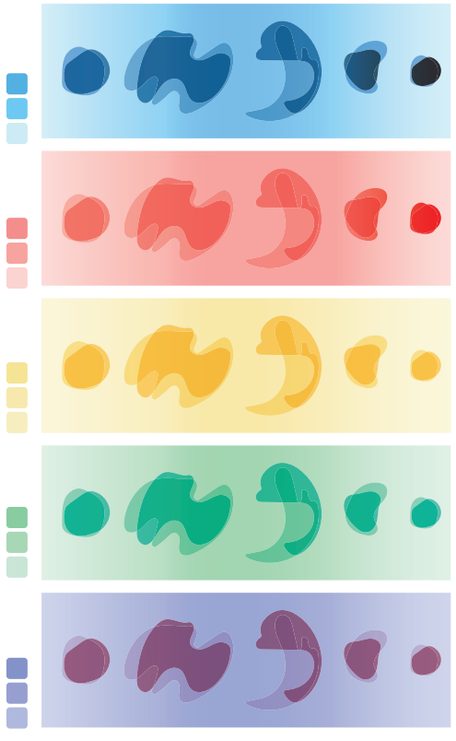
Shapes



Logo

Icon app

Colors

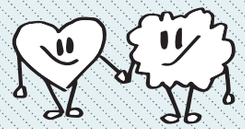


Primary user — Secondary user — Conceptual deliverable — Main deliverable

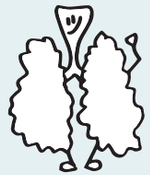
*Offerings map

In therapy context

Outside therapy



Understanding



Awereness

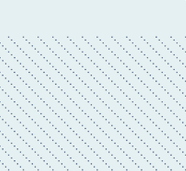
Regulation

Needs

Core offerings

Introduction guide to Wandering Mind

Miin Self-regulation touchpoint



Additional offerings

Psychoeducational touchpoint

Actors

Therapists at BUP

Teenagers

Miin

Self-regulation touchpoint

What's the aim of the offering.

The core offering aims to help teenagers calm down and self-regulate when experiencing a stressful situation.

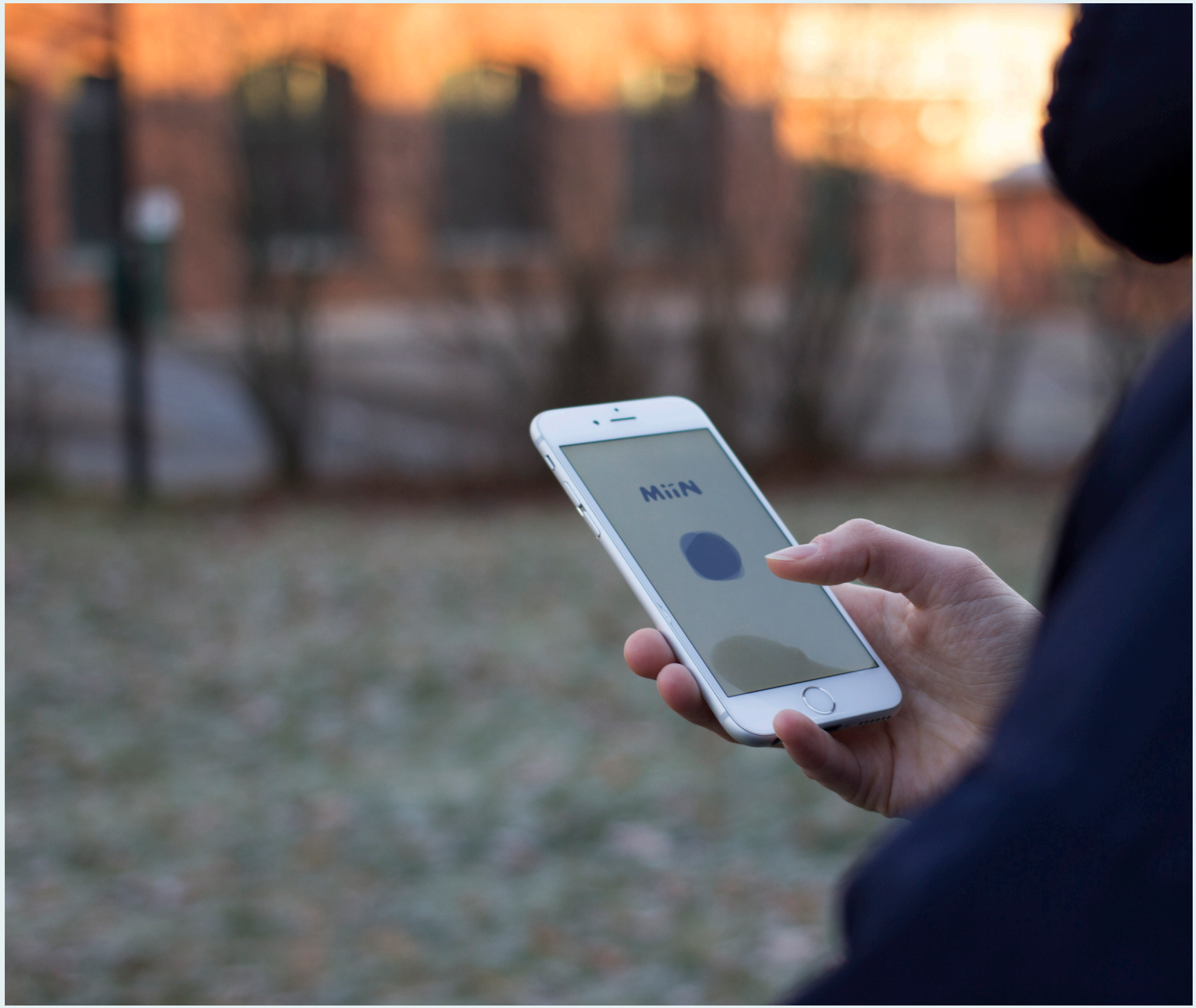
What do we propose.

Miin. A supportive, digital touchpoint for teenagers to use with their personal mobile phones.
The proposal consist of two modes: Calm down, for when the teen needs to calm down; and Training, for practicing self-regulation on their own, at home, in therapy, or any other place.

Miin is meant ot be a supporting tool for the therapeutic treatment at BUP. Therapists will introduce Miin to the teenagers and provide the knowledge regarding emotional self-regulation.

Who will interact with the touchpoint.

Teenagers



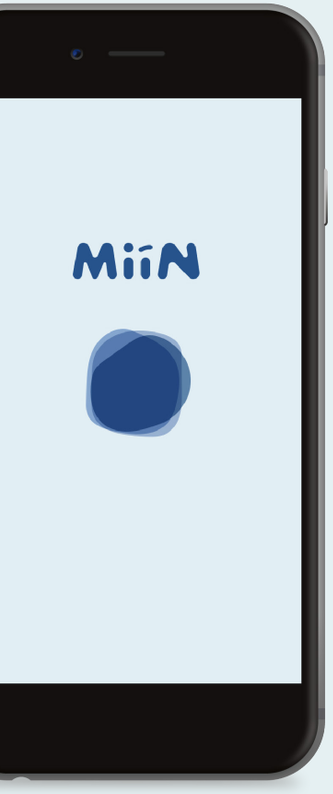
Overview & core pages

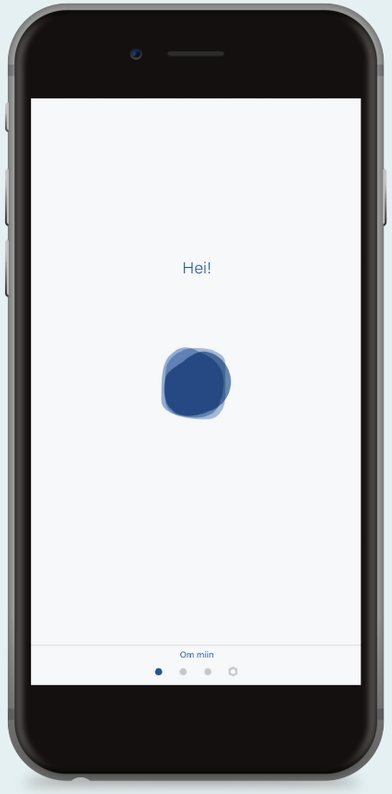
1.
Introduction/ On boarding

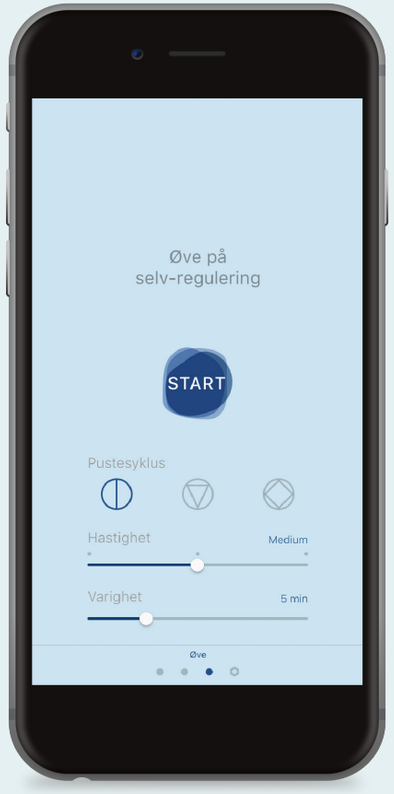
2.
Calm down mode Main screen

3.
Training mode

4.
Settings







1.
On boarding Miin

The teenager will see an introduction to the purpose of the application the first time they open the application; we want the application to make a small summary of what the therapist has already introduced in order to reconnect the content to the application.

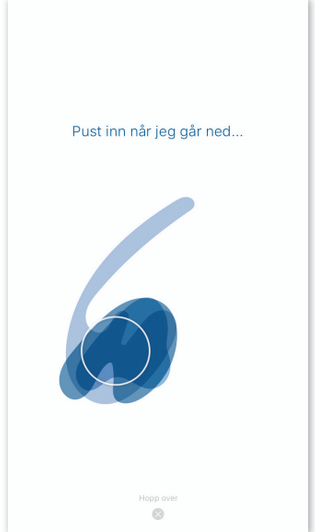
We have divided the onboarding story into different parts: introduction, emotion, functions, mechanics and navigation in order to get' an overview of what "miin" is all about.

Introduction — **Emotion** — **Function** — **Mechanics** — **Navigation**

Where the "blubb" introduces itself and sets the tone of voice.

Where the "blubb" explains that it is difficult to cope with thoughts and feelings and that it is there to help you.

Where the "blubb" explains why the teeanger should focus on it and how it can help the teenager in different situations.



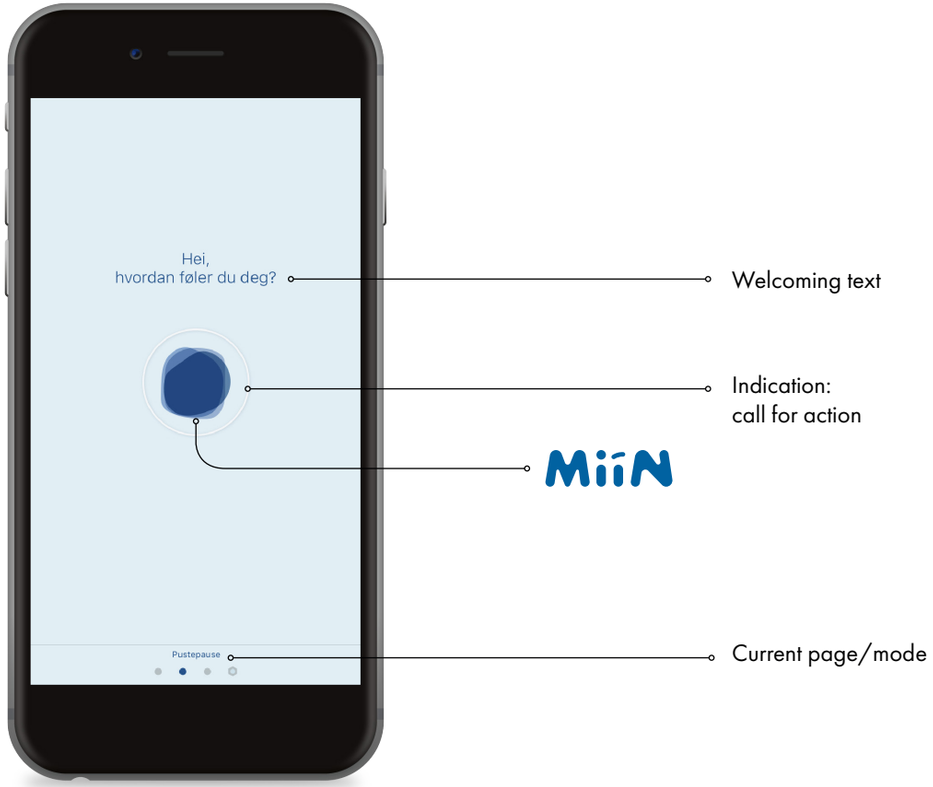
Where the "blubb" explains how it works and what you need to do

Where the "blubb" explains how the navigation works and why the different features exist.

2.
Calm down mode

The “Calm Down” feature is the main function of the “miin” application; other than the first time you use the app, the “Calm Down” feature is the first thing you see when you open it.

We wanted to provide easy access to the “calm down” part of the application; you should immediately be able to tell the application how you feel with a specific gesture in order for it to help you reduce your stress level.



Mindful breathing

In our exploration of mindfulness and meditation, we discovered how important the breath is in managing stress and anxiety. There are many different types of focus within mindfulness and meditation, but the most used is focussing on breath when practicing self-regulation. With focusing on the breath you can distract yourselves from thoughts and feelings and clear your mind.

Visuals

The visuals are based on the topic in the application: dealing with thoughts and feelings, which can often feel very abstract to many people, especially teens. Therefore, we have chosen to use an abstract approach while also adding some concreteness. We wanted to give some personality to the “blubb”, but we also wanted to leave the “blubb” free for the teeangers to project their own associations onto it.

Accesibility

In order for the Calm Down function to be easily accessible in stressful situations, we have made it the first screen the users sees when they open the application.

Navigation

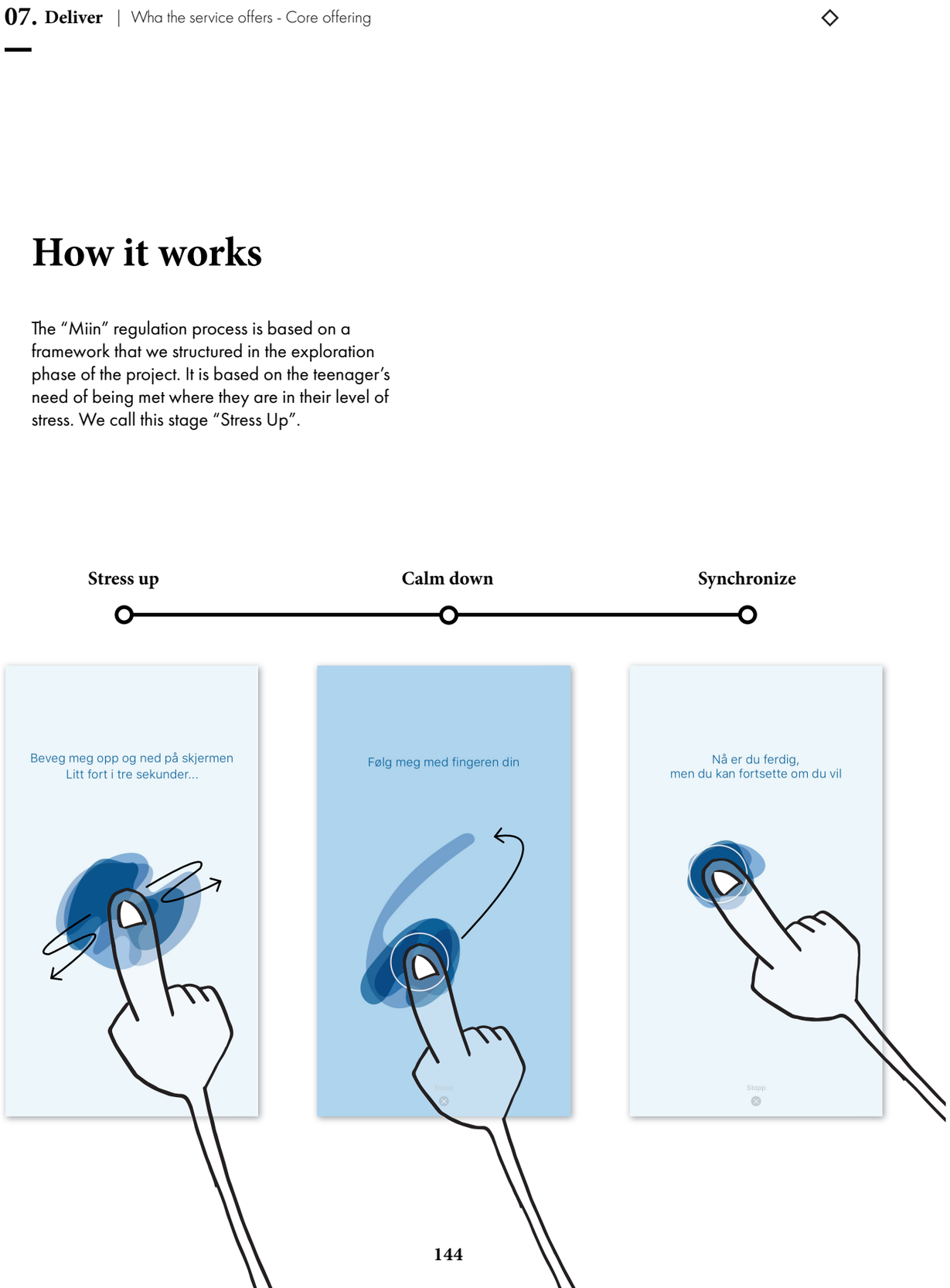
The navigation is based on the fact that the application is not too complex. Since the application is a support for the therapy, a large part of the content will be covered there. We focussed on covering more specific needs the teenager has outside the therapy: calming down in stressful situations, practicing self-regulation, personalization and a brief introduction.

The navigation itself is based on applications that are popular among the target group, such as Snapchat. The navigation is based on sweeping through different filters with different content. Since the main functions in the application revolve around the same purpose, the only difference lies in the user’s situation. Therefore we have taken inspiration from filter changing in Snapchat, where the image remains the same, but by changing the filter you can change the perception of the image.

How it works

The “Miin” regulation process is based on a framework that we structured in the exploration phase of the project. It is based on the teenager’s need of being met where they are in their level of stress. We call this stage “Stress Up”.

Stress up **Calm down** **Synchronize**



How

Why

Stress up

You start the “Stress Up” part of the application by shaking/dragging or moving the “blubb” quickly up and down the screen for three seconds. If you do this for three seconds, the application will understand that you feel stressed and will start the “Calm Down” phase.

The starting point for being able to calm down is about first starting at the level of stress that you feel you are in.

We decided that starting with a stressed gesture will signal to the application how you feel, and at the same time will help you get out some of your frustration. The gesture is also chosen because it does not draw attention and others cannot recognize it as a gesture of stress or anxiety. Once you have told the application you feel stressed, the next part of the framework will start.

Calm down

The speed of the looping movement will slow down gradually and automatically. At the same time, messages will appear on the screen providing guidance on how to breathe with your stomach, and on when and how long you should breathe. The Calm Down phase is designed to last for three minutes, as it is meant to be a quick thing to do when you are stressed. There is also the opportunity to continue as long as you want to in order to achieve a better effect.

Research has shown that correct stomach breathing has a relaxing effect on the body and can be used as pain relief. We have based the length and frequency of the breathing function on recommended breathing exercises used in yoga and meditation. In this case the application starts with breathing in for three seconds, and out for three seconds in the beginning. Later it automatically changes to four seconds in and out, and ends with five seconds in and out.

Synchronize

Immediately after it has understood that you feel stressed, the “blubb” will move into a looping oval circle that the user is supposed to follow with his or her finger.

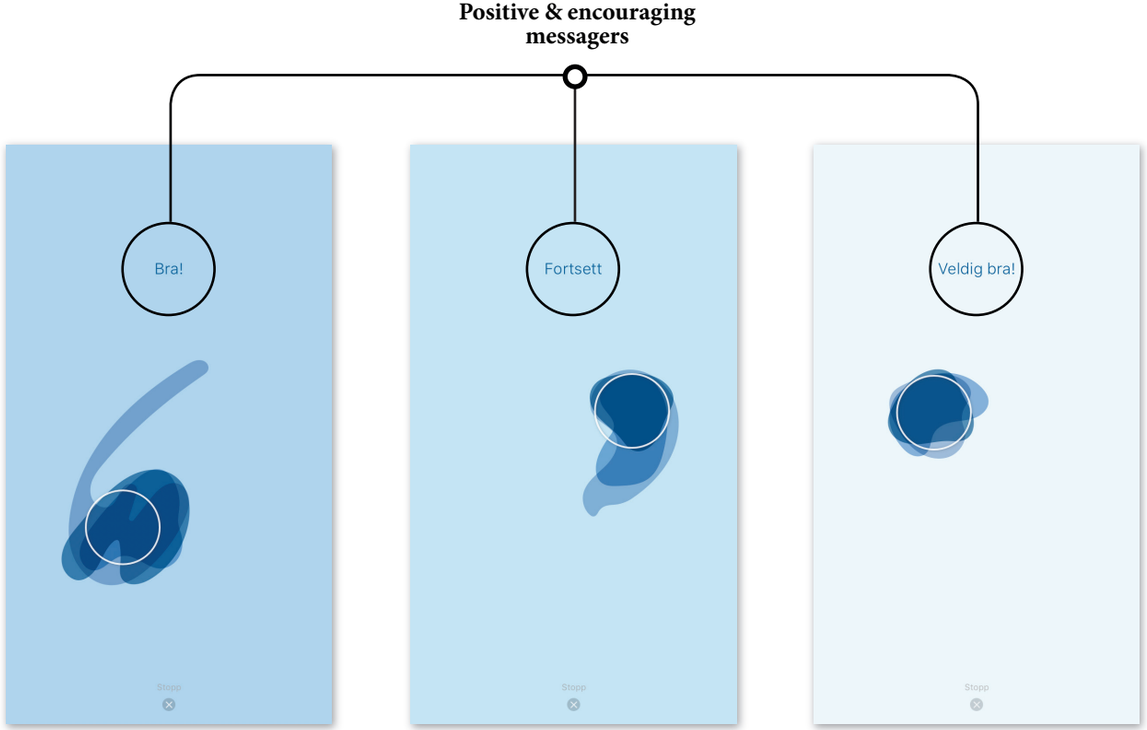
Stress reduction is about focusing on the outside instead of the internal negative thoughts.

We chose to use interactive MM, where you focus on an muscular activity; in this case, the action is to follow a repetitive movement of a looping oval circle with your finger. The oval circle is based on a metaphor used in yoga and meditation on how your breath moves in and out of your body in a continuous loop.

The repetitive, simple movement helps the user draw a single, sustained cognitive map that eventually triggers the relaxation response in the body.

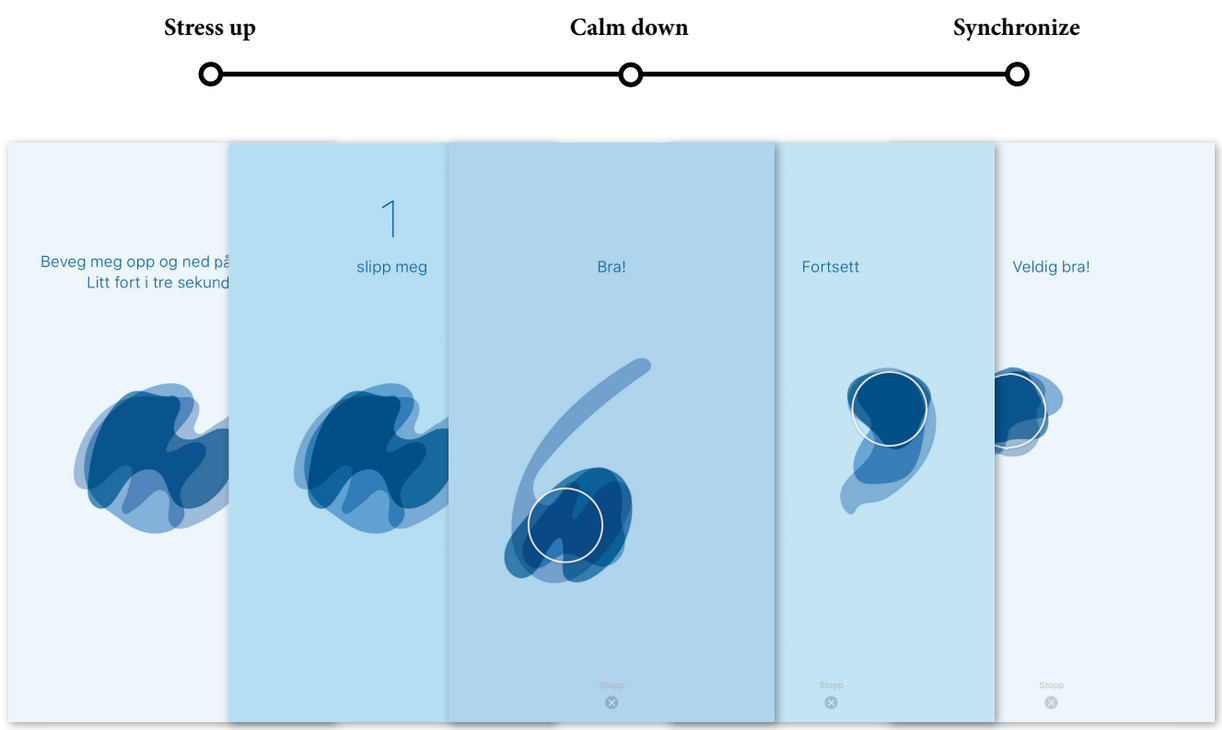
Feedback

The whole self-regulation function will be instructed by the “blubb” with motivational and explanatory text, and a friendly and nice tone of voice.



Progress

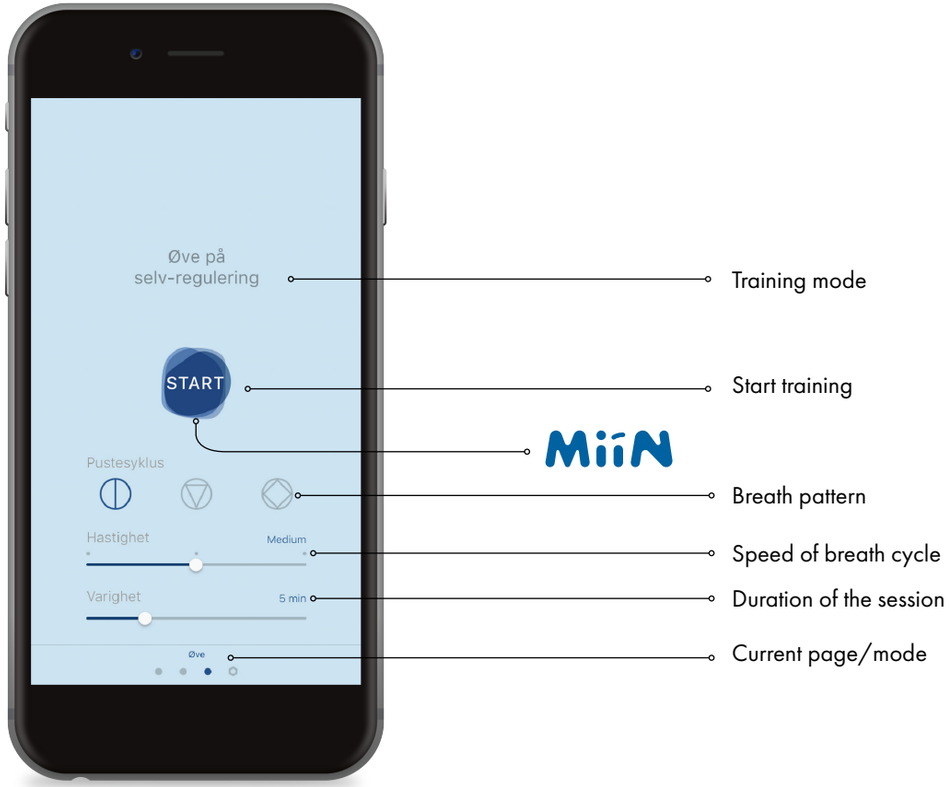
We have chosen to make the background colour change when you use the Calm Down function. This is because we want to enhance the calming effect of moving from stress to calm. When you “Stress Up”, the background will get darker, and then will slowly turn brighter and return to its calm starting point.



3.
Training mode

The Training mode of the application is based on the same features as the Calm Down mode.

The difference is in how the modes start; the Training mode is based on the user being calm and having time to practice, but “miin” the moving “blubb” is still there to anchor the user’s focus.



Practice

The training section of the application is there for the user to practice self-regulation. Since self-regulation is something that must be practiced to get results, this is also an important part of the application. The goal is that you should have access to guided self-regulation training outside of therapy so you can make progression.

Breath cycle

In our natural breathing pattern, we automatically insert breaks. Focusing on a set breath pattern as an anchor for your focus makes it easier to breathe mindfully. We have chosen to use three variations of breathing cycles so that individuals can select what is most natural.

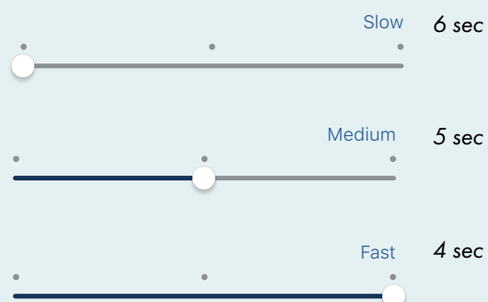
Inhale – exhale

Inhale – hold – exhale

Inhale – hold – exhale – hold

Rhythm

The speed of breathing cycles depends on what is right for the individual and how relaxed they are. We have chosen to divide the speed of the breathing cycles into three levels: slow, medium and fast to allow people to practice at different speeds

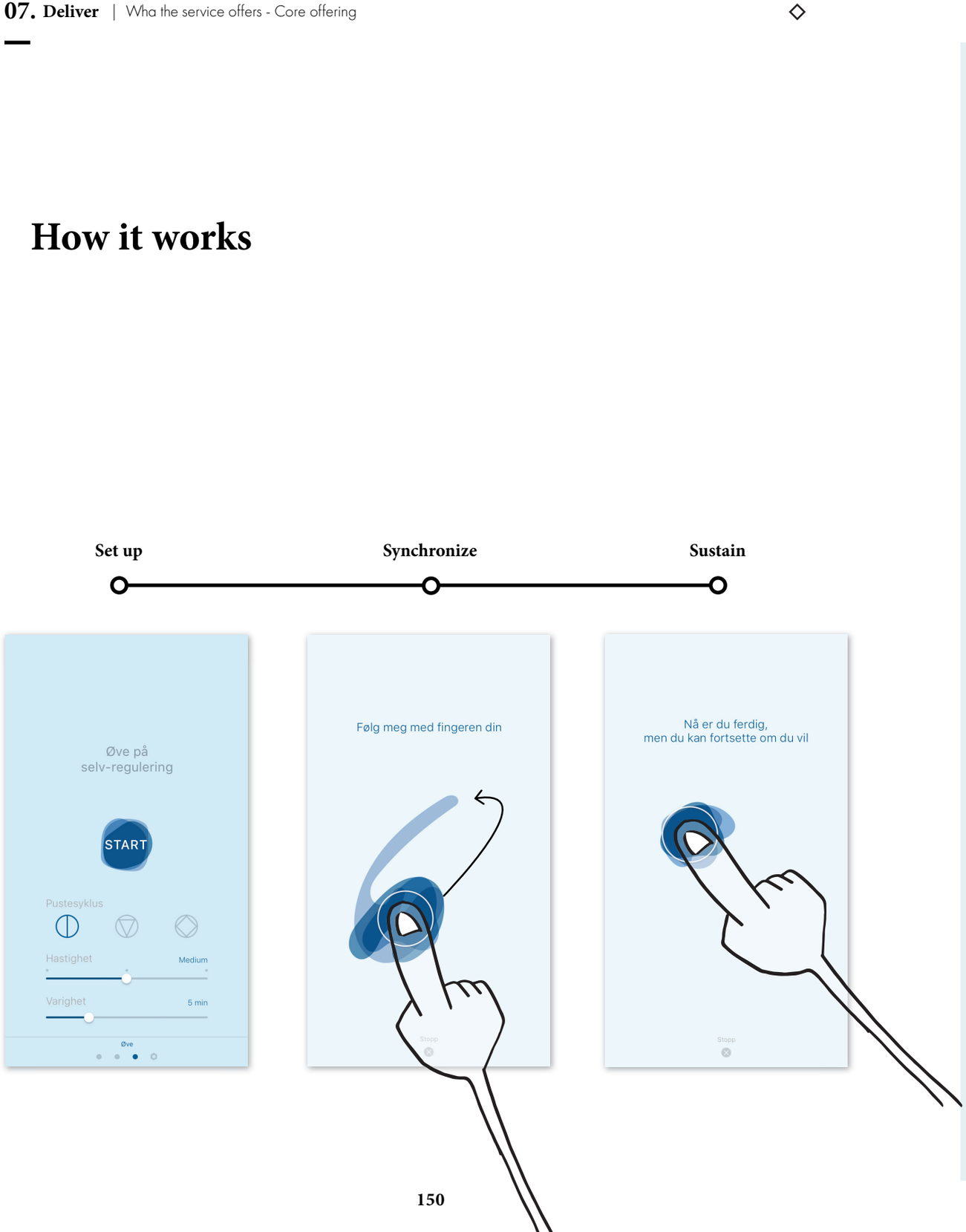


Duration

The recommended duration for a daily mindfulness-meditation session is 20 minutes. We think 20 minutes will be a bit overwhelming for teenagers so we have added the opportunity to set a shorter duration. However, there is always the possibility to continue meditation after the set time is over.

How it works

Set up **Synchronize** **Sustain**



Set up

How

To start the training program you need to set the breathing cycle, speed and duration you want. You can do this in the settings.

Why

In order to achieve results from self-regulation, it has to be practiced over time. The teenager is introduced to this concept in therapy, and also receives an introduction on what the different choices in the settings mean.

Synchronize

After you have set your preferences for Training and pressed start, the “blubb” will move into a looping oval circle that the user is supposed to follow with their finger in order to sync with it. The interaction is exactly the same as in the “Calm Down” mode, the only difference being that you have selected your settings (breath cycles, speed/rhythm and duration), and the interaction did not start with the “Stress Up” mode.

Sustain

You determine the length of training time in the settings. During training, you will be notified when the training time is over, but will also be given the opportunity to continue if desired. Here, we also see the potential to add the ability to close your eyes and continue the movement so that you can go deeper into the exercise. However, we chose to focus on the first action where you follow the “blubb” with your finger because this is classified as the hardest part. When settling down to do self-regulation exercises, it is difficult to ignore external distractions. Therefore, the first action is important for beginners to learn in order to achieve results.

Introspection

Self-regulation is not in itself the solution for why the teen is in therapy. It is only when they can control their own thoughts and feelings that they can work with the therapist to start addressing the real problem. By practicing self-regulation over time, it will eventually be easier to control thoughts and feelings and therefore focus more on the rational part of the situation you are in. It is a small part of the actual problem solving, but an important part to be able to move forward.

4.
Settings

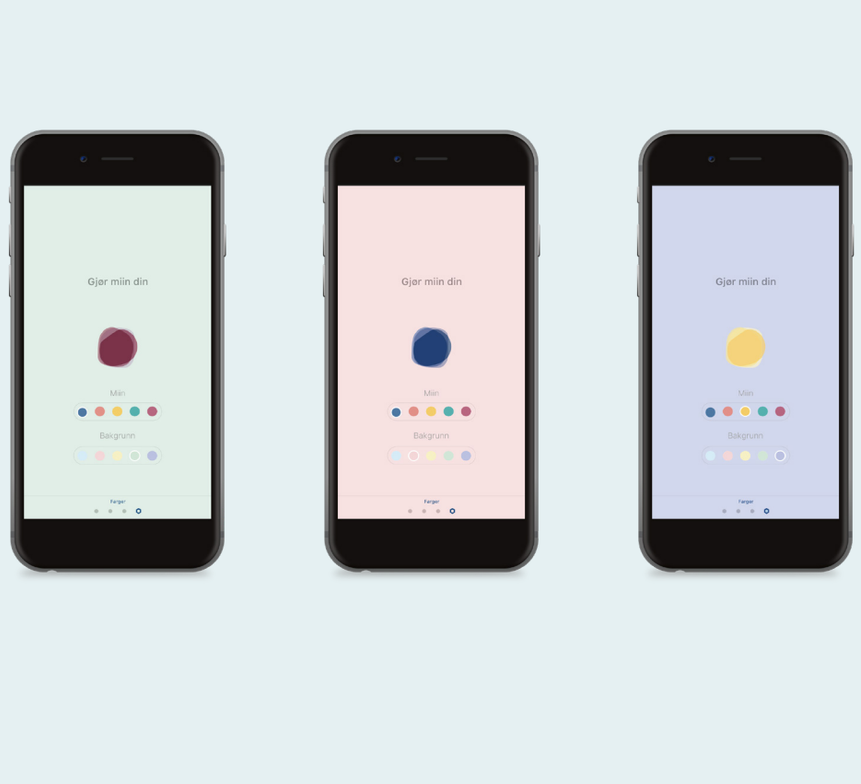
This screen is designed for you to personalize the application. It is based on the same principles as all the screens in all the different functions. It has the “blubb” in the center of the screen, allowing you to test the different colour options so that you can choose your preferred combination.

Personalization

When we talked to teenagers about how the visuals should be, there were many different opinions. The feedback on shape and movement was often the same, but the colors were what made the biggest difference. Since it is important that the application appeals to the user, we added the ability to customize the colors of the “blubb” and the application background.

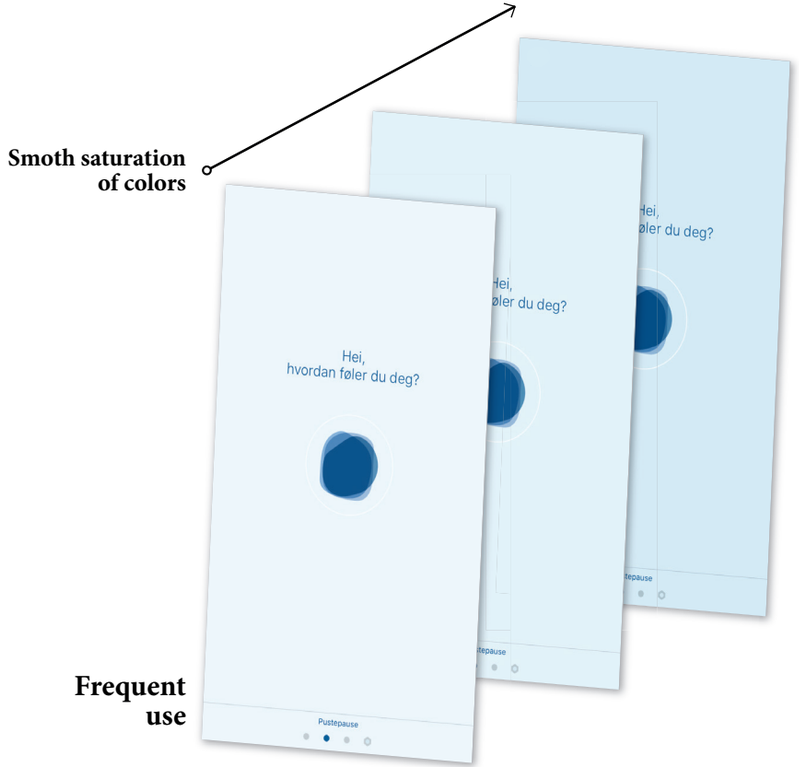
Colors

We have chosen a range of different colors for the user to choose from. The colors we selected are based on color theory and what is perceived as relaxing and calm colors. We have added five possible color choices for the “blubb” and five for the background. Together they have 25 color combinations that complement each other well.



Use overtime

We did not want any features to collect data. We are aware that data could be used to motivate frequent use, but we are also aware that the rules around collecting health-related data are very strict and complicated. We believe that there is a great opportunity to work towards motivating the user to use it over time with data collection (gamification), but we have decided to not focus on this part in our project.



We believe that the motivation to use the application can come from the therapist, but also from the user's desire and need to cope. The application touches a sensitive topic, therefore we chose to add a sleeping mode. The application enters sleep mode when it has not been used for a while. This is not for motivation but as a reminder that you have to use it to achieve results.

Introduction guide

Self-regulation training program

What's the aim of the offering.

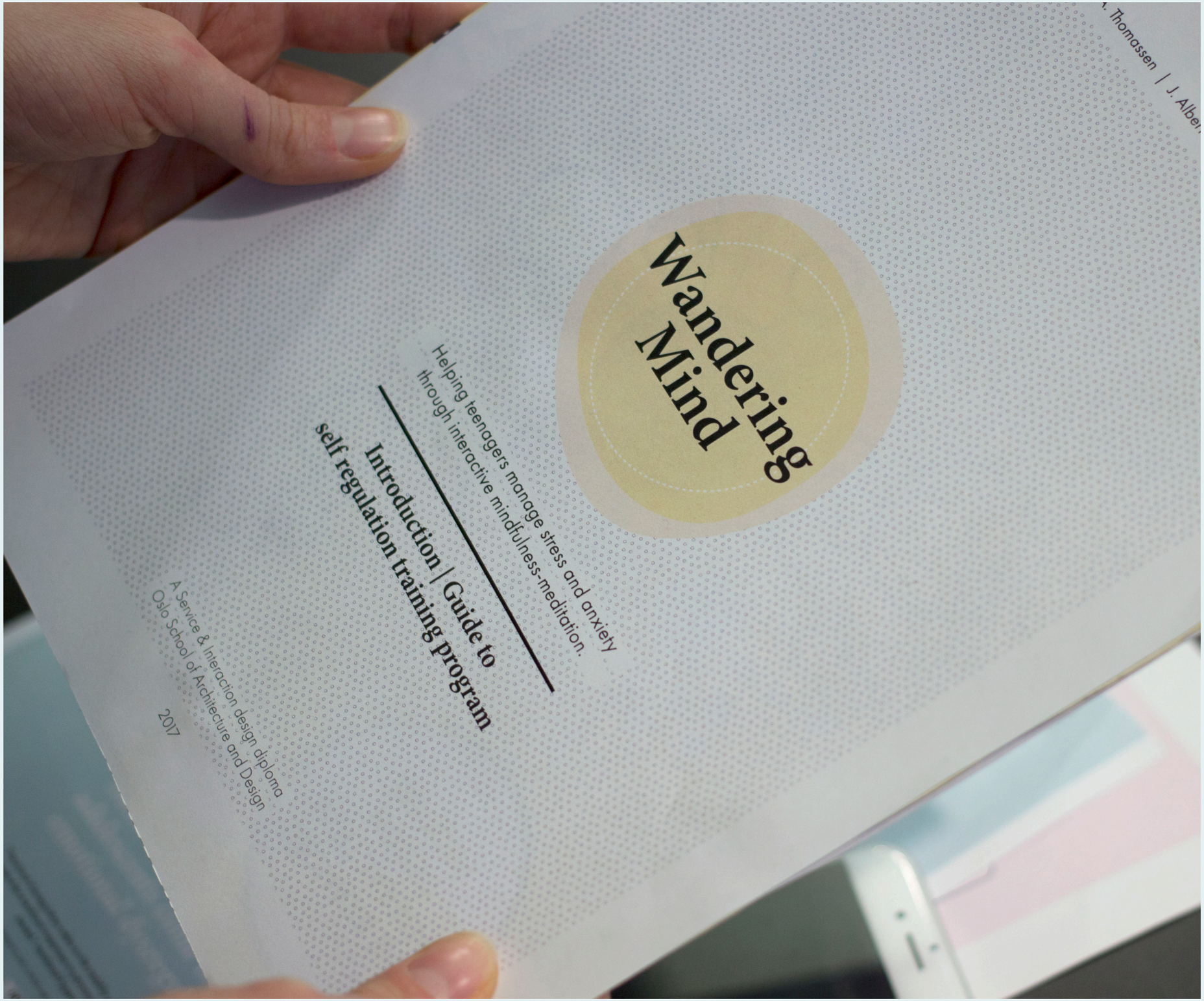
The goal of the introduction guide is to communicate the concept to relevant actors in the system.

We initially designed the service with and primarily for MD Charlotte Lunde. With her, we also began to introduce this service to other therapists at the Nic Waals Institutt. There are many other therapists at the institutt who also practice self-regulation methods with their patients and also see a need for digital tools to support this.

Feedback and collaboration
Therefore, we believe it is important that the service come with an introduction guide to communicate the service to other therapists at Nic Waals, and to future potential actors in other child and adolescent psychiatric clinics.

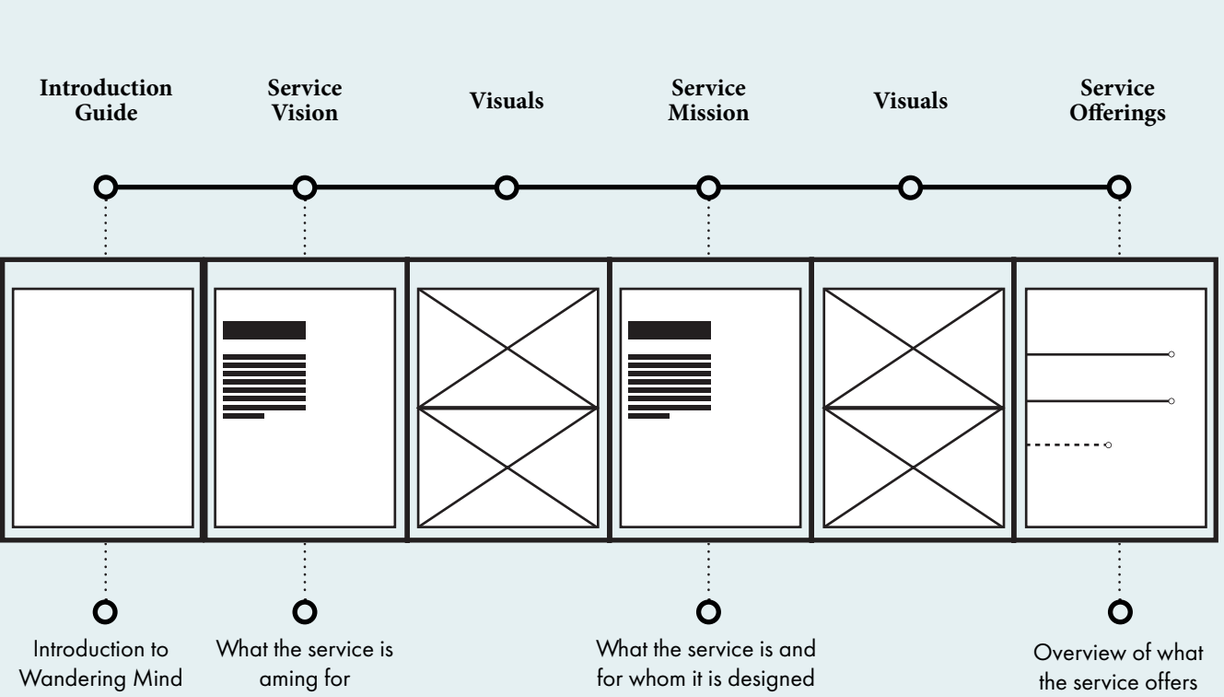
Who will interact with the touchpoint.

Therapists at BUP

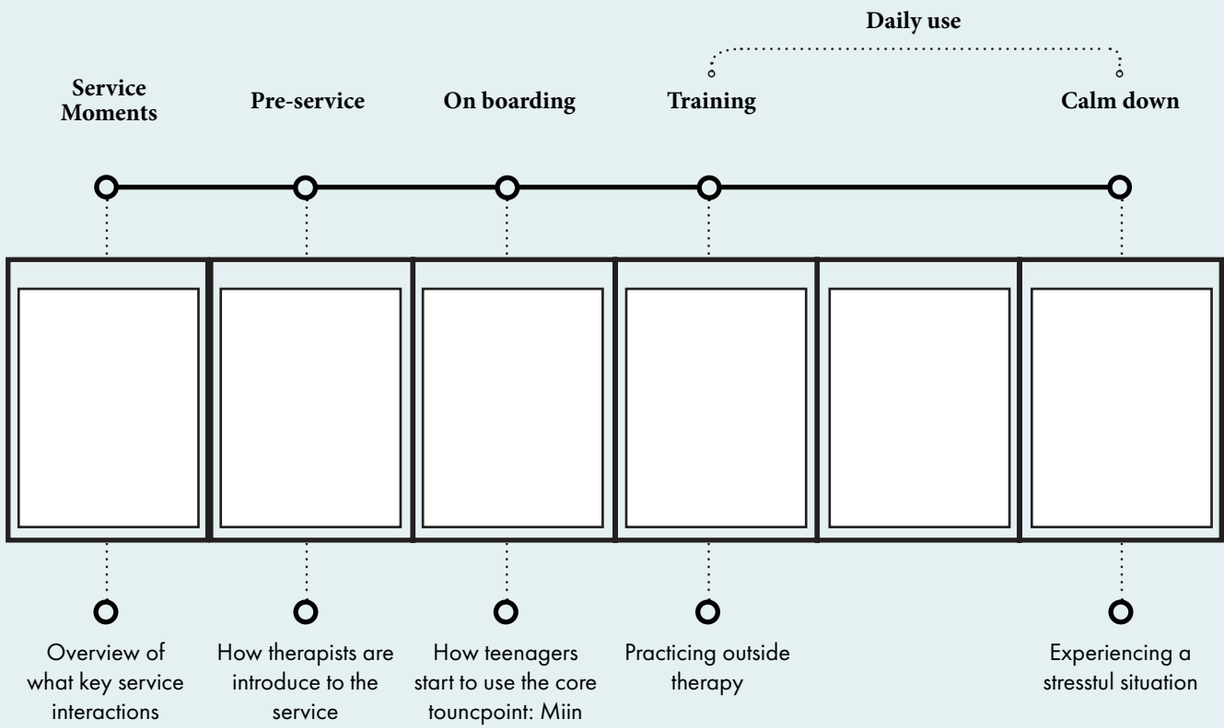


Overview

The introduction / guide is presented in a physical two-sided foldable. On the front side, contains a summary of the service vision, mission and offerings. On the back side it offers a visual journey of the key service interactions.



Front



Back

Psychoeducational touchpoint

What do we propose.

The suggested psychoeducational touchpoint is a digital interactive tool the therapist should be able to use to help teach the teeanger how thoughts and emotions affect their body. It will also facilitate dialogue and build trust between the therapist and teenager.

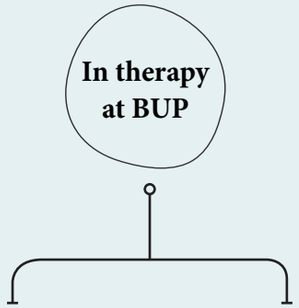
Through our research, we saw that there was a need to build trust and facilitate dialogue between the therapist and the teenager; trust is essential for the teeanger to engage in the therapy process.

We also saw that there was a need for a supporting tool to help the therapist explain to the teenager how thoughts and feelings work and how this affects the body. We discovered this because we found it difficult to understand what the therapists meant when they tried to explain this to us. Thoughts and feelings can be a bit hard to understand, particularly for teenagers.

We presented the idea of this tool to several psychiatrists; they felt that this could be very valuable in a therapy situation, and pointed out that this kind of resource is called a psychoeducational tool.

We have chosen to not focus on this touchpoint as we saw a bigger need for the touchpoint "miin". However, we have still chosen to include the psycheducational tool in the service journey because it is an important part of a future service which can make the proposal even stronger.

Who will interact with the touchpoint.

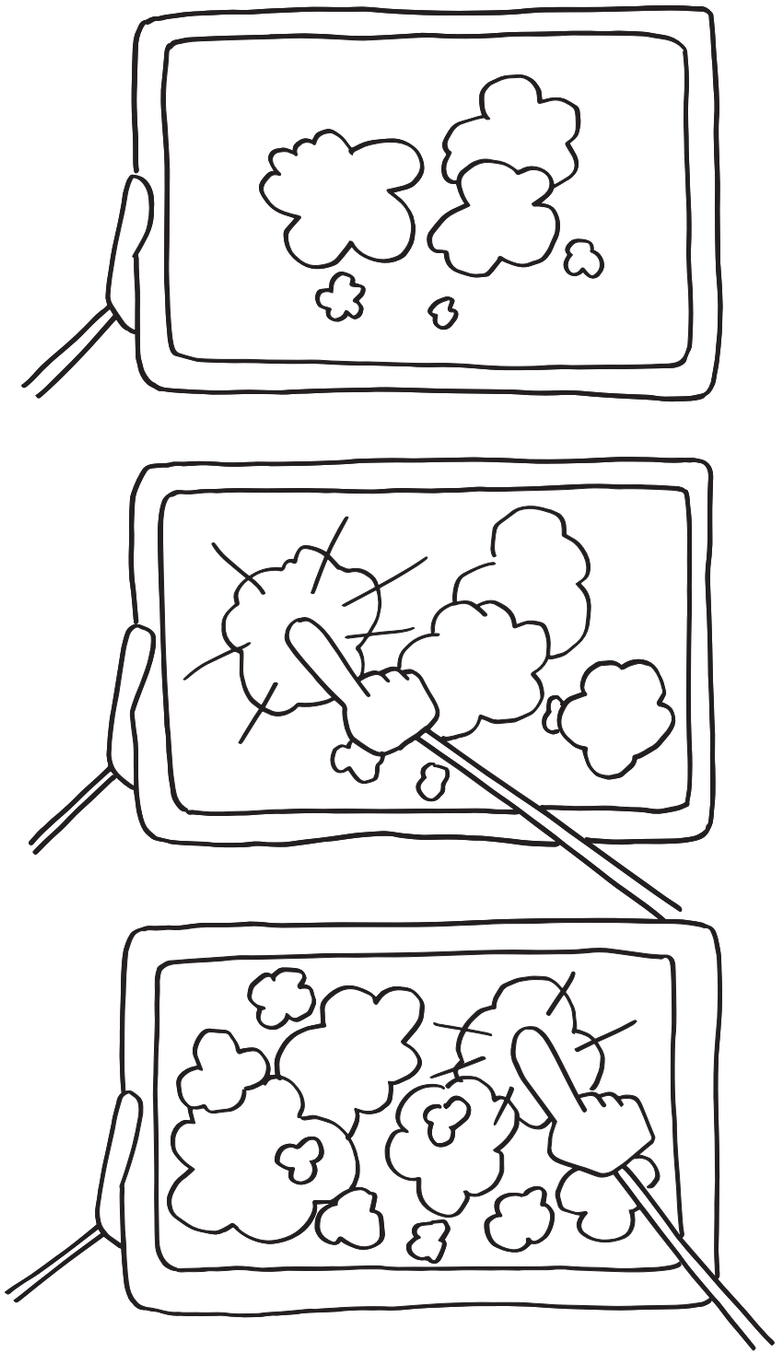


Primary user

Therapists at BUP

Secondary user

Teenagers



Overview of how the service works

Our design concept focuses on the “During” or Treatment phase. We recognize that in order for the design concept to work, there needs to be further development in how the concept is introduced before therapy, and how it will sustain afterwards.

Before therapy
We also see a clear need for further development on how this service is introduced to therapists and institutions in the pre-therapy phase. In this project we have introduced an introduction folder as an example, but see great opportunities for further development on this part.

During therapy
We have focused on creating a concept that is based around the therapy itself. From our research, we identified a big need for something that could support teenagers outside of therapy in order to improve the effect of the therapy itself. It became a major focus for us to make an example of such a tool so that the project could be used to convince the health sector about the value of supportive tools. Our collaborator partner believes that as a result of this project, others at Nic Waals have seen the value and are seeking funding to develop tools for enhancing therapeutic treatment.

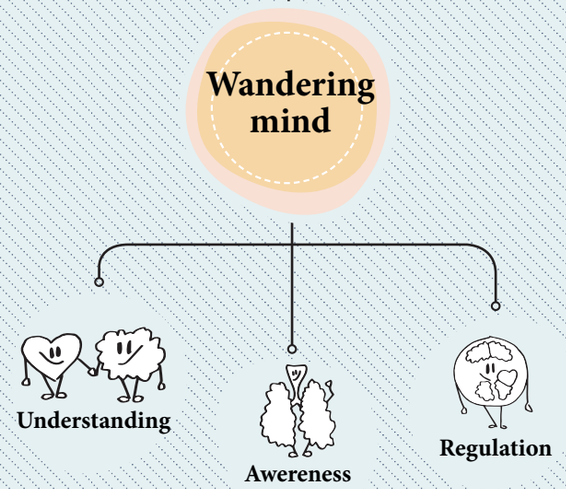
After therapy
We are aware that we have not worked with what happens after therapy ends. In many cases, there is a need for support after therapy, as you do not have a therapist to go to. But at the same time, this is about learning ways to cope with the problem, and hopefully you have learned how to use self-regulation on your own and see the effect of performing the self-regulation exercises through the application.

Before treatment

The process before getting into the specialized healthcare system.

During treatment

The process once admitted to BUP for a therapeutic treatment.



After treatment

The process after completing the therapeutic treatment at BUP.

Service interactions

Pre-service
WANDERING MIND
Discovering Wandering Mind

Self-understanding
Understanding how negative thoughts affect the body and how the body reacts to stress.

"Bringing the mind back to the body"

Self-awareness
Developing a coping strategy based on self-regulation practice.

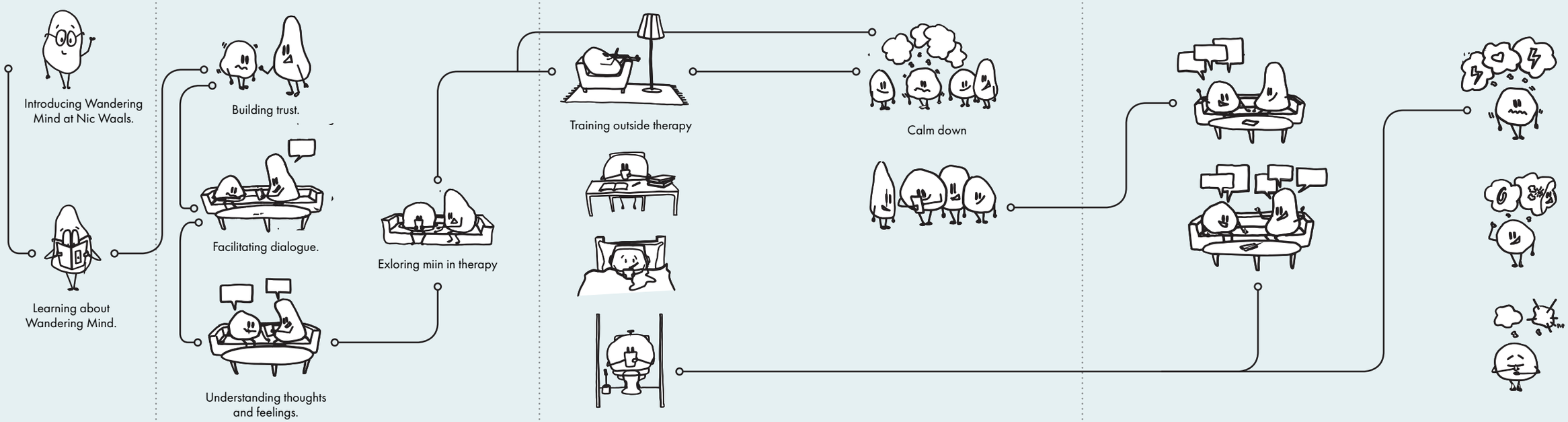
"Listening to the body"

Self-regulation
Managing the situation.

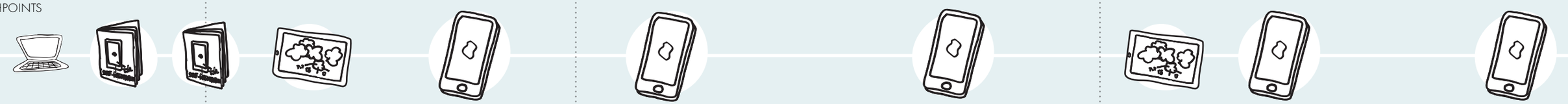
"Balancing mind and body"

Discovering the service | On boarding service | On boarding Miin | Daily use | Stressful situations | Support inside and outside therapy | After treatment

EXPERIENCE



TOUCHPOINTS



Service moments

Moments are examples of key interactions of the desired service experience. These examples serve as inspiration and help communicate the desired experience from the users' perspective.

Pre-service

On boarding

Training

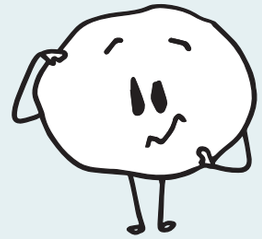
Daily use

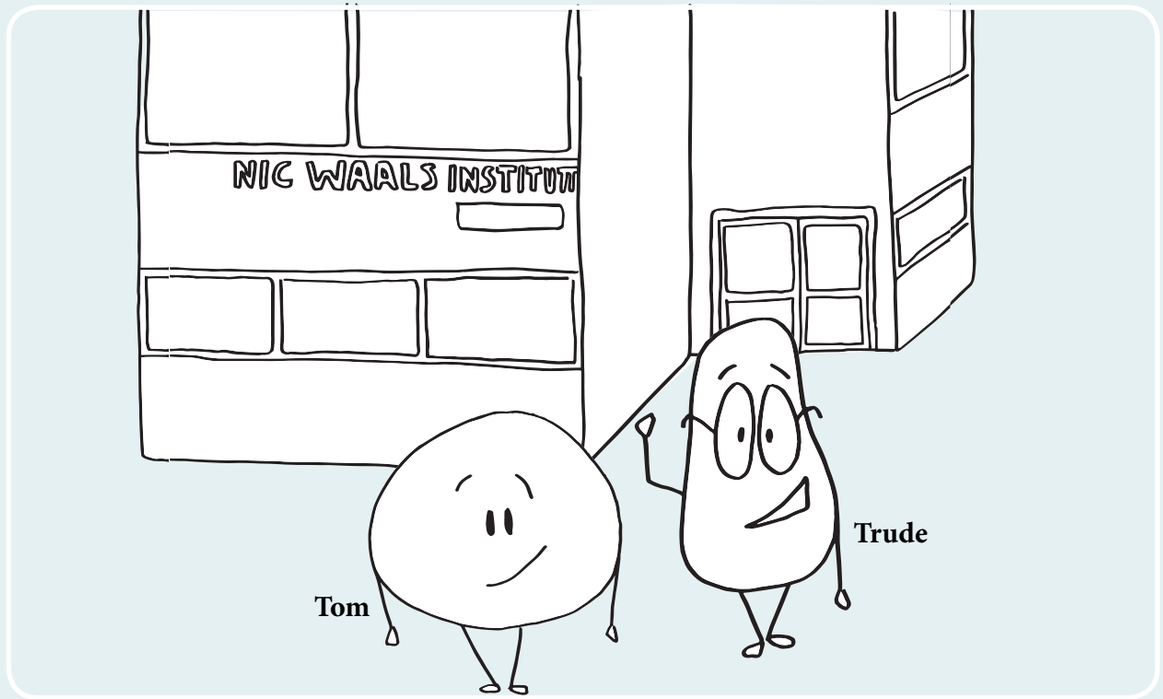
Calm down

The context

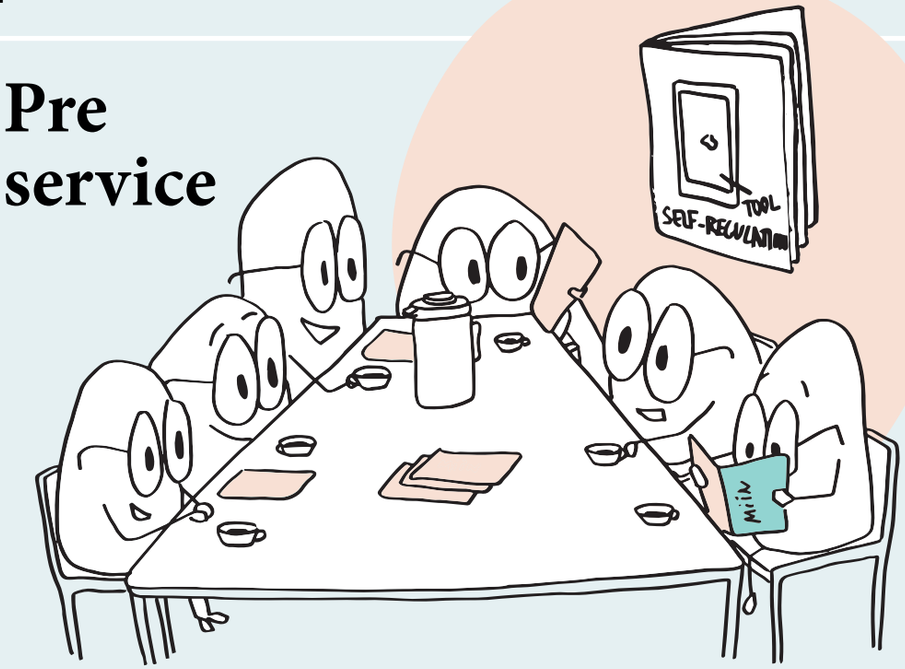
This is Tom! He is a typical teenager in high school. Tom finds it a bit difficult to handle different situations in daily life. He is often stressed and nervous, and struggles with anxiety.

At Nic Waals institute (BUP- Barne- og ungdomspsykiatrisk poliklinikk), Tom goes to the therapist Trude. Trude is a psychiatrist and expert on stress and anxiety. She has been working in this area for many years and has many patients who have the same struggles as Tom.



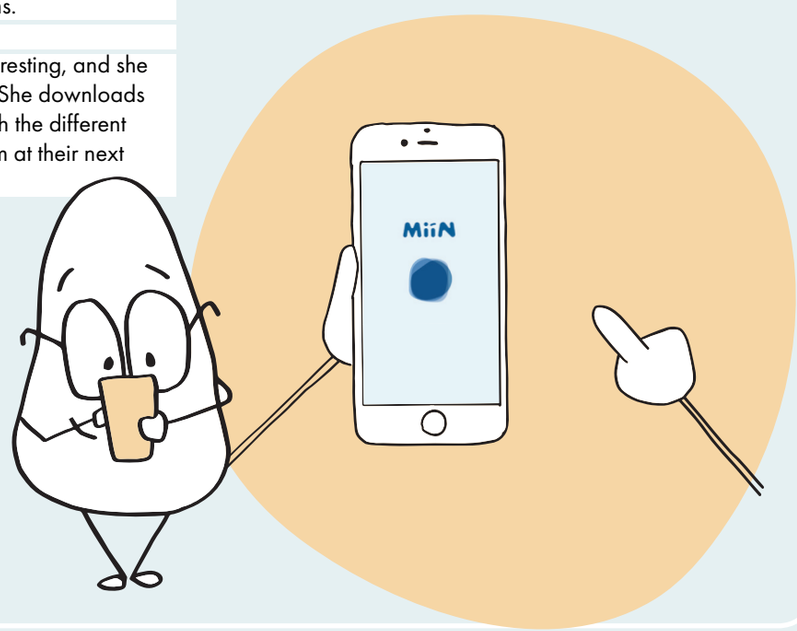


Pre service

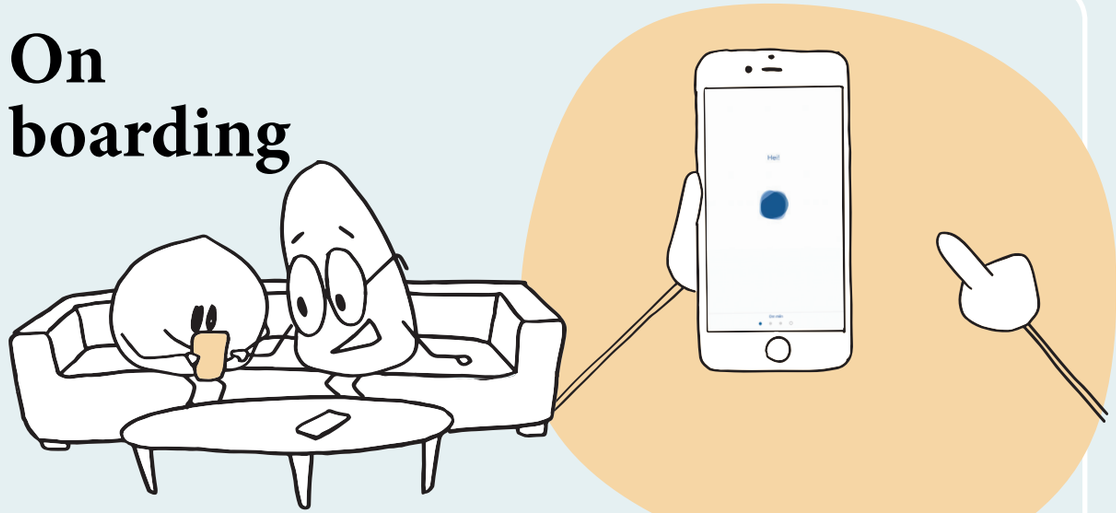


During a morning meeting at Nic Waals, the therapists are introduced to an information folder about a new service called “Wandering Mind” which has been created for exactly this purpose. It offers an application for teenagers to be used as a supplement for therapy, to practice self-regulation to calm down in stressful situations.

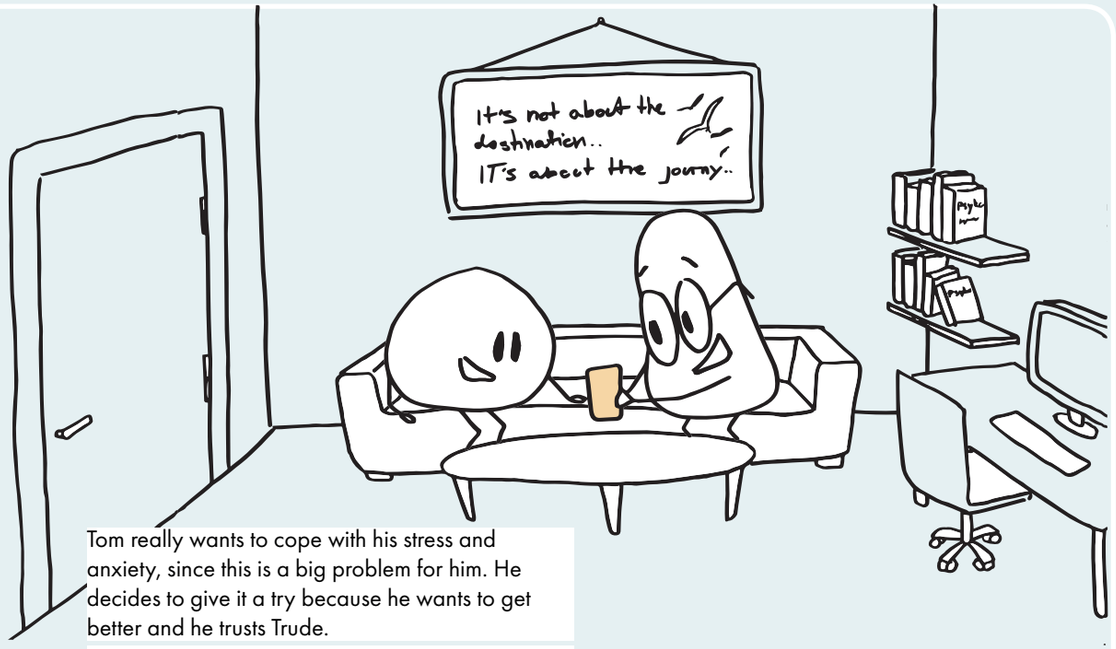
Trude thinks this sounds very interesting, and she thinks that this is perfect for Tom. She downloads the application, and goes through the different features so she can show it to Tom at their next meeting.



On boarding



Trude and Tom meet in therapy. They have their usual therapy session, but she also shows him the application and suggests that he test it out.

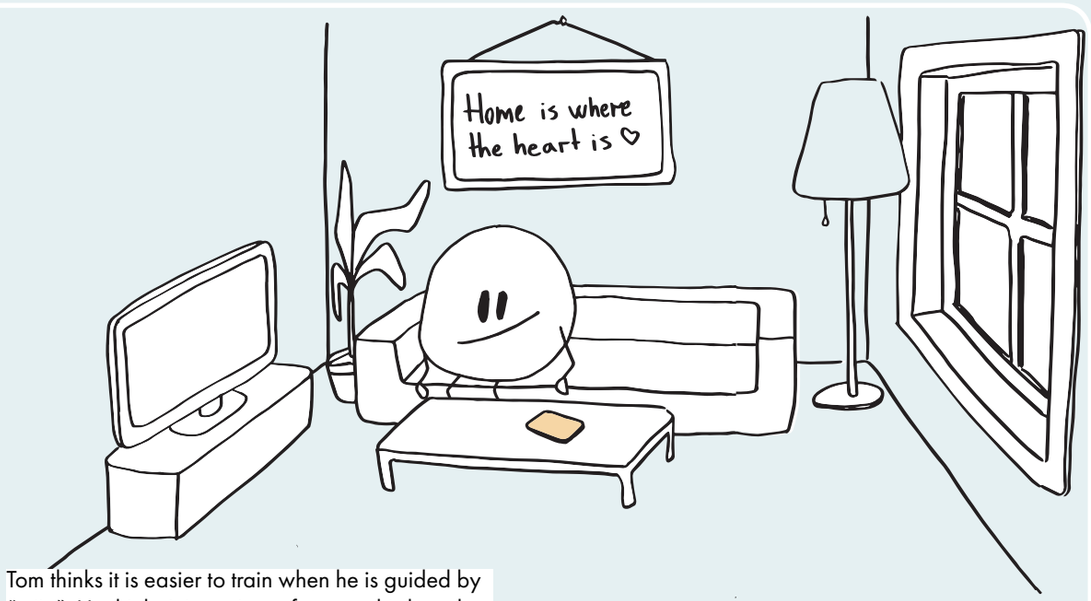


Tom really wants to cope with his stress and anxiety, since this is a big problem for him. He decides to give it a try because he wants to get better and he trusts Trude.

So Tom download the applications “miin” and they go through the different functions together.

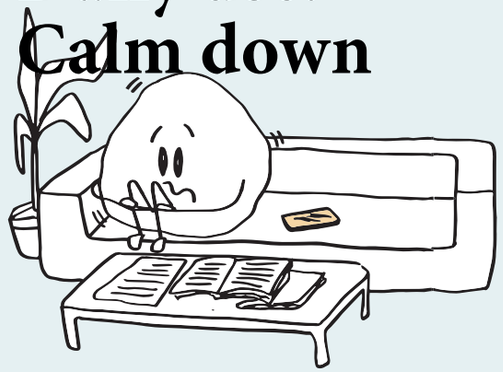
Daily use: Training

The day after, Tom tries to train on self-regulation as he does every day. But today he has the application “miin” to help him. Trude and Tom set the settings for the training program together in therapy so all Tom needs to do is sit comfortably and press start.

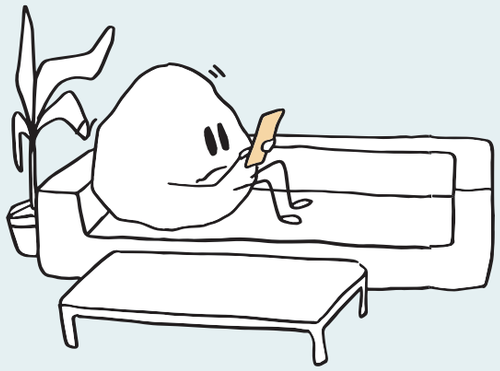


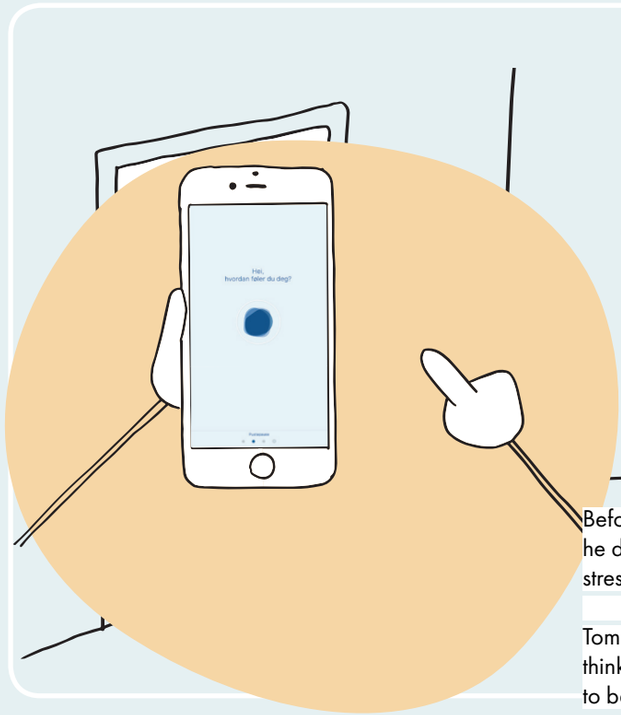
Tom thinks it is easier to train when he is guided by “miin”. He thinks it is easier to focus on his breath when he imagines that the little “blubb” on the screen is his breath and guides him on what to do.

Daily use: Calm down



A few days later, Tom becomes stressed. He is going to have a presentation at school and he gets scared by the idea that he might have an anxiety attack in front of the whole class. Tom remembers what Trude has said about this and that he can use “miin”.





Before the presentation, Tom finds a quiet place where he does not get disturbed, and tells “miin” that he feels stressed.

Tom is still nervous, but he is able to calm down and think positively about the presentation. There is nothing to be afraid of, it’s just a presentation after all.

8

Conclude

Reflections & acknowledgements

This section outlines project feedback from our collaborators, as well as our own reflections on our results and the project as a whole.

Overall feedback

MD Charlotte Lunde

Everything in the public health sector is slow and it takes time to get through when try to seek funding to develop new tools. I strongly believe that your project may be useful for us to further explore how interactive tools can be useful in the therapeutic process. Since you have already presented parts of your projects for research and innovation leader at Nic Waals, there is potential for your project to be integrated further into the system as an example. We would love to use your project further to exemplify what a design application can do to improve sides of the therapeutic process

You show a very good understanding of the problem in the project. The project exemplifies how you can communicate what anxiety and emotional dysregulation is - in a good and efficient way

I like the cooling down (calm down) part of your concept and see the value in this; but it is still a long road to developing strategies that get lasting effects for the teenager.

Tools like this are exactly what patients would like to have. Of course, this is something that has to be tested over time in order to prove that it actually works."

Feedback on self-regulation

"I have been to 6-7 different therapists since I was a child.. It doesn't help to look for what's the problem when there's no problem.. I'm just a worried person.. the last therapist I had, taught me about self-regulation and how to use breathing to calm me down so I can think rationally about the situation .. because there is no reason to be worried, it's just my thoughts that trick me.. It was a relief when I realized that I could use my breath for this"

Person with anxiety

Feedback on the result

You have concretize and visualized the breathing exercise in to a practical tool.. that's exactly what I need, It's hard to practice alone..

I know that I can calm down if I'm do the breathing exercises when I'm getting stressed .. but when you're stressed, it's hard to think rationally. Therefore it's perfect to be able to use something as concrete as "miin" when I am stressed .. to get some support to calm down

Feedback on the application

I understood those symbols as that I can choose between different breathing cycles.. between hold, inhale and exhale.. three different patterns.. I have learned about this in the therapy session..

It's good that the text is so concrete and simple .. it just reminds me of how to breathe.. it will be weird if it pretend to be my therapist.. I like that it supposed to be my breath .. everything is about breath!..

Reflections on result

This being our last school project, we wanted to use the opportunity to do an exploratory project; we see being students as an opportunity to play, take risks and challenge conventions.

Of course, this is also a project to show that we are ready to graduate from AHO. We believe that throughout this project, we have applied the design methods and project management skills that we learned during our time at AHO, and that these skills allowed us to set and achieve our goals for this diploma.

It was not our goal to create a final result that could be implemented tomorrow. We are aware that this will be important when we start working as designers, but we wanted to use the end of our time as students to explore, play, and be less constrained by timeframes and budgets.

Early in the project, we recognized that our collaboration partner had an expectation that we would end up with something we felt was similar to already existing applications, applications that we felt had some weaknesses.

Instead of focussing on normal conventions of application development within this field, we instead explored the possibilities of interactive interfaces to perform self-regulation in another way. We believe that we achieved our goal of proposing something unconventional; at the same time, we also recognize that there is need for further development and testing over time to know if our concept actually works.

Charlotte Lunde our collaborator, is already working to convince other actors in mental health care that tools like ours should be developed in order to improve therapy. While we recognize that our interactive solution requires further work in order to be developed and implemented in today's market, we hope that our project as a service may help exemplify the potential for developing such tools.

We see great potential in the theory around interactive mindfulness and the possibilities technology can provide to help develop self-regulation for teenagers within therapy. We believe that the choices we have made in our interactive solution have great potential.

Personal goal

Looking back on this project we are pleased with our project on a conceptual level. Of course, there are aspects of the project that could have been developed to a further level of detail; however we do not see this as something negative. We chose to spend our time looking at the concept as a whole service, and exploring new opportunities in self-regulation on an interactive level. This has made our semester very interesting and has given us lots of new learning both as designers and on a personal level.

On a personal level, our goal was to have a fun and joyful experience working on our diploma project. As the project went on, we realized that our personal goal overlapped with the topic of our project; having fun and experiencing joy also improved our mental wellbeing. Through this project, we learned a lot about mentalization, CBT, mindfulness and meditation. We managed to apply parts of this thinking on our own mental challenges throughout the project and the challenging diploma semester. We are happy to say that we reached our personal goal.

Acknowledgements

We would like to thank to the people who got involved, showed ineterest and made this project possible and enjoyable.

To our collaborator MD Charlotte Lunde, for showing interest in a collaboration and sharing her knowledge within the mental health field.

To our supervisors: Mosse & Jonathan, for their support, expertise and guidance thorughout the diploma.

To the anonymous mother & the six anonymous people who shared their stories about their experience with mental health treatment, and gave us feedback on the concept.

To the teenagers who gave us feedback on the design and visuals.

To Trine lise Auklend, Kristin Lie Romm, Innovation leader at Nic Waals, Kine Berre, Nora from Ung arena, and Ryan Anthony, for listening to us and sharing knowledge within the field.

To Josina, Christopher & Gustav for their positive vibes, encouraging words and valuable feedback.

To students and former students from AHO, for taking the time to listen to us.

To Frédéric Petit Stangervåg for his Unity skills.

To Amelie Dinh for making our report readable.

To Miriam Strandquist for helping out with her beautiful voice.

Other teachers from AHO who shared their knowledge.

And las but not least, the crazy diploma class for keeping it warm and cozy during this winter.

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