Exploring Emotional Awareness through User Experience Design

Designing a mobile application which helps to enrich emotional vocabulary

Deimantė Butkutė

Supervisor: Ahmet Börütecene
Examiner: Jonas Löwgren
Abstract

The motivation of this work focused on inspiring the understanding of emotions and the ability to name them precisely to improve self-awareness and well-being. Through an online survey, competitor analysis, customer journey map, and interviews it was clear that the chosen target group of young people do not feel fully confident in understanding their emotions and lacked emotional vocabulary. With these results in mind, several concepts were developed. Due to users’ needs the mobile application was chosen as a platform to create an experience to learn emotional vocabulary. As a result, the interactive prototype was created to transform the learning experience into an engaging application to learn emotions definitions, connections, and their application to everyday life. The interactive prototype was tested on potential users and the results were positive. This in turn might be a first step in forming strategies to improve understanding of emotional vocabulary.

Keywords: User Experience Design, Emotional Awareness, Emotions, Emotional Vocabulary.
Acknowledgments

I would like to express my gratitude to my supervisor Ahmet Börütecene for his continuous support throughout the thesis work. Also, thank you to my examiner Jonas Löwgren for the structured seminars during the semester.

Special thank you to all participants of the survey, interviews, journey map, co-design workshop, and user validation sessions. I am grateful for your time and valuable input.

Big thank you to my family, especially my brothers Mindaugas and Gediminas, and Mehdi for their unconditional love and emotional support throughout my master studies.

I dedicate this degree to my grandmother Aldona and my mother Jūratė. Without their selfless sacrifices, I would not be where I am now.

Thank you all,
Deimantė
Contents

1. Introduction ........................................................................................................................................ 8
   1.1 Background and motivation ........................................................................................................... 8
   1.2 Research questions ....................................................................................................................... 9
   1.3 Delimitations ............................................................................................................................... 10

2. Theoretical framework ..................................................................................................................... 11
   2.1 Historical look into research about emotions ............................................................................. 11
   2.2 How many emotions are there? ................................................................................................. 13
      2.2.1 Ekman’s and Plutchik’s theories of emotions ...................................................................... 13
      2.2.2 What are researchers saying about emotions in the 21st century? .................................... 14
   2.3 Tools to understand and name emotions ................................................................................... 15
      2.3.1 Robert Plutchik’s wheel of emotions ............................................................................... 15
      2.3.2 The Feeling Wheel by Gloria Willcox ................................................................................... 16
      2.3.3 Personal emotions wheel by an artist .................................................................................. 16
   2.4 Summary of theory about emotions ........................................................................................... 16
   2.5 Providing meaning through user experience design .................................................................. 17
      2.5.1 The Why, What and How model ....................................................................................... 18
   2.6 Positive Design Approach ........................................................................................................... 19
      2.6.1 Positive Design structure and framework ............................................................................ 19
      2.6.2 Design for pleasure .............................................................................................................. 20
      2.6.3 Design for personal significance .......................................................................................... 20
      2.6.4 Design for virtue ................................................................................................................... 21
   2.7 Designing for learning experiences in a digital age ..................................................................... 21
      2.7.1 Learning assumptions .............................................................................................................. 21
      2.7.2 Robert Gagne: 9 types of Instructional Events ........................................................................ 22

3. Method – UX oriented Research through Design ........................................................................... 23
   3.1 Research through Design ............................................................................................................ 23
   3.2 The Double Diamond design model ............................................................................................ 24
      3.2.1 Discovering ........................................................................................................................... 25
      3.2.2 Defining ................................................................................................................................ 26
      3.2.3 Developing ........................................................................................................................... 26
      3.2.4 Delivering ............................................................................................................................. 26

4. Preparatory fieldwork ...................................................................................................................... 27
   4.1 Emotional awareness through quantitative data .......................................................................... 27
      4.1.1 Insights from the online survey ........................................................................................... 28
   4.2 Competition – what is out there? ............................................................................................... 28
List of Figures

Figure 1 The James-Lange theory adapted from (UWA, 2019, p. 11) ................................................... 12
Figure 2 Cannon-Bard Theory adapted from (UWA, 2019, p. 12) ....................................................... 12
Figure 3 Schanther-Singer theory adapted from (UWA, 2019, p. 13) .................................................. 13
Figure 4 Cognitive Appraisal Theory adapted from (UWA, 2019, p. 13) .............................................. 13
Figure 5 Positive Design framework adapted from (Desmet & Pohlmeyer, 2013) .............................. 20
Figure 6 The Double Diamond framework adapted to this project from (Design Council UK, 2005) ... 24
Figure 7 Online survey structure with conditional questions ............................................................... 27
Figure 8 User journey map based on “How We Feel” mobile application (user icon is generated by Figma plugin Blush) ............................................................................................................................... 32
Figure 9 Fictional user persona (Tomitsch, et al., 2018) based on interviews insights. Icon generated by Open Peeps (Stanley, 2019) ............................................................................................................. 36
Figure 10 Workshop's ideation phase, voting activity. For privacy the participants’ faces are blurred. (Pictures are my own) ........................................................................................................................... 39
Figure 11 Groups of the ideas gathered during the workshop ............................................................. 40
Figure 12 First brainwriting session with a random word “Sip” ........................................................... 41
Figure 13 Brainstorming session using the Random Input Technique (Bono, 1993). ......................... 42
Figure 14 The energy pen sketches and storyboard ............................................................................. 42
Figure 15 Visualising the platform of learning about emotions through questions or quizzes .......... 43
Figure 16 Music playlist based on emotions idea storyboard’s sketch ................................................. 43
Figure 17 First mobile application hand sketches ................................................................................ 45
Figure 18 Early paper prototype ........................................................................................................... 46
Figure 19 Paper prototype user testing procedure (pictures are my own) .......................................... 47
Figure 20 Early stages of welcoming and onboarding medium-fidelity wireframes ......................... 48
Figure 21 Early wireframes of the learning about emotions part ........................................................ 49
Figure 22 Early wireframes of the connections part and the definitions section ............................... 49
Figure 23 Overview of full working file of the high-fidelity prototype ............................................... 50
Figure 24 Minimal illustrations to represent the mobile application ................................................... 51
Figure 25 Onboarding and homepage screens (icons on homepage from Figma plugin) ................. 51
Figure 26 Home page and emotions definition section with secondary emotions. Core emotions based on (Ekman, 1999). Anger definition by Brown (Brown B., 2021) ......................................................... 52
Figure 27 Role-play question with primary emotions. The question is created referring to enjoyment definition by Brown (Brown B., 2021) .................................................................................................................. 52
Figure 28 Learning definitions of emotions through an interactive chatbot. The anger definition is by Brown (Brown B., 2021, p. 220) ..................................................................................................................... 52
Figure 29 Building the wheel based on opposite emotions. The wheel and words are based on the wheel of emotions by Plutchik (Plutchik, 1984) .................................................................................. 53
Figure 30 Storyboard of the context of the product .............................................................................. 54

List of Tables

Table 1 Competitor Analysis ................................................................................................................ 30
1. Introduction

1.1 Background and motivation

Nowadays when the healthcare system in most countries is advanced, our society is still struggling with numerous illnesses (Maté & Maté, 2022). There is a rise in mental health issues, especially among young people (Colarossi, 2022). Even though we are living in the most advanced technological era, we are facing increasing numbers of loneliness and isolation which often causes anxiety, depression, and other mental health conditions (Franzen, 2000).

As our collective mental health and well-being are decreasing, there is a need to look for ways to improve it. The most familiar ways to increase well-being are well-known activities such as physical exercise, healthy eating habits, healthy sleeping habits, social connections, etc. However, various health issues can arise by simply ignoring emotions (Maté & Maté, 2022). Emotional well-being can be improved through understanding emotional intelligence (Goleman, 2006). It is the skill that allows us to understand our and others’ emotions with empathy, know how to regulate emotions, and maintain healthy relationships with others (Nahavandi, 2015, p. 135). Moreover, emotional awareness is the ability to clearly articulate personal emotions based on events and understand how they affect individual thinking and behaviour (Goleman, 2006).

Most people go through hardships in life and many individuals know what it means to feel down, demotivated, stressed, or overwhelmed. It is nearly unavoidable to face difficult times throughout one’s life and it can be beneficial to connect with the darker sides of self (Jung, 1981). Negative experiences can shape one’s personality, but positive experiences are just as valuable. As much as it is possible to go through unexpected events in life, it is also inevitable to live through experiences that bring us joy, happiness, contentment, and pleasure. It is known that leaning into positive emotions and expressing gratitude can improve our health (Logan, 2022). Naming and fully understanding positive and negative experiences through emotions can have an impact on people’s overall well-being (Brown B., 2021). Therefore, taking care of emotional health is equally important as physical health. Most importantly, noting individual emotions and understanding them can help not only deal with difficulties but also improve resilience when going through hardships (Lama & Ekman, 2009).

The skill of emotional awareness can be achieved by learning how to recognise bodily sensations, analysing emotions while using the emotional wheel, and understanding emotions in others (White & Gillette, 2022). While learning how to scan our bodies and understand others can be perceived difficult, learning emotional vocabulary should be accessible to everyone. However, according to Dr. Danielle McGraw, people often describe their emotions in general language, for example using generic words: “happy” or “sad” (White & Gillette, 2022). The issues arise when the usage of simple words does not provide significant insights and does not lead to improved self-awareness.

Drawing a special attention to young people, primarily in the decade of their twenties, is important because their decision-making impacts their future life (Jay, 2021). I believe that if society has resilient, self-aware, and emotionally mature young adults, the collective well-being can also increase. The period of one’s twenties is one of the most defining decades in life (Jay, 2021). It is when youth should prioritize their career decisions, relationships, and their health the most because their future depends
on decisions made during their twenties (Jay, 2021). That is why, focusing on emotional awareness can become more and more relevant in young adults’ life.

Since technology plays a significant role in a modern person’s life, it is evident to look for ways how to challenge the usage of smartphones into a meaningful and valuable experience.

In this thesis, I tackle the challenge of exploring how well-being can be improved through having a better understanding of one’s emotions through user experience design. My goal is to inspire to learn human emotions, their definitions, meaning, and how they are connected. I hope to empower others to navigate life with a high level of self-awareness. This, in turn, might be a first step into forming strategies to improve emotional understanding.

1.2 Research questions

I started the design project with a broad research question which was – how might we design a thing that offers a user experience to improve emotional awareness? However, throughout the process, I discovered that one can improve emotional awareness by learning emotional vocabulary through a mobile phone. This led to the main research question of the project:

**How might we design a mobile application that offers a user experience to enrich an emotional vocabulary and an understanding of emotions in young people?**

To answer the main research question, I needed to understand the topic of emotions, had to understand if my assumption that young people are in need for better emotional awareness. Then had to investigate if and how young people understand their emotions and how emotionally aware were they. Finally, how my proposed digital thing could help young people to enrich their emotional vocabulary and consequently inspire to become aware of their emotions.

In addition, to answer the main research question, I summarized it into alternative questions:

1. What are emotions and emotional awareness, and how to improve?
2. Are young people confident in emotional awareness, meaning they understand their emotions and can name them easily with clarity, or the opposite?
3. Would young people want to use a digital thing to become more emotionally aware?
4. Can the user experience offered by an interactive mobile application help young people to understand their emotions better through learning emotional vocabulary? And how?

The first question was approached through a theoretical framework. The second and third questions were approached through an online survey, individual interviews, and a co-design workshop. In addition, the competitor analysis overview ensured that the design artifact was different from already existing solutions. Lastly, the fourth question was approached by developing an interactive prototype and validating it through user testing.
1.3 Delimitations

The target group for this project was young people, primarily in the decade of their twenties which often is students at the university environment.

It is important to note that the final interactive prototype is a way to show how young adults might learn emotional vocabulary, it is not meant to be a substitute for therapy or any other medical professional help that involves mental health. This work was not meant to help cope with any mental condition but rather inspire emotional awareness through a well-designed user experience.

Other delimitations include the number of words for emotional language that are used in the final design artifact. The number of emotions and experiences can reach eighty-seven (Brown B., 2021). The final prototype has a limited number of emotions, focusing on primary and secondary categories. This was done because the work was created by one person.
2. Theoretical framework

When working with a topic of emotions, it is important to briefly look at the science of psychology and understand when emotions started to appear in the research. This is my overview of what I read about emotions in psychology research out of the need to have a more grounded understanding of the topic in the design development stages. The readings provided a deeper understanding of the theory of emotions and helped to ground the purpose of the thesis work. Moreover, it helped to have a grounded perspective for the No.1 research question to understand what emotions are and what is emotional awareness. In addition, I learned about what tools and methods can help to understand emotions.

2.1 Historical look into research about emotions

American psychologist, Carroll E. Izard (1991) in his book “The Psychology of Emotions” argued that emotions came to the research quite late (p. 1). It was evident that emotions are an inseparable part of our human existence, yet the research about emotions started developing only around the 1980s (Izard, 1991, p. 1). It was almost contradictory that the subject of psychology which can be seen as highly focused on emotions, ignored them for almost 100 years (Izard, 1991, p. 1). There were different opinions about emotions, some said that humans were rational beings, and some argued that humans were highly emotional individuals (Izard, 1991, p. 2). Moreover, Izard (1991) argued that emotions could influence many aspects of human beings, including their motivation, and their understanding of the world, it also influenced what human beings thought and, it could influence human beings’ actions (p. 14). Most importantly, Izard (1991) claimed that “emotions help define humanness” (p. 8).

When reading and trying to understand why the research on emotions came late into the field, I started speculating that there could be a possibility that emotions as part of the field of psychology came late to the research but not as part of the field of neuroscience. This is because, later when digging more into the past, I came across several scientists, including Charles Darwin, and their early studies about emotions before the 1980s (Dalgleish, 2004). My understanding was that the research of emotions before the 1980s was more of the research in the field of brain studies or neuroscience. After coming across the claims that emotions were not researched enough in the science of psychology (Izard, 1991), it sparked my curiosity to look more into the research and find different traces of studies about emotions. Even though the studies about emotions emerged relatively late, in the past 30 years it seems that there was a higher interest to understand where in the human brain emotions appear (Dalgleish, 2004).

Dalgleish (2004) outlines the historical timeline of emotions in neuroscience (p. 582). Starting with Charles Darwin’s work in 1872, Darwin contributed to the field of neuroscience by proposing that animal emotions are the same as human emotions, and he also proposed that there is a specific amount of core emotions among humans and animals (Dalgleish, 2004, p. 582). Later, William James challenged the idea of how emotions appear and argued that emotions cause bodily sensations, and for them to occur there should be a stimulant (Dalgleish, 2004, p. 582). Moreover, another researcher
Carl Lange collaborated with William James in 1885 and this was around the time when one of the first emotional theories under the name of The James-Lange Theory emerged (UWA, 2019).

The James-Lange theory claimed that human beings experience emotion in the sense that the physiological sense appears after the event and that the emotion, an individual is experiencing depends on their interpretation (UWA, 2019). Later the theory was challenged by physiologist Walter Cannon in the 1920s (Dalgleish, 2004, p. 582).

The Cannon-Bard Theory challenged the idea of The James-Lange theory by claiming that bodily sensations and emotions occur at the same time after an event happened (UWA, 2019, p. 12).

Later, in the 20th century several scientists, such as MacLean, James Papez, Paul Bucy, and Heinrich Kluver slowly understood which part of the brain was responsible for emotions (Sapolsky, 2017). Then, the more detailed model of the brain part responsible for emotions was established by Paul MacLean and was called the MacLean’s limbic system (Dalgleish, 2004). MacLean focused on the idea that involving the awareness of the environment that surrounds us and connecting it to the physiological impulses, forms our emotions (Dalgleish, 2004). The name of the limbic brain became a central part of the brain responsible for emotions, and it is used until this day (Dalgleish, 2004, p. 583).

I started to understand that at the beginning of the research of emotions, it was not clear what causes to experience emotions and in which order emotions appear regarding the stimulus, events, and bodily sensations. Different scientists and researchers had several approaches, the ideas were challenged and some of the theories started to reembark the world of neuroscience and later psychology.

To continue, the literature review about history of research about emotions, after Charles Darwin’s work, The James-Lange theory, Cannon-Bard Theory and MacLean’s limbic system, two emotions theories followed (UWA, 2019).

The Schanther-Singer theory, which was introduced in 1962 by Stanley Schachter and Jerome E. Singer added an additional element into the theory of how emotions worked (Dalgleish, 2004, p. 3). They propose the idea that after a human being faced the event, bodily arousal appeared, and then the human being started to understand it and only after reasoning, the emotion appeared (UWA, 2019, p. 13).
After that followed the Cognitive Appraisal Theory which was introduced by Richard Lazarus (UWA, 2019). It was based on a model where thinking must appear before a human being experienced emotion, meaning that after an event a person thought about it and then the emotion appeared (UWA, 2019, p. 13).

After seeing the chronological sequences of factors representing emotions by different theories, it become clear that the field was complex, and it was difficult to summarize the findings into one definition of how emotions work.

To summarize the findings, I undoubtedly understood that theories of emotions are different, and I found it intriguing to understand what appeared first, the emotion or the event, the thinking, or the bodily sensation. What I could conclude from the readings is that even though the chronological order was different, the theories still had common actors. The actors included the following: there must be an event that triggers the emotion, the event can trigger physiological reactions in our bodies, and the reasoning together with thinking is often involved when experiencing emotions (UWA, 2019). These factors were especially important to consider when conducting the research through user interviews to better understand how young adults perceive their emotions.

2.2 How many emotions are there?

Thus far, I found information about different theories regarding when emotions happen and what actors belong to emotions. It is time to dive into the definitions of emotions, how many are there and what possible combinations of emotions could be done.

2.2.1 Ekman’s and Plutcnik’s theories of emotions

Emotions can be divided into two different categories: they can be basic, and they can be expanded to even more complex combinations (UWA, 2019, p. 8). One of the highest references when talking about emotions was a psychologist named Paul Ekman (Goleman, 2006). His theoretical framework was partly influenced by Charles Darwin’s theory that human emotions were linked to facial expressions (Ekman, 1999, p. 45), and throughout his research, he developed seven emotions which he named as basic (UWA, 2019, p. 8). Later he changed from seven basic emotions to six and they were: feeling happy, sad, scared, angry, surprised, and disgusted (UWA, 2019, p. 8). However, some researchers prefer to claim that these basic emotions are rather groups or categories of emotions (Goleman, 2006, p. 290). Later Ekman expanded the list and included emotions such as embarrassment, contempt, excitement, shame, pride, satisfaction, and amusement but, it seemed...
that the expansion of the basic emotions was not frequently used and only the initial six emotions were more adapted in the further research (UWA, 2019, p. 9).

Ekman (1999) argued that emotional expressions were an important part of human beings’ development and played a big role in aiming for connection in human relationships (p. 47). Also, his discovery was that at least four core emotions including joy, fear, sadness, and anger were universal even in different cultures (Goleman, 2006, p. 290).

In addition, interestingly the psychologist worked on defining different characteristics which could help see the differences between emotions and could be helpful to separate moods or emotional traits from emotions itself (Ekman, 1999, p. 48). The characteristics that were developed included different physiological reactions, individual experiences, appraisal, duration, and what the person was thinking when emotion appeared including memory images (Ekman, 1999, p. 56).

The readings about Ekman’s research were important because his influence on emotions in the research field had quite a significant impact. Moreover, the readings sparked the idea that there might be a possibility that moods are not equal to emotions. Moods can be described as “outer ripples” that can last longer than emotion and can appear muted (Goleman, 2006, p. 290).

Additionally, it gave me the understanding that perhaps there is no right answer, and just as my later readings will partly confirm my hypothesis – there are various theories about emotions and what they are, and they can differ from researcher to researcher. Therefore, it is evident that it might be the case because of the complexity of the topic of emotions. However, some researchers’ influences stayed and were further developed till this day.

2.2.2 What are researchers saying about emotions in the 21st century?

After reading and analysing the great minds that contributed to the research of emotions before the 21st century, it is important to understand what researchers say about emotions nowadays. One of the modern researchers, Brené Brown researched shame, courage, vulnerability, and empathy and reflected it in her several books (Brené Brown, 2023).

Brown explored the experiences as thoughts that caused to feel an emotion (Brown B., 2021, p. xxiii). She acknowledged that researching and studying human emotions was a complex process because emotions were studied from various disciplines: neuroscience, sociology, philosophy, and medicine (Brown B., 2021, p. xxiii). Brown (2021) stated that there were different kinds of approaches to emotions from different scientists or researchers, some said that emotions can be qualified into low and high arousals, and some simply said that they can be classified into positive and negative (p. xxiv).

Even though, leading experts like Ekman, stated that there were six basic emotions (Ekman, 1999), Brown based on her research chose to investigate the emotions and the experiences in a broader approach (Brown B., 2021, p. xxv). The researcher concluded that there were eighty-seven human emotions and experiences (Brown B., 2021). She grounded her approach based on the data of an online course that she was teaching (Brown B., 2021). It included 66,625 participants who left 550,000 comments about emotions (Brown B., 2021). Then she gathered 150 emotions and experiences and after that, she organized a focus group session with experienced therapists who worked in the mental health sector and who evaluated the emotions based on: “the ability to name this emotion or
**experience is essential to being able to process it in a productive and healing manner**” (Brown B., 2021, p. xxv).

The researcher picked only those emotions and experiences that were only valuable in the sense of *naming* the emotions to process them (Brown B., 2021). Therefore, having the language of how to name emotions correctly matters.

Having the language to name emotions is important but what is also significant, is the understanding of experiences and events that are related to the emotions (Brown B., 2021). In addition, the language used to describe our emotions can shape how people perceive experiences (Johnson, 2020).

### 2.3 Tools to understand and name emotions

The ability to name emotions as specific as possible and experience them in an accurate manner is described as emotional granularity (Barrett, Gross, & Benvenuto, 2010).

In the cinematic lecture about how emotions were made, neuroscientist Dr. Barret said that people associated emotions with concepts that often foresee how we would feel in the future (Yang, 2021). Emotions can become the predictions of our future lives and experiences (Yang, 2021).

Following the concept of emotional granularity, I further discuss what are the tools and methods that help to understand emotions. One of the ways to gain understanding is through using emotional wheels.

#### 2.3.1 Robert Plutchnik’s wheel of emotions

In the 1980s, a psychologist named Robert Plutchnik came up with an interesting approach to emotions (Plutchik, 1984). He claimed that there are eight main emotions, and they can be linked with one another (Plutchik, 1984). To illustrate his approach, he came up with an emotional wheel where opposite emotions were linked to each other (Plutchik, 1984). For example, anger is connected to fear and can be interpreted as the opposite (UWA, 2019, p. 9). Plutchnik’s wheel of emotions can be used as a tool to name emotions and to navigate within the emotional vocabulary (Plutchik, Emotions: A general psychoevolutionary theory. Approaches to emotion, 1984). Moreover, Plutchnik’s wheel of emotions can be used to understand the connections between emotions (Plutchik, 1980).

When understanding the connections, it can be easier to understand the context of some emotions. For example, understanding that behind anger there can be various negative emotions such as sadness, pain, fear, etc., could help us be less judgemental and more compassionate for ourselves and others (Brown B., 2021).

Plutchnik’s emotional wheel included primary emotions with the representations of three intensity levels (Plutchik, 1984). Meaning that the most intense emotions were in the centre of the wheel, and they decreased in intensity when they moved further from the centre (Plutchik, 1984). He also explained that emotions that were near each other in the wheel were similar, for example, joy and trust and the emotions that were facing each other, were the opposites (Plutchik, 1984). He visualised his theory about emotions into a multidimensional model which can be “opened” and seen in 2D as well (Plutchik, 1984).
In conclusion, Plutchik’s emotions wheel can be beneficial in understanding the connections between emotions, and the level of intensity of emotions, consequently it can increase the emotional vocabulary (Plutchik, 1984).

The visual representation of the wheel of emotions can be found via link: https://tinyurl.com/285fve62.

2.3.2 The Feeling Wheel by Gloria Willcox

Another tool for understanding and naming emotions was created by Dr. Gloria Willox and was called The Feeling’s Wheel (Willcox, 2017). This wheel helped people to find the precise feeling and helped them to communicate it to others (Willcox, 2017). This tool was also in a shape of a circle and the middle, it had the main feelings which consisted of feeling sad, mad, scared, joyful, powerful, and peaceful (Willcox, 2017). The second and third layers in the wheel represented the words that were secondary to the feelings in the middle (Willcox, 2017).

Willcox’s tool could help people learn to recognize their feelings and help them express them (Willcox, 2017). In addition to that, after people understood and knew how to name their feelings, The Feelings Wheel could also help to change their feelings, for example, if a person was experiencing negative feelings and recognized them in the wheel, a person could look at what were positive feelings in the wheel and try to change their emotion (Willcox, 2017).

The visual representation of the Feeling’s Wheel can be found via link: https://tinyurl.com/yxhvtf8n.

2.3.3 Personal emotions wheel by an artist

While searching for more emotional wheels I came across an artist’s Abby Vanmujen’s wheel of emotions (Vanmujen, 2020). It consisted of customized colours created with watercolour, and personalized words of emotions (Vanmujen, 2020). The typography was visually appealing and artistic (Vanmujen, 2020). The visual representation of the wheel can be found via link: https://tinyurl.com/3pf9uswy.

This was an interesting example how artists could contribute to the well-being and emotional awareness. It gave me the idea that tools from psychology, such as emotional wheels, could be customized personally depending on an individual’s perception of emotions. For example, adding their own colours, shapes or even introducing new words. I took this idea into consideration when organizing the workshop.

2.4 Summary of theory about emotions

To conclude the section on the theoretical framework about emotions, it is evident there are various theories on emotions and different emotional wheels. However, how do the knowledge and the methods such as emotional wheels become easy and accessible tools for everyday usage? It could be the case that emotional awareness could be perceived as demanding and time-consuming for young adults to reflect on every day. That is why I proceeded to investigate how user experience and technology can help gain a better understanding of emotions.
2.5 Providing meaning through user experience design

It is evident that great user experience can make users feel incredible, inspired, and live through something that initially would need a special setting but can provide that experience without additional requirements (Hassenzahl, 2011). A well-designed user experience can add meaning and provide more value in our lives (Hassenzahl, 2011). In emotional awareness context, learning to understand our emotions often is challenging because of complexity of the subject. However, when we do understand our lives better through emotions it can be rewarding and enlightening. One of the ways to help users understand their emotions through design can be by providing a meaningful experience of enlightenment.

A great example of significant experience without having specific setting is the product called “Wake-Up Light” created by Philips (Hassenzahl, 2011). It recreates the feeling of waking up in a sunny environment, bird sounds make it sound like the user is in a spring or summer season, overall creating refreshing morning experience (Hassenzahl, 2011, p. 1). Philips “Wake-Up Light” example that Marc Hassenzahl (2011) describes as a great user experience is a replacement of the real experience and cannot provide the same experience of waking up in a sunny place (p. 1). However, the Philips lamp enhances the feeling because it focuses on the experience itself (Hassenzahl, 2011).

Overall, a good user experience could be described as a challenge that seeks to transcend the material, the experience should go beyond the material, thing, or device (Hassenzahl, 2011, p. 1).

Relating the Philip’s lamp example of meaningful user experience to emotional awareness - a well-designed user experience can support users to become more aware and enlightened. Also, a well-designed user experience can show users that they do not need external factors to be more emotionally aware. The thing or material through which the experience is being translated, could empower users, and show that they are capable of the awareness themselves. Then, I thought how one can transcend that experience through technology or a physical material?

Another meaningful experience example can be a movie called “Charlie and the Chocolate Factory” (Hassenzahl, 2011) based on Roald Dahl’s story (Burton, 2005). The story is about a boy that comes from a low-paid family and one day is offered to explore a chocolate factory (Burton, 2005). In the end, the boy did not hesitate and instead of selling the ticket and supporting his family, he chose a meaningful experience (Hassenzahl, 2011, p. 2). The example portrays that in some cases people tend to choose experiences over money (Hassenzahl, 2011, p. 2). When designing experiences and intending them to bring value one can remember that the experience should bring meaning based on subjective users’ needs (Hassenzahl, 2011).

It is fascinating how the example from a movie can be an inspiration when designing a user experience related to young people’s well-being. This brings to a movie called “Inside Out” where main character called Riley goes through life with five emotions - Joy, Anger, Sadness, Disgust and Fear (Docter & Delcarmen, 2015). These emotions are characters that live in her mind and help navigate life (Pixar, 2015).

One of the main aspects of providing users a meaningful experience through a device or other product, is by ensuring that that the experience fulfils the need of the user (Hassenzahl, 2011, p. 3). For example, positive, meaningful experience could be described as receiving a sweet text message from
a loved one (Hassenzahl, 2011, p. 3). In this example, phone is being used to transform the experience and its correspondents with user’s need to feel fulfilled and loved (Hassenzahl, 2011, p. 3).

Another great experience is writing a letter by hand to someone (Hassenzahl, 2011). When someone is writing a letter, they are taking time to think about it and since the nature of writing a letter is slow, a person can slow down and reflect (Hassenzahl, 2011, p. 4). Once a person is done writing it, she has a “product” that is her own and shaped by her, it becomes her personal story (Hassenzahl, 2011, p. 4). The experience in this example is what is being owned at the end of finishing writing a letter and how it by making it a personal story, create a meaningful experience (Hassenzahl, 2011, p. 4).

2.5.1 The Why, What and How model

Hassenzahl (2011) explains the process for designing an experience by providing three levels: The Why, What and How levels (p. 6).

The What level basically explains the products through which the experience is a design function (Hassenzahl, 2011). In other words, all activities, and tasks that user can do through the product represents the What level (Hassenzahl, 2011). A simple example of this level could be learning a vocabulary of a new language through a mobile phone.

The How level talks about deeper connection to the product or a device which is being used to create an experience (Hassenzahl, 2011). In this case it can be expressed through user interface and what kind and how many buttons user must go through to have the experience (Hassenzahl, 2011).

The Why level is about a deeper meaning behind the experience (Hassenzahl, 2011). Hassenzahl (2011) talks about the example where a couple sends loving text through phone in this way creating an experience that fulfils the need of love and attachment (p. 6). The meaning behind sending sweet messages is the Why example in this case and supports the argument that the Why level needs to represent the motivation why to use the product and go through the experience (Hassenzahl, 2011, p. 6).

All in all, I can conclude that when designing for experience it is important to understand the meaning behind the design and use products and materials just as tools (Hassenzahl, 2011). Providing a meaningful and useful experience to the user could embark the curiosity and interest in users and in this way could go towards more meaningful purpose in helping users to understand emotions and spread the awareness. This leads to the next section where I discuss how to make an impact when working with positive design.
2.6 Positive Design Approach

When designing for well-being in general, it is important to realise that the design solution or the artifact should have a positive impact (Desmet & Pohlmeyer, 2013). There is no doubt that design can have a positive impact on people and contribute to their happiness and overall well-being. However, it must be designed in a specific manner.

One of the most common thinking about happiness from the past has been that having money can allow us to buy things and products that would make us happy (Desmet & Pohlmeyer, 2013). The most recent approach to happiness has changed from the past and now people seek for meaningful experiences (Desmet & Pohlmeyer, 2013). In other words, having money can be beneficial for buying the experiences that would make our lives more meaningful (Desmet & Pohlmeyer, 2013).

There is an idea that personal wealth is becoming a way to see wealth as a tool for a meaningful life because it allows to have the freedom to purchase the experiences that align with people’s values (Desmet & Pohlmeyer, 2013). This idea is a great opportunity for design because the products or resources that are produced through design can also become sources that provide happiness and meaning (Desmet & Pohlmeyer, 2013).

One of the examples on how design can bring positive emotions is a design concept called “Thankful Rotterdam” designed by G. Santokhi & S. Vanhoof (Desmet & Pohlmeyer, 2013, p. 6). In this design concept, users are taking a walk in one of the parks in Rotterdam during Autumn season and they see one tree that still has leaves (Desmet & Pohlmeyer, 2013, p. 6). When they come closer, there is an opportunity for them to write their gratitude on the note and attach it to the tree (Desmet & Pohlmeyer, 2013, p. 6). Participants can also see other people’s notes and after writing their own and seeing other people’s gratitude, participants continue their walk feeling grateful (Desmet & Pohlmeyer, 2013, p. 6).

2.6.1 Positive Design structure and framework

The Positive Design approach aims to make an impact on users’ subjective well-being (Desmet & Pohlmeyer, 2013, p. 7). The positive design framework has three categories: design for virtue, design for pleasure and design for personal significance (Desmet & Pohlmeyer, 2013). If all three categories are taken into consideration when designing for subjective well-being, then users can experience flourishing (Desmet & Pohlmeyer, 2013). When designing with positive design framework in mind, it is not always the case that there is equal focus on all the categories, instead there can be an emphasis on one of the categories (Desmet & Pohlmeyer, 2013). It is also important to mention that if the positive design is focusing more on one of the categories, it is important that it does not have a negative impact on other categories (Desmet & Pohlmeyer, 2013).
2.6.2 Design for pleasure

The Design for pleasure category is about being in present, understanding what’s happening now and appreciating the moment (Desmet & Pohlmeier, 2013). Being in moment often brings joy and is all about feeling relaxed and not overwhelmed by any problems (Desmet & Pohlmeier, 2013). In general, design solutions can boost positive experience or at least minimize the negative ones and the impact of design for pleasure should be rather positive than negative (Desmet & Pohlmeier, 2013, p. 8).

When designing for pleasure, the emotions that spark positive impact can play a role (Desmet & Pohlmeier, 2013). The great example is from a student I. Owusu who designed a meaningful solution for dementia patients focusing on one emotion that they were lacking in their lives which was pride (Desmet & Pohlmeier, 2013, p. 8). I. Owusu designed a social activity during which patients played their songs from their past on a physical music player (Desmet & Pohlmeier, 2013, p. 8). This activity evoked positive memories from the past and most importantly boosted the feeling of pride (Desmet & Pohlmeier, 2013, p. 8).

2.6.3 Design for personal significance

The second category of positive design is design for personal significance (Desmet & Pohlmeier, 2013). It is evident that meaning comes from individual understanding of happiness (Desmet & Pohlmeier, 2013). In this category the focus becomes not short-term effect of happiness but rather focusing on individual long-term goals, dreams, and achievements (Desmet & Pohlmeier, 2013). In this category design solutions or products can become tools that help to achieve those personal goals, for instance, running shoes can support our goal in becoming better in running (Desmet & Pohlmeier, 2013, p. 9).

This category made me reflect on emotional awareness, in a sense that, the design artifact I worked on could empower users to understand themselves better and after doing so improve their overall well-being and therefore their happiness.

Design products in this category can also be used as reminders of a user’s goals, as well as play a role in reminding the achievement of the user’s previous goals (Desmet & Pohlmeier, 2013, p. 9). A great example of this is a design system by I. Höhler who’s design solution enables elderly women to empower them to work out but at the same time provides a reminder with notifications to meditate (Desmet & Pohlmeier, 2013, p. 9).
2.6.4 Design for virtue

In this category the idea around happiness transforms to users’ behaviour, questioning if the user is behaving virtuously (Desmet & Pohlmeyer, 2013). The idea is that there is an ideal behaviour which enables having a meaningful and happy life and the design for virtue is encouraging to strive to reach that kind of behaviour (Desmet & Pohlmeyer, 2013). In other words, design can support the attempts to become virtuous, for example a product like eyeglasses support better vision and learning (Desmet & Pohlmeyer, 2013, p. 9).

In a context of my project, a design artifact meant to promote emotional awareness and help understand emotions by providing emotional vocabulary is a solution that supports positive impact on wellbeing. Relating the category of design for virtue to the idea of emotional awareness, the final design artifact supports the behaviour of noticing and understanding emotions in a more precise level.

Overall, positive design framework is a new and novel approach focusing only on improving people’s well-being through flourishing experiences (Desmet & Pohlmeyer, 2013) that can be valuable when designing an experience focused on the understanding of emotions.

2.7 Designing for learning experiences in a digital age

During an experience of becoming better in self-awareness requires a part that involves learning. One should simply remember what they felt during a specific period and what kind of emotion that event inspired. The learning can happen in any form and can be very individual. I was curious to know how to design for learning experiences in an era where digital tools are everywhere.

Certainly, if one wants to learn more about emotions and become more emotionally aware, have the language to describe emotions and have an overall better self-awareness to simply live a better life, one can just open and read a relevant book about it. However, how many of us, especially young adults, find learning from a physical book quite unappealing. Especially in an age where we have digital, interactive alternatives that can be more engaging than a book. In this section I discuss the importance of using technology to our advantage and learning experiences for a design artifact.

2.7.1 Learning assumptions

To design a meaningful experience that would help young adults to understand their emotions and consequently improve their well-being and self-awareness, it is important to see it as a learning experience. One must understand emotions through their definitions, and one must know how to name emotions precisely (Barrett, Gross, & Benvenuto, 2010). Similarly, to learning a new language, getting to know new emotional words is a learning experience.

Before starting to look at how learning experiences could be structured, it is important to determine the audience. Malcolm Knowles made a clear distinction between child and adult learners and the differences were reflected in his learning assumptions (Baird & Fisher, 2005). These learning assumptions included: the skill to clearly see the self, the readiness to start learning, whether the
person has previous experiences or not, and one’s inner motivation to have a learning experience (Baird & Fisher, 2005, p. 6). The motivation to learn is a significant characteristic and it often depends on one’s self-esteem and confidence in ability to learn (Baird & Fisher, 2005).

### 2.7.2 Robert Gagne: 9 types of Instructional Events

American educational psychologist named Robert Gagne developed the 9 types of Instructional Events to explain how learning process works (Baird & Fisher, 2005).

Gagne’s model provided aspects that can help in creating a learning experience that has positive outcomes (Baird & Fisher, 2005). Those are: one must ensure to achieve a learner’s attention, the learning experience should have a learning objective, then the experience should remind previous knowledge or give suggestions for relevant knowledge, then there is a presentation of the content which aim is to teach the material, after that, a learner is provided with a guide together with feedback, after the learner answers the task, there is an assessment and an example of relevant content (Baird & Fisher, 2005, p. 8).

Previously, social learning experience required presence of a teacher and a student in the same space (Baird & Fisher, 2005). When technology emerged, it became possible to learn together but digitally, it did not require everyone to be in the same place physically (Baird & Fisher, 2005). Since, our society is digitalized, it is important to understand how to take advantage of technology and improve the learning experience with technology.

Similarly, to Gagne’s model, applying learning experience to online design takes these steps into consideration: first when designing for learning we must gain attention (Baird & Fisher, 2005, p. 9). Gaining attention can be achieved through showing the variety of examples of the subject we are trying to teach (Baird & Fisher, 2005, p. 9). Then we start to ask a question which is meant to help users understand what they are learning (Baird & Fisher, 2005, p. 9). Another step is to remind users of previous learning and for example show the definitions of the subject (Baird & Fisher, 2005, p. 9). Later, it is important to show the stimulus and guide learning by showing the examples (Baird & Fisher, 2005, p. 9). Then asking students to create something related to the subject (Baird & Fisher, 2005, p. 9). Providing feedback is an important part of learning and finally at the end of experience we can provide scores of the results (Baird & Fisher, 2005, p. 9).
3. Method – UX oriented Research through Design

This chapter describes the general research method used and the specific design framework with the arguments for chosen methods.

3.1 Research through Design

To answer the research question - how might we design a digital thing that offers a user experience to enrich emotional vocabulary in young people, an overall method was the Research through Design (Stappers & Giaccardi, 2017).

The Research through Design method is a combination of two components – the research and the design practices (Stappers & Giaccardi, 2017). In the research component, the aim is to produce new knowledge for other researchers to use and apply within their areas of focus (Stappers & Giaccardi, 2017). While on the other hand, the design component is a more practical part of solving a concrete problem that applies to the everyday world (Stappers & Giaccardi, 2017).

There are other components that are part of the Research through Design method, such as: artifacts, prototypes, design practises and experiments (Stappers & Giaccardi, 2017). The artifact is an object that is produced during the design process and the prototype is used to understand the interaction that is being researched through design (Stappers & Giaccardi, 2017). Design practise is usually a designer’s way of doing the process and the experiment can be a controlled research testing and can be exploring situations from the real world (Stappers & Giaccardi, 2017). In this project, the design artifact was an interactive digital prototype, and the design practise was the methods that were used throughout the design process.

In this project, the Research through Design method (Stappers & Giaccardi, 2017) was applicable because the project had dual purpose. The theoretical knowledge about the psychology of emotions was applied to design research and the combination of both was used to challenge the idea of how a digital thing can be created to inspire youth to become more aware of their emotions.

Moreover, the topic of emotional awareness in young people required a divergent and convergent research approach to examine why something so human-like can be often misunderstood, not well talked about, and rarely discussed in our society, especially among youth. Moreover, starting from a broad perspective on emotional awareness and working towards finding a meaningful solution that could inspire young people to talk about their emotions and use accurate emotional language in their everyday lives, there was a need for a clear structure for the design process. For that I used the Double Diamond framework (Design Council UK, 2005) which helped to organize the work and adapt to divergent and convergent thinking.
3.2 The Double Diamond design model

The Double Diamond is a framework used in different design projects (Design Council UK, 2005). The framework could be used to help with ambiguous projects or simply to prioritize projects by starting broad and narrowing down, in other words using divergent and convergent thinking (Ball, 2019).

The design process had four stages – discovering, defining, developing, and delivering (Ball, 2019). The first phase was about understanding emotional awareness among youth, discovering the market in general and identifying potential users' needs through chosen methods. Secondly, the defining stage was about understanding the gathered insights and summarizing them into a user persona, then defining a more specific problem by creating a concrete design brief. In the middle point of the Double Diamond, the design process started divergent again and in the development phase as many as possible design solutions emerged and the final solution was chosen as a design artifact. Finally, during the delivery section the final prototype was developed and was validated through user testing. In addition, to give a context for the design artifact, the storyboard was created. Methods for each stage are discussed below.
3.2.1 Discovering

In the discovery stage I was working broad and exploring the topic of emotions in general, as well as, understanding the market and the target group’s needs.

At first, it seemed that it was perfectly suitable for this project to conduct user interviews at the beginning of the project. However, that could have been limiting in the sense that not knowing about the current market could have made me, as a designer, limited in my design thinking. That is why, I felt there was a need to conduct a quick online user survey to get an understanding if the topic is already known for the youth. Validating the topic through online user survey prepared me to have a broader overview how young people perceived emotional awareness. The online survey as a validity tool was a low-cost way for collecting data and was suitable for the beginning of the project (Tomitsch, et al., 2018, p. 102).

After having an overview about how young people understand emotional awareness, looking at the market was necessary to understand how already existing tools tackle the issue of improving emotional awareness. For that the competitor analysis method was chosen. This method was used to gain the understanding and gather the information of the products that already exist and to identify new opportunities for the new solutions (Tomitsch, et al., 2018, p. 42). I was aware that there was a possibility that already existing products were successfully working with emotional awareness. However, the competitor analysis method provided an opportunity to discover the potential issues from existing products that were overlooked. This inspired new opportunities to tackle the challenge of creating a digital thing on emotional awareness with a completely different approach.

Then, a user journey map was used for understanding the steps and the overview of the user experience (Tomitsch, et al., 2018, p. 128). I chose to create a journey map based on the existing digital application that I discovered through competitor analysis. The user journey map was created out of five main stages of the experience: the touchpoints, the thoughts of the user and the feelings diagram based on the steps the user was taking (Tomitsch, et al., 2018, p. 129). Since emotional awareness in general requires involvement and actions from the user, such as taking notes of emotions, reflecting of emotions, or learning about different emotions, it was important to investigate the steps a user had to take when interacting with a tool. This method was chosen because it highlighted the issues that a user was facing during the experience of an existing tool, and it helped to think of a better solution.

Finally, the last part of discovering phase was about understanding the target group through the semi-structured individual interviews. Since the topic is personal and can be perceived as intimate, the interviews were chosen as a flexible tool to understand the users’ needs on a deeper level (Tomitsch, et al., 2018, p. 102). The semi-structured interviews were chosen with already prepared script of specific questions to draw conclusions how different people answer the same questions but also having a space for a less structured conversation depending on the answers. The semi-structured individual interviews provided the freedom of shifting the conversation depending on how the user is answering the questions which ensured safety. Also, semi-structured framework allowed more flexibility and the depth of understanding on how young adults express and think of their own emotions. In consequence it gave a more diverse design directions for the final design artifact.
3.2.2 Defining

In the defining phase all insights and the gathered data from the discovery phase were summarized. The insights and user needs were summarized to a fictional character and were used as a reference that helped to have an overview of the potential user needs, ensuring of creating a product that is user centred (Tomitsch, et al., 2018, p. 100). It also allowed to highlight the user’s motivations and frustrations. After that, the midpoint of the Double Diamond design process was reached. Then, I created a short design brief based on the Business Opportunity Statement by IBM (Goldberg, 2023). It helped to have a more detailed understanding about the design challenge when moving forward to the other phases. Also, this is where I specified my design challenge to be focused on learning the emotional vocabulary.

3.2.3 Developing

After defining the specific design problem, the ideation phase followed. For this a workshop setting with potential users was chosen to come up with user centred design solutions and to create a design artifact that young people perceived engaging. Also, a co-design workshop allowed to come up with more diverse design ideas. Besides getting inspiration from the users for the innovative ideas, the second part of the workshop was used to validate the emotional awareness tools gathered during literature review and to see if that could help with emotional vocabulary. In addition, I chose a workshop as a method because it created empowerment, encouraged teamwork and collective thinking (Tomitsch, et al., 2018, p. 68).

After the workshop, I collected the ideas, made conclusions from the literature validation part and final ideation on my own started. Then, the Random Input Technique (Bono, 1993) was used to come up with several potential solutions for the final design artefact. I sketched the ideas on paper and compared the design solutions. After that I chose the final idea.

After choosing the final idea, the paper prototyping started, and it was tested on a potential user to validate if the concept is understandable. Testing at early stage, helped to validate if the solution was going towards answering the research question. Later, the concept was adapted to the feedback and developed further.

3.2.4 Delivering

In the final delivering phase, I focused on building an interactive prototype that user could fully interact with through the chosen screen. The medium-fidelity prototypes were transformed into high fidelity prototype. Then I started exploring the visual style of the prototype, drew the illustrations and finalized the typography, as well as chose the colours. Then, the user testing was performed individually to avoid groupthink. In addition, to communicate possible use situations of the artifact, storyboard was created.
4. Preparatory fieldwork

This chapter provides the execution of the design process through an online user survey, competitor analysis, user journey mapping, individual interviews, user persona, and a design brief.

4.1 Emotional awareness through quantitative data

To validate if emotional awareness is something that young adults can understand and fully comprehend, an online user survey was conducted. The survey was three minutes long because the focus was to validate the topic. It was spread among Linkoping University students' groups on social media and multiple popular messaging applications within the university.

Since, the survey was made of questions related to the topic, it did not include demographic information because the topic of emotions can be viewed as universal and is relevant no matter age or gender. However, later through individual user interviews I realized that due to society’s stigma and expectations to stay “strong”, men talk about emotions differently and are more likely to not share them. It could be valuable to include a question about responders’ gender, however the initial aim of the survey was to validate the topic.

The survey was designed in a way that it had conditional questions depending on the participants’ answers. In this way it was ensured that responders were asked only those questions that were relevant to them, making the survey more targeted and insightful. The questions were intended for two kinds of audiences – the ones who have heard of emotional awareness and had some knowledge about it, and the ones who have never heard of emotional awareness and rarely thought of their emotions.

Figure 7 Online survey structure with conditional questions

The questions for those who have heard about emotional awareness focused on validating if understanding their emotions was important to them, seeing if they had rich emotional vocabulary by asking if they were able to name more than eight emotions, understanding if they were already using a tool to help understand their emotions and seeing if they would like to be able to access more research grounded information regarding the topic of emotions.

For those who chose an answer “no” to the second question: “Have you heard of emotional awareness before?”, the focus was to see if they find it difficult to name their emotions, to validate if the problem is
in the limited emotional vocabulary, showing what it means to have a rich vocabulary then asking if this is something they would feel would be interesting and important for their everyday lives.

The full online survey with detailed questions and answers is provided in Appendix A.

4.1.1 Insights from the online survey

Within a week, twenty-five responses were received from young students around the university. Even though I spread the survey in relevantly large online groups of students, the number of responders was not that high. Also, the effort of making the survey short and focusing on only relevant questions did not help to get higher number of responders. However, even with twenty-five responders I was able to draw conclusions about the importance of the topic.

It seemed from the survey results that 80% of the survey respondents heard of emotional awareness as a topic, however not all felt confident about it. Interestingly, 90% of survey participants answered that they never had any formal education about emotions before starting higher education. From the answers I learned that the ones who have not heard of emotional awareness were eager to try a tool to learn more about emotions. I could see that there was a curiosity and young adults were willing to work with themselves, which could be one of the most important aspects of becoming emotionally aware. On the other hand, only 40% of the survey participants answered that they reflect on their emotions regularly and daily.

Overall, I can conclude that all participants said that understanding emotions was important to them. Through that I received the confirmation that my intended target group cared about their emotions and found emotional awareness a relevant topic to consider for their daily life. After getting the validation of the topic, I proceeded to research the already existing products that tackle the topic of emotions.

4.2 Competition – what is out there?

To see what products were focused on emotional awareness, I followed a competitor analysis method (Tomitsch, et al., 2018, p. 42). During the exercise I researched the products that are in some way related to emotions and created a list of six products in total. Then, I created a list of relevant variables that fit the target group and the topic of emotional awareness. After that, I formulated the findings into the table and started the analysis (Tomitsch, et al., 2018, p. 43).

I found out that there were a lot of digital tools, such as mobile applications, movies, interactive websites on a topic of emotions. For the exercise not to be focused only on the digital products, I researched physical products as well.

Best mood tracking mobile applications chosen in 2023 were Moodfit, Worry Watch, MoodTools, PTSD Coach, eMoods, Bipolar Mood Tracker, MoodKit, Mindshift CBT, Daylio (Valera, 2023). Some of them were focusing on specific mental health issues, such as bipolar disorder, and only few were more focused on understanding emotions (Valera, 2023). The latter were Moodfit and Daylio which I included into the competitor analysis table. To not be focused only on mobile applications, I found a 10-week course created by Healthy Gamer, which focused on users who were struggling with video gaming addiction and who aimed to understand their emotions better (Healthy Gamer, 2023).
Additionally, to the digital products, I explored the physical cards that could help with emotional awareness. I came across *The language of emotions* cards by Karla McLaren (Karla McLaren, 2023) and *Emotional Barometer* by The School of Life (The School of Life, 2023).

After finding the competitors, I brainstormed the most relevant variables based on what contributed to increasing emotional awareness. The variables were: a wide range of emotions, summarized emotions data for self-reflection, how emotions were visualized, guidance on how to choose an emotion, and whether the information is grounded by research. In addition, I considered variables that might influence young people to use the product. Such variables included whether the product was paid or free and whether the product had a social feature, it was important to understand how appealing the visual design was and how easy was to use the product. I included a few negative variables, such as the product having poor visual design or being paid because it was easier to sort out the most suitable product. In the end, I collected twenty variables that were important from an emotional awareness and user experience perspectives. The variables were placed in the table which can be found below.

Finally, after having both the products and variables placed in the table I started to go through the products and started to check which variables fit each product. To evaluate which product has the highest potential in being used by youth and is focused on emotional awareness, I marked the variables with * symbol where they fit the product. This helped to see which product had the highest number in positive variables.
<table>
<thead>
<tr>
<th>Variables</th>
<th>How we feel</th>
<th>Moodfit</th>
<th>Daylio</th>
<th>Healthy Gamer Practical toolkit</th>
<th>The Language of Emotions Cards by Karla McLaren</th>
<th>Emotional Barometer by The School of Life</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Specifically meant to learn emotional language</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>2</td>
<td>Wide range of emotions (more than 20)</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>3</td>
<td>Limited range of emotions</td>
<td>*</td>
<td>*</td>
<td></td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>4</td>
<td>Emotions represented by words</td>
<td>*</td>
<td>*</td>
<td></td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>5</td>
<td>Emotions represented by images</td>
<td>*</td>
<td>*</td>
<td></td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>6</td>
<td>Extra features - coping tools, mindfulness, sleep etc.</td>
<td>*</td>
<td>*</td>
<td></td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>7</td>
<td>Option to write an event related to emotion</td>
<td>*</td>
<td>*</td>
<td></td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>8</td>
<td>Social feature, ability to share with friends</td>
<td>*</td>
<td>*</td>
<td></td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>9</td>
<td>Summarized data of emotions for reflection</td>
<td>*</td>
<td>*</td>
<td></td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>10</td>
<td>Free</td>
<td>*</td>
<td>*</td>
<td></td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>11</td>
<td>Paid</td>
<td>*</td>
<td>*</td>
<td></td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>12</td>
<td>Attractive visual design</td>
<td>*</td>
<td>*</td>
<td></td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>13</td>
<td>Poor visual design</td>
<td>*</td>
<td>*</td>
<td></td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>14</td>
<td>Easy navigation</td>
<td>*</td>
<td>*</td>
<td></td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>15</td>
<td>Option for several languages</td>
<td>*</td>
<td>*</td>
<td></td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>16</td>
<td>Clear guidance how to choose an emotion</td>
<td>*</td>
<td>*</td>
<td></td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>17</td>
<td>Grounded by research</td>
<td>*</td>
<td>*</td>
<td></td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>18</td>
<td>Accessible on several platforms</td>
<td>*</td>
<td>*</td>
<td></td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>19</td>
<td>Practical</td>
<td>*</td>
<td>*</td>
<td></td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>20</td>
<td>Not practical</td>
<td>*</td>
<td>*</td>
<td></td>
<td>*</td>
<td>*</td>
</tr>
</tbody>
</table>
4.2.1 Insights from the competitor analysis

The results of the competitor analysis were that the mobile application called How we feel had the highest number of variables that helped become more emotionally aware, was free of charge, had relatively easy navigation, and had an appealing visual design. I proceeded to download the application and investigate it more in-depth. I was impressed by the visual style, interaction, and focus on emotional vocabulary.

However, after trying the How we feel mobile application I noticed the lack of research about emotions grounded guidance. Furthermore, it was not clear how to pick the right emotion at the beginning of the experience. In addition, there were a few words that did not particularly resonate with my experiences. Even though, had a lot of options to choose from when it came to emotional words, there was no option for writing personal words that represent an individual’s feelings or helping a user to define their emotions better. In addition, during the experience of using the How we feel application, I lacked a clear explanation on how to pick a correct emotion, what steps I should be taking to be more emotionally aware, and how I could learn and increase my emotional vocabulary.

I was curious if students at my university environment heard of the How We Feel application, I asked a few fellow students if they knew about it and found a student who was interested in becoming more emotionally aware. I introduced to the student the How We Feel mobile application and the student used it for around a week. I was interested to see how the process went and proceeded to talk about it with the student and mapped out the steps of the user experience.

4.3 User journey mapping

I had an informal chat with a user who was using the How We Feel mobile application and registering emotions regularly. I wanted to know if the product answered all my concerns if the product increased the level of emotional awareness. During the conversation with a user, I asked to tell me more about the experience, the things the user liked about the application and things that did not particularly work well. The thoughts that the user provided during the conversation were summarized in a user journey map below. The journey map consisted of five stages, the activities in each stage, touchpoints, emotional journey, and the user’s thoughts throughout the process (Tomitsch, et al., 2018, p. 129).

The pain points and negative thoughts were highlighted in bold in the user journey map below.
<table>
<thead>
<tr>
<th>Stages</th>
<th>Visits the app</th>
<th>Registers the emotion</th>
<th>Includes different activities</th>
<th>Uses the resources</th>
<th>Reflects on their emotions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Activities</td>
<td>Notification shows up and user opens the app</td>
<td>Presses + symbol and picks 1 out of 4 colours representing the emotion they feel at the moment</td>
<td>After choosing emotions user writes down what they were doing and other related notes.</td>
<td>Explores other video resources out of curiosity.</td>
<td>After using the app for four days, user sees the statistics and overall emotions throughout the day. User reflects on the emotions and decides to change some emotions.</td>
</tr>
<tr>
<td>Thoughts</td>
<td>Notifications are very useful because they remind me to reflect on my emotions. Without them, I might not be able to go on the app.</td>
<td>I tend to register the negative emotions more often than positive ones. Sometimes I want to add emotions later, after a day or so, but cannot go back.</td>
<td>I don’t write the activities related to emotions. However, I think it would be interesting to know what events are related to some emotions.</td>
<td>At the start of using the app, I watched the recommended videos but eventually I stopped because they did not feel personal. The videos seem retro but generic.</td>
<td>After seeing the graphics of the week, I’m inspired to look for more information on my own for even better self-reflection. The app inspired me to read more about the topic.</td>
</tr>
<tr>
<td>Emotional journey (assumption)</td>
<td>Neutral - got notification and wants to fit in the emotion</td>
<td>Confused - difficult to understand which one to choose</td>
<td>Curious - the videos seemed nice and professional</td>
<td>Proud - did the work to reflect on emotions</td>
<td>Inspired - wants to know more and reads books after seeing the charts</td>
</tr>
<tr>
<td>Touchpoints</td>
<td>The app</td>
<td>The app</td>
<td>The app</td>
<td>The app</td>
<td>The app Literature</td>
</tr>
</tbody>
</table>

*Figure 8 User journey map based on “How We Feel” mobile application (user icon is generated by Open Peeps (Stanley, 2019))*
4.3.1 Overview of the journey map

The user noticed that there was a need to open the application more often when experiencing negative emotions rather than regularly checking in. Another insight is that the notification feature helped with habit forming which in turn supported the reflection part of the emotional awareness.

In addition, the user noticed that it was not possible to type a personal word that resonated with them. This in turn, might have limited the self-awareness part because the provided words could not resonate with the user. Also, it was not possible to add emotion from previous days. That caused the feeling of irritation. Even though the emotions list provided in the app was extensive, the user at times struggled to find the accurate emotion that they wanted to choose.

The beginning of the experience had four levels of emotions which was confusing and did not provide a clear guidance on how to proceed in deciding the levels. Furthermore, the user struggled with choosing the emotion when they were feeling somewhere in between two emotions. In contrary, the wheel of emotions can provide the words that are the combinations of several emotions, and the visual representation of the wheel provides options of words in between two emotions.

Moreover, the user struggled with adding the events related to the emotions. However, the user thought that understanding the event that caused the emotion was quite beneficial when it came to a higher sense of self-awareness. Even though it was possible to add the event when registering an emotion into the application, the user thought that there were other features that could be distracting, such as adding voice message or photo to the event. The user thought that if a user experience when adding the event related to the emotion could be easier, then the user could add more events when registering emotions.

In the following stages, the user found the videos professional and in high quality. However, the user did not watch them because over the time they became less personal and more generic. Finally, after using the application for a week, the user received informative infographic on their emotions and got inspired to learn more about emotional awareness and self-reflection. The application *How We Feel* became an entry point for inspiration and encouraged the deeper learning.

To draw conclusions from this user journey mapping, it seems that the application could have a positive impact on emotional awareness. However, I noticed that there were still gaps in helping user to understand their emotions better, the words used were not always resonating with the user and sometimes there was a lack in guidance grounded by research.

Overall, the application was well developed and with few adjustments could be a great tool for young people to learn about their emotions. However, the usage of application required commitment and persistence in habits formation because if one did not have a discipline to take time to note their emotions, there would not be any positive impact. After all, without self-reflection one cannot become more emotionally aware. At this point I started wondering if it would be possible to create a solution that would not require a lot of commitment but still would help people to understand their emotions.

After examining competitor analysis and reviewing the user journey based on the relatively best product in the market, I was curious how young adults understand their emotions, how they talk about them and what stops them from becoming more emotionally aware or the opposite.
4.4 Understanding emotional awareness through interviews

I held eight semi-structured interviews with young adults. The interviewees were from eight different nationalities. Four of them were from individualistic cultures, the other four were from collective cultures. I interviewed five females and three males. The interviewees were mostly from university environment and came from different professional backgrounds: computer science, medicine, psychology, design, and physics. Young adults with different backgrounds provided diverse insights for the design concepts. The script of interview questions can be found in Appendix B and the more detailed insights from each interviewee can be found in Appendix C. For privacy reasons, interviewees are anonymous. In this section, I discuss interview insights and findings.

4.4.1 Insights from interviews

At the beginning of each interview, I asked a very common question - “How are you?” and examined what kind of language people would use to answer this question. Some of the interviewees used generic, usual language, and some of them replied in very rich emotional language. Depending on their answer, I proceeded to ask why they answered in such ways and the reasons varied – different cultural backgrounds, not comfortable to share with me at the start of the interview or opposite – very comfortable to talk how they are because they felt confident. The answers to the first questions made me wonder, why talking about our emotions is only comfortable to us in a trusted friendly environment. Would society be emotionally healthier if we could find a middle ground where we share openly about our feelings no matter the environment instead of generalizing and hiding them?

Other interview questions were about whether it was hard or not hard to talk about their emotions and why. All interviewees gave different reasons, for some it was a cultural stigma, for some showing emotions meant being weak, and for others, there were no issues in talking openly about their emotions. Through these conversations, I learned about different personalities and how emotions are perceived in different cultures. I discovered that in a collective culture, it was more common to speak about emotions with others, hence in individualistic culture people were more centred on their feelings and experiences, more often leaving their thoughts for themselves. However, the lack of emotional vocabulary among the eight interviewees was a common insight even in their native languages. Also, there was some stigma related to males, two of them shared that they tend to be less open about their emotions because of the shame of showing their emotions.

In addition, I was curious to know if young adults use any kind of tools about emotions and the answers varied – some said that they used mobile applications for different reasons - meditation, diet, or tracking menstrual periods, and in those applications, they reflect on their emotional state. Through this insight, I learned that users could learn about their emotions not directly and that might be an effective way to become emotionally aware. In addition, those who tried to reflect on their emotions in another type of application noticed that the guidance was quite generic, and the representation of emotions was not accurate, in addition, it was hard to resonate with the representation provided in those mobile applications.

Another pattern I observed was that young adults who already were curious about self-awareness through emotions were keener to learn about emotions from the books but struggled to keep the
habit of noticing their emotions daily. In other words, they knew and fully understood what was best for them but did not pursue it due to various reasons. Those reasons included, not finding time during the day to take notes of their emotions and reflect.

Then, I asked interviewees about how they manage their negative emotions since very often we start to get curious about emotional awareness only when we notice that negative emotions start to affect us in some way or another. Some of them answered that they try to reason where the negative emotion came from and tried to understand it, while others explained that they normally did not pay extra attention to negative emotions unless it started affecting them physically, such as disturbed sleep, interrupted eating habits or even started to complicate their relationships with their peers or closed ones.

Another interesting insight I got from the interviews was that some students did not understand what kind of emotions were under stress, low energy, or irritation, and having a word to name emotions could have helped to understand the reasons behind frustration or stress. Also, students had full awareness that understanding and knowing how to call their emotions was useful in everyday life situations. For example, one student told me that she would like to know how to understand what makes her feel unpleasant, being able to share emotions with others would deepen her friendships, also understanding how to name her emotions would help to make some decisions better, for example, say ‘no’ more often to the things she did not see a particular value in.

Overall, after the interviews, I could see patterns and similarities in behaviour and thoughts among all interviewees. Students struggled to name their emotions, had difficulty understanding their negative emotions, had difficulty choosing an emotion when there was a variety of emotions provided, and had difficulty understanding the connections within some emotions. Moreover, I recognized some external needs that could be related to emotions – sometimes difficulty forming and navigating relationships, difficulty making life decisions, and difficulty coping with stress. Most of the interviewees wanted to learn more about their emotions but wanted the information to be easily accessible, wanted the information to be grounded by research, and trusted, as well as free of charge.

4.4.2 User persona

After summarizing every person’s frustration and motivation I concluded the findings into a user persona. The potential future user – Laura – is a student in Arts and is curious about learning new words to describe her emotions. Laura’s background, motivations, frustrations, and goals are summarized in the figure below. It is important to mention that this person is fictional and is purely based on assumptions from the interviews.
Laura
Gender - Female
Education - Masters in Arts
Occupation - Student

“I would like to learn some expressions of emotional vocabulary that would say a little more than just "I'm fine". Normally, I dislike the question "How are you?" because of the expected generic answer in our society.”

Backstory
Laura grew up in Luxembourg and moved to Sweden to study masters in Arts. She is finishing her studies soon and looking for a full-time position in Sweden.

Motivations
Laura struggles with understanding herself in different life situations, including at university and in social aspect of her life. Laura would like to use quickly accessible digital tool to deepen her knowledge about emotions and become more in tune with herself.

Frustrations
Laura struggles to find a reliable service that would be free and would not require to go to medical institutions. She tried to use some mobile applications to register her moods, however they provided a generic representation of emotions which did not help her to have a better understanding of herself.

Ideal experience / goals
Laura would like to learn about emotions fast and without much effort. Laura would like to access a free service and convenient to use at any time and any location she wants. She would like to expand her emotional vocabulary and understand herself and others better.

Figure 9 Fictional user persona (Tomitsch, et al., 2018) based on interviews insights. Icon generated by Open Peeps (Stanley, 2019)

The user persona above helped define a potential user in mind when going through further design processes. The ideal experience and goals helped to create a solution that was user focused.

4.5 Design brief

After the competitor analysis, user journey mapping, and especially after the interviews I had a more distinct understanding of what design challenge I was tackling. I proceeded to summarize my findings into a design brief. The short design brief helped to structure my work and what I wanted to focus on precisely, it helped to envision the reason and motivation behind the project while moving to the further design processes. To structure the design brief, I used the Business Opportunity Statement template by IBM Garage as a reference and adapted it to my project (Goldberg, 2023).

Summarized design brief:
The purpose of the project is to make learning emotional vocabulary easy and accessible experience for young adults. From the user interviews, I found out that some students struggled with naming their emotions accurately and keeping the habit of reflection. Looking for ways to improve emotional awareness through learning emotional vocabulary can contribute to better self-awareness and well-being of students. In addition, this could be first step when designing for emotional awareness.

At this stage I reached the midpoint of the Double Diamond framework and was ready to move forward to the developing phase.
5. Concept ideation

Concept ideation consisted of two activities – a co-design hybrid workshop and an individual brainstorming, sketching a few ideas and choosing the final one.

5.1 Workshop preparations

The ideation phase started with planning, creating, and executing a workshop. The workshop was designed to last for forty-five minutes and consisted of two activities – the ideation and the activity where participants were creating their own emotional wheel with a support of emotional wheels discovered through the theoretical framework.

The workshop was a hybrid event and in total had five participants which four of them were present in person and one participant joined the workshop online. The participants came from brand design, service design, psychology, ethic and migration backgrounds. They were all students and were applicable for my design project. The number was appropriate for one workshop facilitator. The tools and templates for the participant online were prepared and shared on Figma Jam (Figma, 2023).

5.1.1 Workshop structure – two activities

The beginning of the workshop was dedicated to creating ideas individually but together. To avoid group thinking, the technique called Vote and Note (AJ&Smart, 2023) was used to brainstorm as many ideas as possible.

The second part of the workshop was creating a personalized emotional wheel. I created an emotional wheel template with six core emotions based on Ekman’s core emotions model (Ekman, 1999) and left empty spot for the secondary emotions. Participants had an opportunity to express their secondary emotions however they preferred – through drawings, colours, or their own words. This helped to understand how youth would express their emotions.

In case, participants had issues in finding the right way to express their emotions, I provided three different emotional wheels - Plutchik’s Wheel of Emotions (Plutchik, 1984), The Feeling Wheel by Gloria Willcox (Willcox, 2017) and Emotion Wheel by Abby Vanmujjen (Vanmujjen, 2020). In case when participants used the provided wheels, I was able to validate how participants understood the words and meaning in them.

The detailed workshop’s agenda can be found in Appendix D, the wheel creation template – Appendix E, and the workshop invitation poster can be found in Appendix F. For the privacy purposes the individual emotions wheels from each participant are not provided.
5.1.2 Workshop execution and insights

I started the ideation session with the following question - “What can be the most effective ways to learn an emotional language for you?”. It was based on the detailed design challenge reached in the middle of the design process.

Figure 10 Workshop’s ideation phase, voting activity. For privacy the participants’ faces are blurred. (Pictures are my own)

Five participants wrote as many ideas as they could for seven minutes, and five minutes were left to choose the best ideas by voting.

After the workshop I gathered all the ideas that were brainstormed and grouped them into six categories – games, journaling/drawing, educational, mobile/digital, social, and professional help. From the clusters’ sizes it seemed that educational and games groups could be considered as the most interesting and engaging ideas to learn emotional vocabulary for young adults.

The games group consisted of the ideas – memory cards, quiz, role-play scenarios, mirroring observations and general gamifications. The educational group consisted of – watching educational video, reading an article about emotional awareness, included into school’s curriculum as a course, listening to audio books, podcasts, dictionary, workshops, visually integrated into everyday life.
During the second part of the workshop, I distributed the templates of the personal wheels. For each core emotion I was reading a situation where the participants could feel the core emotion and asked to express their secondary emotions based on the situation provided. The participants had a freedom to colour, draw, write their own words or use words from the additional wheels provided.

Participants expressed their emotions in different ways - some chose to draw, while others used colours. The emotional wheels by Gloria Willcox (Willcox, 2017), Robert Plutchik (Plutchik, 1984) and Abby Vanmujen (Vanmujen, 2020) were a good reference. However, words in the wheels were sometimes hard to resonate with participants. Moreover, during the activity participants particularly struggled to connect with the emotional wheel by Plutchik, mainly because of new words. However, the connections between emotions were clear in the wheel and participants found the information insightful.

On the other hand, I observed participants connecting with emotional wheel by the artist. Participants told me that the colours looked appealing. Since the artist who created the wheel included the words from their everyday life, it resonated with the workshop’s participants, and they used it frequently as a reference.

Also, I observed that participants tended to write secondary emotions based on their behaviour which eventually allowed them to see that recognizing behaviours regarding specific emotion could help improve self-awareness. In addition, this activity challenged my personal understanding of emotions. It inspired me to think that there were no black and white answers when trying to understand emotions.

In summary, this workshop contributed to the answers of two questions of this project, number 2, and number 3:

2. Are young people confident in emotional awareness, meaning they understand their emotions and can name them easily with clarity or the opposite?
3. Would young people want to use a digital thing to become more emotionally aware?

I learned that young adults were mostly confident in expressing their emotions in some way or another, and could identify their emotions through their own words, by drawing or by looking at their
behaviours. However, not in all cases young adults could name the emotion precisely and I observed several instances during the workshop when participants were thinking what word could represent one or other feeling. According to emotional granularity, one must know how to name emotions precisely (Barrett, Gross, & Benvenuto, 2010).

Through ideation session during the workshop, I realised that a digital tool could be one of the most effective for young adults to use because of easy accessibility and convenience.

Besides the insights workshop has provided, I learned that facilitation requires empathy and compassion skills. There were times when participants did not understand the task ideally and that required an extra help from me, as a facilitator. The facilitation process helped me to connect with my potential users and see their needs with increased clarity.

5.2 Concept development

After the workshop and after I gathered the insights, I turned to my own individual design work and started to brainstorm as many ideas as possible using the Random Input Technique (Bono, 1993). I generated words with the random word generator online (Random Word Generator, 2023).

The first random word that I used was sip. From there I brainstormed and wrote down words that were related to the initial word. I found a lot of similarities with health, water, joy and finally came across the word energy. Then, I started to imagine a possible idea related to learning emotional vocabulary through energy levels. Finally, I came up with the energy pen idea which I roughly sketched.

Then, I expanded the brainstorming session to the white board for more possible solutions while continuing the same technique. This time I started with three random words – allow, authority and silence.

Figure 12 First brainwriting session with a random word "Sip"
5.2.1 Three potential design concepts

The energy level pen idea was inspired by the idea of using everyday items to learn something meaningful. Since the target group was students, be it for sketching, writing notes, or nearly anything in a university environment, the pen could be quite an important object in nearly every student’s life. My idea was that this pen could have six energy levels which represented six core emotions. A student when using the pen could press and mark the energy they were feeling at any moment. The pen automatically would take the signal and send it to the mobile application. At this point, the student could just mark their energy levels or if there was a need, they could review the mobile application and learn what kind of emotions were behind their energy levels. This pen could help to identify and label the emotions associated with different levels of energy.

From the word *allow*, I brainstormed words such as, empowering, growth, knowledge, tools etc. These words triggered the idea of creating a feelings game based on quizzes and questions where users could learn emotional vocabulary. I sketched it roughly and progressed to the other ideas.
Next, I worked with a word *authority* and from there I could come up with similar words such as, empowerment, confidence, understand, creating etc. This word made me think of creating a platform with informational videos where users could watch documentaries or videos about emotions and learn from that. However, the idea did not sound original or creative to me, that is why I did not sketch it and decided to avoid it in the early stage.

Moving on, the last word - *silence*, made me think of hearing, listening, and slowing down. This inspired me to think of music and how music sometimes truly helps us to process our feelings and can even trigger some kind of emotional responses. I also thought of myself and reflected that together with friends I often create music playlists and share with each other. This activity often brings a lot of engagement and joy, it also brings us together. From here the music playlist emotions application came to my mind as another potential idea for the final design artifact.

After the brainstorming and sketching the ideas, I had collected few different concepts. In addition to that, from the earlier design process – workshop – I had another concept which was making personal emotions vocabulary.

Even though all ideas seemed promising and could be developed into a design artifact, I decided to focus on one concept in detail and develop it further.
5.2.2 Decision making – choosing the one

When deciding on one concept, I looked at my target group needs. The users wanted to spend as less time as possible, they wanted to have a product that was engaging and interesting and finally, the user preferred it to not be a big commitment because of the fast-paced lifestyles.

The energy pen idea sounded promising and engaging, however since the focus was on energy levels, there was a risk of inputting the same answers. For example, the user could mark that they were tired quite often. Considering data from the interviews, young people tended to talk about how tired they were from the studies and different activities when asked how they were feeling. That is why, I thought there could be a case when users mark their energy levels only when exhausted. Therefore, in the energy pen concept, there could be hard to connect energy and learning broad emotional vocabulary. That is why I decided to not settle on this concept.

The music playlist and learning about emotions vocabulary through game sounded like engaging and reasonable ideas for young people to consider using. The game part could be achieved through providing a quiz of different questions related to emotions. Listening to music could be seen as an important aspect of young people’s lives. I decided to combine both ideas and to settle with interactive game learning through quizzes about emotional vocabulary and including the music playlist feature in the same product.

I decided to use a mobile phone as a tool because it was the tool that every young person had and it did not require any extra effort, meaning that to use the product one did not need to go to the specific place to purchase it etc. It also reflected the target group needs – to have quickly accessible tool. Moreover, mobile phone was a great technology in a sense that it could make the learning faster by providing answers and data efficiently. Knowing the numbers and how much the user was learning could be beneficial and could bring sense of improvement. Especially, when learning emotional awareness without reflection, one cannot become better in emotional awareness and therefore, more self-aware.

Having settled on the final design concept idea, I proceeded to sketch the wireframes for the mobile application and started preparing the interactive paper prototype.
6. Final prototype development

For the final prototype, I developed hand sketches, paper prototype, medium-fidelity wireframes, and the final high-fidelity prototype. It is important to note that I did not have the skillset and knowledge before this project about the design tool Figma (Figma, 2023). I learned and developed interactive prototyping skills throughout the final prototype development process.

6.1 Hand sketches

I started with sketching the wireframes and the sequence on paper. At the start I wanted to have three main navigations in the application – the home page, the learning page and the music listening page where a user could create playlists based on emotional vocabulary.

The learning part was created based on the theoretical framework by Gagne about designing for learning experiences (Baird & Fisher, 2005). It consisted of the introduction of the primary emotions. After the user picked one of them, the user could read the definitions of the emotion they picked and get introduced to the secondary emotions. After the user read the information, then they moved to the knowledge testing part where they were presented with a situation of everyday life and had to answer the questions.

The user could stay in the learning part or move on to next application’s features, such as music playlist creation. There the user could listen to already curated music playlist that were named on a specific emotion, or they could create their own music playlists. When they choose to create a playlist, the users had an option to type the name of the playlist on their own or pick one that was already suggested, the only rule was that the name of the playlist had to be from emotional vocabulary.
6.2 Transforming sketches into paper prototype

When I had the hand sketches, I moved to cut the wireframes into a paper prototype. I started working with what emotions I needed to pick as primary ones. I chose anger, fear, joy, disgust, sadness, and surprise as primary emotions based on Ekman’s work (Ekman, 1999). The definitions of emotions and the situations for the quiz were adapted from Brown’s book “Atlas of the Heart” (Brown B., 2021). In addition, I customized the situations for the questions based on students’ everyday university environment.

![Early paper prototype](image)

6.3 Early prototype testing

It was important to test the very first prototype early to understand if the solution is understandable and could be developed further. I tested it on one potential user, a young adult with a background in computer science. I gave a fictional name for the participant - James. In addition, James had experience in developing mobile applications and could give feedback on the user experience in general.

During the testing, I laid out all the paper wireframes according to the sketched sequence and showed a walk-through of the features and experience. I placed the definitions of emotions as separate papers, as well as the questions form every-day life situations. The user was able to pick from different papers and choose emotions based on his preferences.
After the prototype testing, I asked James if he understood how the mobile application worked and if not, what was confusing. The procedure for this testing was guiding the user through steps and observing how the potential user is interacting, finally having a discussion afterwards.

![Figure 19 Paper prototype user testing procedure (pictures are my own)](image)

### 6.3.1 Insights from the early user testing

James really liked the idea of getting the introduction about different primary emotions at the start and enjoyed learning more about the secondary emotions. When James reached testing the knowledge part, he had to pick a random situation and at the beginning it was difficult for him to answer it correctly but later he managed to pick the correct answers. At the end of the walkthrough, James was curious to try other five situations and wanted to see if he could answer those as well. Some of the situations were difficult to understand how one emotion can be the only correct answer, however from the testing part James later understood that one can feel many different emotions but there is always one the most dominant emotion. James realised the meaning behind core and secondary emotions and found it insightful. This gave me a lot of energy and enthusiasm to pursue the feature.

Later, I asked the participant if he wanted to know other definitions of the primary emotions and asked how he would define them. It was hard for him to define emotions in his own words. This gave me an idea to incorporate an activity into the application where the users could learn how to define the emotions on their own.

Finally, I introduced the music playlist feature. The participant was confused and did not understand why it was a feature and what was the purpose of it. After elaborating and introducing it in more detail, James still did not understand and thought that it was unnecessary. Based on this feedback, I decided to remove the music part from the prototype and focus on the learning vocabulary directly.
Instead of music feature, I decided to incorporate building an emotions wheel based on opposite emotions, grounded by Plutchik’s work (Plutchik, 1984).

From James background in mobile applications, he suggested to add onboarding and offboarding which I later considered to incorporate.

After testing the paper prototype on one person, I realised that I needed to focus more on how to develop the learning part and started sketching new wireframes on Figma (Figma, 2023).

### 6.4 Medium-fidelity wireframes

When I sketched the wireframes digitally, I used placeholders for pictures and put shapes into grey colour scheme. I started creating the mobile application explanation part in the beginning where I explained what the app was about and what a potential user could learn on the application. Then I created the onboarding which was about the habit formulation. The onboarding wireframes were inspired by the mobile application *Headspace* and adapted to the topic of learning emotions (see it in the Figure 20) (GoodUX by AppCues, 2018). The user could choose when they wanted to practise and visit the app. However, later I realised that this feature forced to incorporate reminders and notifications. I wanted to give the freedom to visit the app whenever the user wanted and to avoid giving notifications or reminders for the user. That is why I decided to remove the habit formation screens from the start of the experience and leave only the onboarding screens in the final prototype.

![Figure 20 Early stages of welcoming and onboarding medium-fidelity wireframes](image)

Then I created wireframes for home page, that had three main activities which were focused on role-play definitions, learning the connections of emotions, and learning how to define emotions. From there I created wireframes for the learning part, including the definitions of emotions and the quiz part where a user could answer the questions from everyday life situations which in turn could help with recognising the correct emotions. Following the Gagne’s model (Baird & Fisher, 2005), I introduced the basic theory about emotions by showing that there were six primary human emotions (Ekman, 1999). Then the user could pick any of the primary emotions to read its definition and discover what secondary emotions are under the primary ones. After the user introduced themselves with the definitions of emotions and secondary emotions, they were ready to go through the quiz.
After the learning part, I developed other parts – the definitions and the connection of opposite emotions. The idea of connections section was based on Plutchik’s wheel of emotions (Plutchik, 1984). A user through connecting the opposite emotion could learn the meaning of the opposite emotions and at the same time build a wheel to see the overall look. This part was meant to not only learn the emotional vocabulary but give the insightful information that emotions can have the opposites and sometimes one emotion could trigger the other. For example, when feeling angry and knowing that the opposite emotion of anger is fear, one could start reasoning from where the anger was coming from, and one of the answers could be fear. This in turn, could be an inspiration to emotional awareness through vocabulary.
6.5 High-fidelity prototype

After I had a structure through medium-fidelity wireframes, I started to develop the full flow of the experience. I created all six frames for six core emotions with their secondary emotions. For the secondary emotions to be interactive, I created components and added animations so that a user can open the secondary emotions one by one. Then I created six frames for the different situations for the quiz part. For other sections, I developed the wheel creation section fully with low, medium, and high intensities. And finally, for the definitions part, I developed the interactive chatbot.

Also, for the high-fidelity prototype I finalized the visual style and illustrations. I drew minimalistic and engaging illustrations for the onboarding experience. For the colours I picked bold but clean colours to translate the calm and pleasant feeling. Finally, I connected each wireframe together and animated the interactions.

Onboarding screens (Figure 23) meant to present the meaning of the application. It represented three main mobile application goals – to teach how to name emotions accurately, to learn emotional vocabulary through connecting opposite emotions, and being able to apply the learnings to everyday life by answering role-play situations through the quiz.

![Figure 23 Overview of full working file of the high-fidelity prototype](image)
After the onboarding a user was navigated to homepage. In the homepage there were three options to choose from – the role play quiz, definitions through chatbot and the last one about building the emotions wheel through connecting the opposite emotions.

By tapping on first activity from homepage screen – Role-Play Quiz, the user was navigated to the slide bar where they could choose from primary and secondary emotions groups. By pressing on primary emotions, the user was navigated to the screen with six primary emotions based on Ekman (Ekman, 1999). Then by pressing any emotion the user was navigated to the definition of the chosen emotion, the user could discover secondary emotion words by pressing on colourful cylinders. See the flow in Figure 26.
Then a user had two options – to discover more emotions or proceed to the quiz. In the quiz the user is presented with a situation and continues with answering the questions. Based on answers, the user gets a response. See the Figure 27.

After the user finished questions, they could go back to home page and from there go to the second feature – learning how to define emotions through chatbot. The user was presented with a definition of picked emotion, then they were asked to define the picked emotion based on their preferences. Chatbot was meant to automatically correct the definition and give suggestions for the user. See the Figure 28.
The last feature of learning application was connecting the opposite emotions and consequently building the emotional wheel. This activity was based on Plutchik the wheel of emotions (Plutchik, 1984). In the beginning the user was provided with intensity of emotions options – low, medium, high. The prototype was built in a way that a user could explore all three intensities. Then, the user was presented with notifications that were guiding throughout the experience. See the Figure 29.

The full interactive prototype can be accessed through the link: https://tinyurl.com/43r7973y. On onboarding screens– swipe to the right by holding left button of the computer mouse until the homepage.


6.6 Context through storyboard

To communicate possible use of the design artifact the storyboard was created. This storyboard was created after the user validation to provide a context for the artifact.

Here a fictional character Laura hears someone using a word of emotion that she never heard or used before. That word is resentment. She gets curious and tries to understand what that word means by going on the internet and searching for the word through Google search. She finds the word intriguing and is curious to learn if there is something on the App store about emotions. Laura looks up mobile applications of emotions and finds my product.

After downloading it, Laura tries opening the definitions of emotions and tries to answer a few of the quiz questions. She does not score all the correctly but keeps trying and learning. She also goes back to the definitions of emotions and revises them again. After using it for a few minutes she puts her phone down.

The next day, when she is waiting for the bus, Laura picks up her phone and instead of going on social media she goes to the app about emotions. This time she is building the wheel of the opposite emotions. She likes the activity and keeps interacting with the application for 5 minutes.

One day she gets into an argument with her friend. After an argument, she feels quite upset but fails to understand what kind of emotions she is feeling. She feels that knowing the emotion could help her to resolve the feeling. Laura decides to go to the emotions application and this time interact with the chatbot. There she describes in her own words how she is feeling and the chatbot gives a suggestion that she is feeling annoyance. With this information, she is curious to see what the opposite emotion of annoyance was. Laura realizes that annoyance is an emotion of anger just with different intensity. The opposite of anger is fear (Plutchik, 1984). Laura starts reasoning that she is perhaps scared to lose her friend after an argument. Now she has high self-awareness about the situation and will try to resolve it.

---

Figure 30 Storyboard of the context of the product
7. Validation – User testing

In this chapter I described the user testing activity, its procedure, the number of participants of potential user tests and the findings gained afterwards.

7.1 User testing structure and procedure

After I designed and created the interactive prototype, I had to understand if the design solution could help enrich the emotional vocabulary and gain a better understanding of emotions. I chose to validate the prototype through individual user tests to avoid group thinking. I asked seven young adults to participate in each twenty-minute user testing activity. The testing was not recorded, however, when users were interacting with the prototype, I observed them and took notes. In addition, when asked questions I typed down their answers. The raw notes can be found in Appendix G.

The participants were from different backgrounds: computer science, physics, medicine (specializing in psychiatry and psychotherapy), service design, design, and psychology. For the participants' privacy, in this chapter, I refer to them by fictional names – Tom, John, James, Sophia, Emma, Oliver, and Charlotte. Their backgrounds were kept real.

Before the user tests, I asked the participants two questions:

- *Do you feel you have a rich emotional vocabulary?*
- *Do you feel you fully understand different kinds of emotions?*

The questions before testing helped to draw a picture of what level of emotional vocabulary they already had and how confident they were about understanding their emotions.

Then, I prepared the prototype on my laptop and played it during each user test. The prototype allowed us to discover all six primary emotion definitions and their secondary emotions. Moreover, the participants had a chance to answer all six quiz questions based on primary emotions. Then, I showed the walkthrough of the wheel of emotions and how to interact with the activity – the users had to click on a triangle with emotion and had to find another triangle that would be the opposite of the picked emotion. In this way, the wheel was slowly built. Moreover, in the wheel-building activity the participants had an opportunity to choose an intensity of emotions they wanted to explore. Lastly, I showed the walkthrough of the interactive chat and explained how it would help to learn to define emotions better. In the chatbot, the users were able to press the categories of emotions and through the animation see how the chatbot worked.

After the prototype tests, I asked the following questions:

- *Did you learn something new about emotions?*
- *Do you feel you enriched your emotional vocabulary through this user experience?*

The questions after helped to validate if the way I built the user experience could help people learn and understand their emotions better.
7.2 Insights from user testing

7.2.1 Thoughts before user tests

Tom, a first-year student in Physics, before the experience was confident in his understanding of his own emotions. He said sometimes it was difficult for him to name a few emotions accurately but overall, he felt he understands most of them. In addition, he explained that he could learn more about different kinds of emotions.

John, a first-year resident doctor in psychiatry expressed that he was in tune with his emotions and knew the differences quite well. He participated in the user interviews during the discovery phase of this project and his answers did not change before the testing part.

James, a computer science recent graduate, told me that he thought he knew his emotions quite decently, however, he felt that he lacked emotional vocabulary. James also participated in user interviews and early paper prototype testing.

Sophia, with a background in psychology, before the user testing said that she felt she had a rich emotional vocabulary, however, she felt she was not actively using it. She also thought that she could learn more about emotions.

Emma, with a background in service design, told me that she understood a rich vocabulary of emotions, but it is not always easy to communicate them, also she said she knew the differences between different emotions. She also felt that in some specific situations, she could understand the feelings clearly, however in some instances, she could not tell what the feeling was. Emma shared that through movies, and books she learned a lot about emotions, however, it was hard to incorporate them into everyday life.

Oliver, with a background in service and communication design, felt quite confident about his vocabulary of emotions. When it came to differences in emotions, he said he had some knowledge about it but did not feel he could say that he understands it fully.

Charlotte, with a background in brand design, told me that she knows emotional vocabulary in her native language. She also felt confident in knowing the differences in emotions.

7.2.2 Outcomes of user tests

During the testing, Tom was impressed with the visual style, and he said that the prototype looks quite professional. He liked the flexibility of the prototype that at the start he was able to choose the sequence of activities. When answering the quiz questions, Tom understood them very well and answered all of them correctly. After the experience, Tom said that he learned new words of emotions, for example, apprehension or loathing. He has never heard of them before and said that it was interesting to learn something new. He also said that he understood that learning a more precise word to describe emotion could help in understanding situations in life.

During the testing, John liked the overall visual style and gave compliments about the choice of colors, as well as the illustrations on onboarding screens. He thought that appealing visual design adds more value to the experience. After the testing John felt that he already knew the definitions that were
introduced in the prototype, however, he did not know all the opposite emotions. In particular, he was very curious and intrigued that fear is the opposite of anger. A few days later the prototype testing, he reached out and told me that he already thought of fear being related to anger a few times during his days. He also thought of a few times when he got angry and wanted to understand the reason more in depth. In general, John liked the idea of having something digital about emotional awareness and thought he could show it to some of his patients who fail to understand their emotions under the conditions like a borderline personality disorder.

During the user testing, James was curious about the prototype and shared that the animations were nicely done. When James reached the part where he had to connect different emotions to start building the wheel, he was confused and did not agree with some of the combinations, such as anger and fear. When I explained that he could try to see anger and fear physiologically – big and small, he still was not fully convinced. However, the opposite emotions were a new thing for him, and he was intrigued to read more about it. Also, James’s favourite activity was building the wheel because of interaction. He did not like the chatbot experience, however mainly of his personal preference. James thought that he would use this application even if it had only definitions and secondary emotions.

Finally, during the testing, he did not enrich his emotional vocabulary but said that if he was to use the application several times, he thought he would learn new words or expressions of emotions over time.

During the user testing, Sophia answered the quiz questions easily. The part about the wheel was confusing and she was particularly confused about why anger and fear are the opposite emotions. On other levels, she did not know a few of the words, for instance, loathing. She was curious to google a few of the words for emotions and learn the full definitions. After the user testing, she explained that she learned something new but was hard to tell what. She was confused about the wheel and wanted to understand more. Sophia shared that it would have been beneficial to see the wheel as a reference point at some point in the wheel-building experience because the entire part was confusing for her. Lastly, she complimented the visual style and the colours.

During the testing, Emma did not answer all questions from the quiz correctly and in some cases was confused because she would have felt different emotions for the quiz situations. While answering questions and sometimes not scoring correctly, Emma started asking me if when she did not answer correctly did that mean that there was something wrong with her. I reassured her that it was not the case and that it was more likely it was my design problem. In the end, Emma explained that learning through situations in the quiz was interesting and could be a nice solution to understand emotions better. She told me that the quiz reminded her about the emotion cards used for children who have autism spectrum. Emma liked the chatbot with definitions of emotions and thought it could be a useful tool to practice emotions in her life. When she was doing the wheel exercise, she did not know all the connections between the opposite emotions, but she could make sense of the wheels.

During the testing, Oliver gave feedback about usability. He felt that sometimes it was not clear when to press the buttons. He also said that the way the primary emotions were placed could be biasing users, for example, sadness was the first emotion and he felt that it could affect users negatively. Also, the layout of primary emotions did not feel random to him, it felt that there was a specific order in mind. After the user testing, Oliver said that he learned more specific emotions that could be associated with primary or secondary. He found the categorization of primary and secondary interesting and insightful to learn. When I asked if he learned new words about emotions, he told me
that during the user testing no, however, if he would use the application more often, he felt that he could learn emotional vocabulary.

During the user testing, Charlotte did not share any comments. After the testing she said that the groups about emotions were a new knowledge, Charlotte also learned about the opposites of emotions and told me that it would be beneficial to understand them for everyday life situations. She felt that after using such an application she could know how to describe a specific emotion when going through everyday life situations. When I asked if she enriched an emotional vocabulary after the user testing, she said she did, however just in English.

7.2.3 Results of user validation

Overall, I felt I got positive feedback about the prototype as a whole and the validation that it could help improve emotional vocabulary through its features. Moreover, the solution seemed to correspond to user’s needs – the learning application did not intend to encourage spending a lot of time because the quiz situations were short, and users could learn how much they wanted. Also, the prototype experience was engaging and interesting because participants complimented the interactions and visual design.

However, not all features were understood the same way. One person out of seven did not manage to answer all the quiz questions correctly and felt that the correct answers were wrong. Moreover, one person out of seven did not like the chatbot feature because of personal preferences. The wheel creation part was new but confusing for all seven participants. Nevertheless, one person thought that the wheel activity was engaging because of interaction, however, none of the participants could finish connecting the opposite emotions on their own.

The inability to answer questions and connect the opposite emotions correctly by the participants could be seen as part of the learning experience. By making mistakes and not always replying correctly, the app users could ensure that they are learning new skills. However, it is important to provide feedback and guidance.

All the participants said that the application could help improve emotional vocabulary, and a few of the participants were looking up the new words that they learned during the testing. However, the wheel creation part could have been difficult because of the complexity of the words and the new information that emotions can be opposite to each other.
8. Discussion and conclusion

This chapter aims to evaluate how the research questions were answered based on research through design methods. Moreover, the chapter examines the limitations of the final design artifact. It discusses the contribution for the future research, the learnings and finally, the conclusion is provided.

8.1 Addressing research questions

The main research question - how might we design a mobile application that offers a user experience to enrich emotional vocabulary and an understanding of emotions in young people, was addressed through four subsidiary questions.

1. What are emotions and emotional awareness, and how to improve it?

I approached this question through the theoretical framework about emotions.

I had to understand how we humans experience emotions. For some researcher’s emotions were not researched enough (Izard, 1991) and some researchers could trace the markings back to Darwin’s work (Dalgleish, 2004). I realised there was no clear answer when did emotions start to appear in the research. That could have been because of the complexity of the topic or because other research areas were prioritized.

I wanted to understand if the reasoning can have an impact how we perceive emotions, or it is something that we cannot control and the emotions in ourselves show up regardless. Looking at the literature I analysed four theories about emotions - The James-Lange theory, The Cannon- Bard Theory, The Schanther-Singer theory, the Cognitive Appraisal Theory (UWA, 2019). I concluded that all of them had different sequences of the characteristics. However, they had one aspect in common - all had the same components – the stimulus, physiological reaction, reasoning and thinking (UWA, 2019).

Then I looked at the most significant psychologists who contributed to the field of emotions. Ekman concluded that humans have six universal emotions (Ekman, 1999). Also, I came across Plutchik’s wheel of emotions and found out that emotions can be opposite, they can have intensities and the wheel of emotions can support emotional awareness (Plutchik, 1984). Accordingly, I looked at other emotional wheels, for instance, by Gloria Willox (Willcox, 2017) and by an artist Abby Vunmujen (Vanmujen, 2020). In addition to the emotional wheels, I discovered the term – emotional granularity which meant the ability to name emotions as precisely as possible which can improve well-being (Barrett, Gross, & Benvenuto, 2010). The emotional wheels were informative and insightful. Plutchik’s wheel of emotions became a background for interactive wheel creation activity in the final design artifact.
2. Are young people confident in emotional awareness, meaning they understand their emotions and can name them easily with clarity or the opposite?

This question was answered through conducting an online user survey, individual interviews and through co-design workshop.

From the online survey, the collected data revealed that most of the responders were confident about their knowledge about emotions. However, despite the confidence, responders still thought there was a need for more information on how to understand their emotions and they thought that emotional awareness was indeed an important subject. Twenty responders out of twenty-five responded that understanding their emotions was important to them.

Through the interviews, I had more clear and grounded answers. From eight interviews, I understood that youth struggles in naming their emotions, accurately understanding what was behind one or other emotion. In some cases, young people had the knowledge, however, it was still hard to apply the habits, such as journaling or taking notes about their emotions regularly. The interviews helped to see that young people lack full confidence in emotional awareness and that they have the willingness to improve.

Lastly, the second research question was answered through workshop’s second activity – the wheel creation by expressing secondary emotions. During the activity, participants had different techniques to express their emotions – through colours, drawings or recognising the behaviours in themselves when they experienced a specific emotion. Not all participants could always name their emotions accurately, most of them had to use the references provided from the theoretical framework. Which in turn, confirmed the assumption that young people were not fully confident about emotional awareness and naming their emotions accurately.

3. Would young people want to use a digital thing to become more emotionally aware?

Through the online survey, five people responded they would be interested in learning more about their emotions through a tool that could help name and understand their emotions better. Through the interviews and the workshop, I specified that youth wanted something that was not demanding and that was easily accessible. Also, the interviews indicated that young adults struggle with habit formation and even though they wanted to improve their emotional understanding they were less likely to commit to journaling or regular self-reflection. This gave me the answer that a mobile application could be acceptable and easy to use for young people.

4. Can the user experience offered by an interactive mobile application help young people to understand their emotions better through learning emotional vocabulary? And how?

Firstly, this question was answered by examining what a meaningful user experience was. Through theoretical framework it was discovered that a meaningful experience transcends the material (Hassenzahl, 2011). In my project, the mobile application that offered education about emotions was a meaningful experience because it offered knowledge and enlightenment. I validated the claim through user testing. Participants of user testing shared that it was insightful to learn that emotions can be classified into primary and secondary, it was interesting for them to learn that emotions can
have the opposite emotions and can be connected to each other. For example, John was particularly interested in having a better understanding of anger and fear and thought that the knowledge could be applied to his life situations.

To tackle the project in a way that it could have positive outcomes I followed the positive design approach (Desmet & Pohlmeyer, 2013). The three categories of positive design approach, namely design for pleasure, design for personal significance, and design for virtue, were important aspects to consider when designing a digital prototype that could help in understanding emotions (Desmet & Pohlmeyer, 2013).

From the knowledge about design for personal significance, I was able to create an interactive prototype of a mobile application that could help achieve young adults’ personal goals of emotional awareness. Few participants during the user validation confirmed that if they would use the application for several times, they would learn emotional vocabulary and improve the understanding of their emotions.

Through design for pleasure approach, I was able to make a user experience fun and engaging – by creating an interactive wheel building activity and by providing encouraging feedback in the quiz questions so that the process of learning was rewarding. Also, the appealing visual style was important for design for pleasure approach because it added the aesthetic value in the product. From user validation, James’s favourite activity was building an emotional wheel because of interactivity. Also, few participants complimented the visual style and colours of the experience which led to confirm that through animation and visual design, the design for pleasure approach can be achieved.

Lastly, the design for virtue approach helped to design a solution in a way that it would encourage virtuous behaviour and empathy towards others (Desmet & Pohlmeyer, 2013). For example, through learning the opposite emotions – fear and anger. For one participant especially it was quite insightful, and he reached out afterward to inform that he thought of anger in different way and tried to understand what other emotions behind anger could be.

Finally, to examine if youth could learn emotional vocabulary through a mobile application, it was important to consider Gagne’s instructional events for learning experiences (Baird & Fisher, 2005). This was achieved through designing the experience by gaining learner’s attention with animations, introducing the learning objective by providing the definitions of emotions and providing the feedback after the questions (Baird & Fisher, 2005). From the user testing, I observed that participants went back to read the definitions of emotions before going to the quiz to make sure they answer correctly. I saw that through reading definitions and secondary emotions, participants reflected that it was interesting to learn that emotions can be primary and secondary. Oliver told me that the grouping of emotions was new to him. Overall, participants agreed that the experience can provide knowledge about emotions definitions and a better understanding if used several times. James said that he would use the application even if it had only definitions of emotions. John shared that this application could be useful in his hospital practise.
Overall, I can conclude that a user experience provided by mobile application can help understand young adults’ emotions by learning emotional vocabulary through five aspects provided below in no specific order:

1. If the usage of application is more than one time but not necessarily for a long period of time,
2. If the experience is designed according to the positive design approach and intended outcomes are positive,
3. If the experience can transcend the material by bringing value, such as enlightenment through providing new knowledge,
4. If the learning experience gains the users attention, provides the knowledge and after testing the knowledge gives encouraging feedback making learning interesting and involving,
5. If the user experience is engaging and pleasant to use - if it has an appealing visual style and provides the aesthetic effect, is engaging through animations and interactivity.

8.2 Limitations

Besides learning emotional vocabulary, the greater purpose of a mobile application in the beginning of the project was to attempt improve young adults’ self-awareness and overall well-being. However, the full and precise validation for that required more extended testing – committed participants who would use the fully developed application daily for a week or so and examine their state of well-being afterward. For example, a more profound user validation approach for such purpose would have been by providing potential users with a more developed prototype (with 87 emotions and experiences (Brown B., 2021)) for a week. Observe each user how and when they are using the application and then see if they learned something from it and examine how they were adapting their knowledge in everyday life.

Another limitation of the final design artifact was language. It was challenging to evaluate how the prototype worked with users who felt more confident in their emotional vocabulary in their mother tongue. For example, Charlotte said she learned new words of emotions in English throughout the user testing, however, she felt that in her mother tongue, she would have not learned new words of emotions.

Finally, when evaluating the state of knowledge of users’ emotional awareness in the early research stage – most people said they were confident and they knew their emotions, however after asking more precise questions, it seemed the opposite. This also showed up in the evaluation part. When asked how users feel about their emotions before prototype testing, the majority were confident, however later it was clear that they did not know all the words of emotions and especially the connections of the opposite emotions in the wheel building activity. It seemed that simply asking if young adults were confident in their understanding of emotions was not enough and looking for better evaluation methods is necessary to determine the realistic state of people’s perception about their emotions, such as administrative questionnaire.
When going through the theoretical framework about emotions, especially the tools to improve emotional awareness, it seemed that the higher focus was highlighted on how to cope with emotions and how to work through them when struggling. However, what I was missing was the importance of caring about emotions as a regular, normal practice. With this intention, I designed an interactive prototype that aimed to help learn emotional vocabulary instead of helping users how to cope with their emotions. In addition, I wondered if there can be other ways to make emotional awareness, not a coping mechanism but rather a preventive and a normal everyday practice.

The examples of meaningful user experiences in the theoretical framework focused on providing a profound feeling of subjective meaning through the material (Hassenzahl, 2011). However, I lacked examples of meaningful learning experiences about emotional vocabulary.

Through my work, I discovered that a design solution that aims to have a positive impact can make users feel confused because of new, unheard knowledge. For example, since the wheel of emotions by Plutchik (Plutchik, 1984) was new to all participants during the validation sessions, it caused the feeling of confusion. With my artifact I showed that design solution can cause confusion but still have a positive impact and that confusion can still be taken as positive because it can be part of the learning experience. Moreover, confusion can lead to the curiosity since few participants of the validation session searched for definitions of emotions online.

According to the elements for learning experiences, there should be something to catch the learner’s attention, it should have an objective, remind previous knowledge, then provide the learning material, and provide guidance, feedback, and assessment (Baird & Fisher, 2005). When I designed the prototype, the testing of each participant lasted approximately twenty minutes, including interview questions. During such a short amount of time, all participants still learned new knowledge and found it insightful. My artifact shows that learning a complex topic, such as emotions does not need to be long and monotonous. Learning can be achieved through an interactive user experience.

Through my design research, I uncovered that young people do not fully understand their emotions, can name them, and reflect on them regularly. Moreover, through competitor analysis, there was a lack of tools that focused primarily on emotional awareness in young adults. Can designers focus more on designing tools to understand emotions focused on young adults only? In addition, can there be more attention drawn to young adults who are making important life decisions for their futures and help them navigate life through societal pressures?

Finally, this work can be an inspiration to the design community to contribute on emotional awareness through user experience design. To achieve better results, there can be more collaborations between emotions researchers, psychologists, and designers to raise issues of understanding and naming individual emotions precisely.
8.4 Learnings

The methods used during the execution of design process, proved to be effective. However, some changes could be done. The online user survey was an effective tool to get information about emotional awareness, however including a gender question could have been valuable. This is because, later during the design work, through the interviews I uncovered that there was greater stigma among males.

8.4.1 Prototype improvements

During user validation, one participant raised the question- what happens when people do not answer the quiz questions correctly and whether this meant that they had a difficulty in understanding their emotions. In this case, since the visual style and especially the illustrations were perceived positive, it can be used as guiding help adapted to each user. For example, when a user is struggling somewhere, the character could pop up and reassure that nothing is wrong with them and provide further explanation or help.

In addition, the illustrations from onboarding screens could be adapted throughout the user experience and appear in other screens. This could help keep the engagement and consistency of the mobile application.

8.5 Future work

During the user validation, for most participants quiz questions were easy to answer. This sparked the idea that my design could be applicable to schools in primary or middle levels. The platform could be adapted to preferable student’s screens and included into school’s curriculums. Especially, because all online user survey responders replied that they did not have formal education about emotions. Learning about emotions in early stage could ensure that later in life young adults are in tune with their emotions.

Moreover, if developed further, the design artifact could be also applicable for university level and incorporated with a university’s health centres. In this way, learning emotions can provide better self-awareness and could be used as prevention to some conditions, such as depression, anxiety etc.

In addition, this tool could be adapted to more specific groups. During the user validation a participant shared that it can be useful tool for those who struggle with understanding their emotions. That is why, specific target groups could be considered, such as bipolar disorder, borderline personality disorder, autism spectrum and other conditions.

Finally, the work could help normalize speaking about emotional well-being, challenge the “I’m fine” generic answers and could be used as preventive tool for mental health issues. In addition, the awareness could be spread in exhibitions or other installations.
8.6 Conclusion

The design work that initially started with a concern of improving emotional awareness and consequently well-being led to the discovery of a lack of emotional vocabulary in young adults. The specific challenge was reached through design research methods, using divergent and convergent thinking: online user survey, competitor analysis, user journey mapping, individual interviews, user persona, and design brief.

Then the final design artifact – an interactive digital prototype of a mobile application that focused on emotional vocabulary was developed. The concept was developed through holding a co-design workshop, individual ideation, and prototype development from scratch. First, the paper prototype was developed and tested on one person. Then the idea was improved and medium fidelity as well as high-fidelity wireframes development followed.

The high-fidelity interactive prototype was based on theoretical frameworks and included interactive activities. Then the user validation followed which helped to answer if the prototype could help potential users learn emotional vocabulary and the results were positive. In addition, to communicate possible use of the design artifact the storyboard was created and added to the final prototype chapter.

Finally, the work showed that it can attract attention to emotional awareness, the importance of understanding one’s emotions, and learning how to name them as accurately as possible with the help of user experience design.
References


Yang, V. (Director). (2021). *How emotions are made (Cinematic Lecture)* [Motion Picture].
Appendixes

A Online survey

Understanding our emotions

Hello! My name is Deimante Butkute and I am currently working on my design thesis project about emotional awareness through UX design. With this survey I want to understand if emotional awareness is something we are familiar with and get some insights about the topic.

This survey will take no longer than 3 minutes. All answers are anonymous!

The data will be used only as part of the research.
If you have any questions or comments, do not hesitate to contact me - but.deimante@gmail.com.

Are you currently studying?
25 atsakymai

![Pie chart with percentages]

Have you heard of emotional awareness before?
25 atsakymai

![Pie chart with percentages]
Did you have any classes about emotional awareness in your education before studying at university?
20 atsakymų

Is understanding your emotions important to you?
20 atsakymų

Do you notice your everyday emotions and reflect on them regularly?
20 atsakymų
Would you say that you have a rich vocabulary to define your emotions? (Let's say you are able to name more than 8 emotions).

20 atsakymų

Yes: 85%
No: 15%

Do you use any mood tracking applications on your phone?

20 atsakymų

Yes: 90%
No: 10%

Do you wish there was more information on how to understand your emotions?

20 atsakymų

Yes: 90%
No: 10%
Would you say it is difficult for you to name your emotions?
5 atskymai

Would you say that you lack vocabulary to define your emotions?
5 atskymai

Would you say that you lack vocabulary to define your emotions?
5 atskymai
Naming happiness can be explored through several words, going beyond "I’m feeling happy". For example, content, proud, optimistic, peaceful etc. ...tions would be useful to use in your everyday life?

5 atskymai

Would you be interested in using a tool that helps you name and understand your emotions better?

5 atskymai
B Individual interview questions

1. How are you?
2. Are you interested in having an emotionally rich language which would help you to identify and name your emotions accurately? If not, why?
3. Do you think it is hard to name your emotions? Why do you think it is hard? Why do you think it is easy?
4. Would you say that you are the person who can easily talk about your emotions, including positive and negative?
5. When you talk about emotions or share your emotions with your closed ones or friends or people around, do you tend to use more generic language or try to look for more accurate word?
6. Is it something that it is hard to do? Looking for that one word that would describe the emotion you were feeling?
7. Do you consider your emotions when you are deciding to do something? Let’s say you feel anxious before doing something, do you still proceed to do it or you stop and acknowledge the emotion, understand it, think about it, and only then do the action?
8. In how many words can you express happiness?
9. We all sometimes get the question, how are you today? Are you more likely to say the truth if for some reason you don’t feel good or you are more likely to say that you are feeling fine?
10. The research suggests that noting down your emotions twice a day is beneficial for our wellbeing and can improve overall self-awareness and therefore happiness. Is it something that would be interesting for you to try? Reflect on your emotions twice a day?
11. Do you notice your negative emotions and stay with them?
12. What would stop you from using a digital application to help you understand your emotions?
13. Most importantly, would you be interested in participating in co-design session about the product and user testing session?
14. Do you use any apps on your phone every day? What makes you to come back to them every day?
C Individual interview insights from each person

Person 1

Frustrations

- Would not want to use any digital tool if it is paid.
- Past unpleasant life events and mental health issues forced to become more emotionally aware.
- Society’s stigma and lack of emotional language usage because of the gender and culture.
- Would not open up about his emotions to someone, would only open up to the person he trusts.
- Struggles to note emotions at least twice per day but wants to pursue it.
- Did not find a reliable app in the industry that would be based on research.

Motivations

- Reads and is curious about literature on emotional education.
- Is interested in self-awareness because has the will to improve overall wellbeing.
- Started learning emotional vocabulary on his own and noticed that having the language to name emotions provides better self-awareness.
- Uses rich emotional language when asked how is he feeling overall.
- Would be open to try a tool that would enrich the emotional language.

Demographics

- Gender: Male
- Comes from Collective culture
**Person 2**

Most of the time is in neutral state, would like to understand about emotions more.

**Demographics**

Gender - Female
Comes from Individualistic culture

---

**Frustrations**

Sometimes does not have a clear understanding why she feels tired or exhausted.

Does not notice when she is stressed. She has a watch that helps with that.

It's hard to name emotions and find words for them, usually uses generic words.

Most of the time she finds herself in neutral emotional state.

Finds emotions quite an intimate topic and thinks that she comes from a country where it is not widely discussed.

Would be hard to keep the habit of noting down the emotions.

Finds it difficult to identify negative emotions.

**Motivations**

Understanding emotions would help to navigate relationships better.

Would like to understand the energy level better through emotions.

Would like to understand what makes her feel unpleasant.

Being able to share emotions with others would help to deepen her relationships.

Understanding emotions would help to make better decisions and say "no" more often.

Understanding some emotions would help to manage stress.

If there was a tool that could be easily implemented in some of my existent apps/tools, I would use it.

Uses Nook app for diet and notes her moods in the app.
Person 3
Interested in learning emotional language and finds it useful

Demographics
Gender - Female
Comes from Collective culture

Frustrations
Finds it hard to choose one emotion from a lot of different ones when given a tool.
Finds it hard to sometimes communicate emotions to other people.
Uses the app to track her moods but the options of moods are quite limited.
She thinks that there are lack of tools how to process and navigate through negative emotions.

Notices moods more often when it is linked to external factor, for example, menstrual cycle.

Used few apps for mood tracking but found it limiting when the app provided limited amount of moods.

Motivations
Would like to learn a better emotional language to have a higher self-awareness.
Thinks that a good knowledge of emotional awareness can improve overall wellbeing.
Would like to sit down and note emotions daily and is interested in learning more about it.
Thinks that understanding emotions through colours might help understand emotions better.
Would like to have a better understanding how to pick an emotion when reflecting on emotions.
She thinks that other factors such as, weather or diet, influence emotions and it is important to track that as well.
Person 4
Interested in learning more words that describe a connection of emotions

Demographics
Gender - Female
Comes from Collective culture

Frustrations
Finds it hard to express emotions in general.
She thinks that most of the time it is hard to name her emotions throughout the day.
Sometimes she does not know what is going on and struggles to name the feeling or emotion.
Thinks that the struggles come from lack of having a vocabulary for emotions.
Struggles to understand the connection between emotions.
When she communicates with her friends or loved ones about her emotions she tries to find an example that her friends could relate with.
Notices emotions better when she starts to have physical pain in her body, for example, a headache.
Sometimes struggles to communicate neutral emotions to closed ones.

Motivations
Would like to have a richer vocabulary of emotions.
Really cares about emotions and how to feel overall content.
Learnt to stay within negative emotions instead of pushing them away. However, would still like to have more tools to process negative emotions better.
Would be interesting to have an emotional wheel that would be easily accessible, for example on phone.
Keywords can help to remember emotions.
A notification can be helpful to note down emotions during the day.
Uses app called "Balance" when she wants to change her mood sometimes.
Would like to have a tool that would allow to enter whatever you are feeling in your own words and then the application would suggest a real word for the emotion.
Person 5

Does not like the standard answers to "how are you?" but would like to keep the balance

Demographics

Gender - Female
Comes from Individualistic culture

Frustrations

Does not like how it is socially acceptable to talk generic about your feelings and not say how you are actually feeling.

She feels that she knows some words to describe the emotion but sticks to the standard responses of emotions.

Sometimes knowing and actually executing that emotional language can be difficult.

She does not like the standard replies regarding emotions.

Sometimes can be difficult in finding balance when using words to describe emotions.

Lack of emotional vocabulary in native language as well.

More likely to notice emotions when they show up as more extreme.

Would be hard to keep the habit of noting down emotions daily.

Notices negative emotions but does not always acknowledge them.

Motivations

Would be nice to learn some expressions of emotional vocabulary that would say a little more than just "I'm fine". But also keep it balanced and not open up too much to make the other person feel uncomfortable.

She feels like an overall open person and showing some emotions is nothing that would hold her back. However, depends on the context.

Believes that knowing more words to describe emotions would be beneficial for self-awareness.

Would be interested in learning more about the topic but would like to keep herself away from phone.
Person 6

Finds learning about emotions important and interesting, however finds it hard to implement it to everyday life.

Demographics

Gender - Female
Comes from Individualistic culture

Frustrations

Sometimes it can be difficult for someone else to understand me when I talk about my feelings.

Sometimes it is hard to see the differences some emotions, for example, between sadness, anxiety or feeling stressed.

It is difficult to see the differences between emotions even in mother tongue.

Tend to use same words for the emotions.

Has an interest in learning more words to name emotions but has hard time implementing new things in her everyday life.

Tends to use generic language when speaking about emotions with close friends and strangers.

Had received emotional support and tools from counsellor but found it hard to implement.

It is more difficult with inwards directed emotions, like sadness.

Struggles with notifications on her phone.

Motivations

It would be great knowing more emotional language words to have better communication with others.

Became better with processing negative emotions over time.

It is easier to cope with negative emotions when they show up “outside”, for example anger.

Used a mobile application to understand the emotions, however the habit did not stick.

Has the knowledge what is good for her wellbeing, however it is difficult to keep the habit.
Person 7

Is very interested in digital emotional learning tool and would at least try to use it.

Demographics

Gender - Male
Comes from Individualistic culture

Frustrations

Most often negative emotions associate with stress only.

When going through difficulties in life, journals emotional states but only until difficulties in life pass.

Would use emotional language tool as a journal only when difficult times would come again, when everything would normalize - would not use it.

Thinks that he understands emotional language quite well but very often sees everything through humour.

Motivations

Notices his emotions daily and understands them on quite a high level.

Gave a clear image of his daily emotions starting from morning to evening.

When having low mood, tries to actively do something, for example study or work more.

Talks openly about his emotions with colleagues and friends, very often jokes about them.

Thinks that emotions related to stress are easy to overcome by doing something.

If negative emotions are based on something that is out of his control - then he leaves them and does not stay with them to process more.

Does not find talking about emotions scary.
Person 8

Thinks that emotions are essential when it comes to understanding self.

Demographics

Gender - Male
 Comes from Collective culture

Frustrations

Sometimes does not feel confident in understanding individual emotions.

Struggles in understanding others and how they feel.

Struggles with expressing vulnerability because of societal stigma around male emotions.

Sometimes feels numb and does not understand others.

It can get hard to communicate emotions to others and sometimes some conversations tend to last longer just because the person struggles to share correct words.

Motivations

It would be beneficial to know more about emotions because that would help to have better relationships.

It seems that knowing more about emotions helps to have a better sense of self-awareness.

Understanding emotions could help in making better decisions in life because one could understand themselves better.

It would be beneficial for journal habits because one could write notes in more accurate language.
D Workshop agenda

Design workshop | Part of thesis research in MSc in Design 2023 by D. Butkute

Agenda

Introduction | 2min

Talk about emotional awareness, what it is and why it can be beneficial for our well-being.

Ice breaker | 5min

To get to know each other a little bit, we will do a short ice breaker. Everyone writes down their names and their first job, then shortly everyone introduces what they wrote.

Ideation, Note & Vote technique | 15min

The question for this activity is: “What can be the most effective ways to learn an emotional language for you?”. Everyone writes down their ideas individually and puts them together on the table. Participants put one idea on sticky notes. In this way, we are working together but everyone has their own personal space to think. After that, we all look at the ideas pool and start dot-voting. Then shortly discuss voted ideas.

Personal emotions wheel creation | 18min

This activity aims to validate the tools discovered from literature review. In addition, this activity will show how participants see their own emotions, how they prefer to talk/express/reflect about their emotions.

Each participant will be provided with the emotions wheel template which consists of basic/primary emotions and asked to write, draw or colour additional emotions for each basic one. To help participants understand what additional emotions could be, they will be provided with different researchers emotions wheels.

At the end participants will have their own personal emotions wheel and leave with something that brings value to them.

Conclusions, take away | 5min

Ask participants what are their thoughts about the workshop, was it helpful, was the topic and the tools understandable. Give the tools for participants so that they leave with something of value.
MAKE YOUR OWN EMOTIONS WHEEL

USE COLOURS, DRAW

USE THE TOOLS PROVIDED

WRITE YOUR OWN WORDS

SADNESS

ENJOYMENT

FEAR

SHAME

SURPRISED

ANGER
LETS TALK EMOTIONS

03.06 @15:15 DESIGN STUDIO NORRKÖPING/HYBRID

MANAGE YOUR RELATIONSHIPS

KNOW YOUR EMOTIONS

NAME YOUR EMOTIONS

UNDERSTAND YOURSELF

THE WORKSHOP DURATION IS ABOUT 45 MINUTES. I WILL INTRODUCE MY CONCEPTS AND WE WILL COLLECTIVELY PLAY FUN GAMES ABOUT EMOTIONS.
EMAIL: DEIBU682@student.liu.se

Picture: @Unsplash
G User validation insights from each person

Person 1 - Tom (fictional name)

Before testing:

1. Do you feel you have a rich vocabulary of emotions?
   - Yes, I feel confident about it but sometimes it can be difficult.

2. Do you feel you fully understand different kind of emotions?
   - I think, I understand more or less but I could learn more.

After testing:

1. Did you learn something new about emotions?
   - I liked the colours and the prototype looks professional. I like that I was able to explore all primary emotions. The quiz questions were easy. I learned new words of emotions in English.

2. Do you feel you enriched your emotional vocabulary through this user experience?
   - I learned new words, like apprehension and loathing. I never heard of these before so it was interesting. I think having precise word of my emotion could actually help to understand some situations during the day.

Person 2 - John (fictional name)

Before testing:

1. Do you feel you have a rich vocabulary of emotions?
   - Yes, I feel confident.

2. Do you feel you fully understand different kind of emotions?
   - Yes, I think I'm confident.

After testing:

1. Did you learn something new about emotions?
   - Illustrations and colours looked very nice and it helped to enjoy the experience. I knew the definitions of emotions and quiz questions were easy but I didn't know the opposite emotions. Are you sure anger and fear are the opposite? Because that's quite interesting.

2. Do you feel you enriched your emotional vocabulary through this user experience?
   - I think I learned the opposite emotions but if I would use this app that has more definitions, I think I would learn more. Also, this application could be very good for few patients in our hospital who have issues with borderline personality disorder or similar. I feel like it could help to define their emotions better.
Person 3 - James (fictional name)

Before testing:

1. Do you feel you have a rich vocabulary of emotions?
   - No.

2. Do you feel you fully understand different kind of emotions?
   - I think yes I know my emotions quite decently.

After testing:

1. Did you learn something new about emotions?
   - First of all, the prototype looks nice. I didn't know the opposite of emotions. I'm still confused about anger and fear being the opposite and I'm not fully convinced about it. My favourite part of the prototype was the wheel but the opposite emotions were confusing. I personally don't like chatbots so that one didn't add any new value for me.

2. Do you feel you enriched your emotional vocabulary through this user experience?
   - During this testing I didn't enrich the vocabulary but probably if I was to use this app several times, then yes. But I would use this application even if it had only definitions of emotions and their secondary emotions. I would use it without those extra features, like chatbot or the quiz.

Person 4 - Sophia (fictional name)

Before testing:

1. Do you feel you have a rich vocabulary of emotions?
   - Maybe I do but I'm not actively using them.

2. Do you feel you fully understand different kind of emotions?
   - I think I could learn more.

After testing:

1. Did you learn something new about emotions?
   - I learned something, I did not know the words, connections were confusing, i want to understand why, inspired to learn more afterwards, I googled few words, like loathing or vigilance, afterwards the experience.

2. Do you feel you enriched your emotional vocabulary through this user experience?
   - Possibly but I don't know what they mean, would be nice to see the wheel as a reference. But I liked the colours and visual style of the prototype.
Person 5 - Emma (fictional name)

Before testing:

1. Do you feel you have a rich vocabulary of emotions?
   - I understand a rich vocabulary of emotions but they don't always easy to communicate/say. I know some differences of different emotions.

2. Do you feel you fully understand different kind of emotions?
   - I feel like on some things I understand the feelings, on some things i can be quite precise and sometimes not that well. through movies and books i know a lot of emotions but struggle to incorporate them.

After testing:

1. Did you learn something new about emotions?
   - I learned there is a sense in the wheel and emotions can be opposite. I didn't know about some of the connections.

2. Do you feel you enriched your emotional vocabulary through this user experience?
   - I feel like the dictionary part practise in the chatbot could help understand emotions in my life, the quiz was interesting and it helps to understand emotions. Made me think of a video where two children practise emotions from situations cards and one of the has autism spectrum. But I wonder, if I answer the quiz incorrectly what happens next? Is there something wrong with me or are we supposed to feel the same emotion.

Person 6 - Charlotte (fictional name)

Before testing:

1. Do you feel you have a rich vocabulary of emotions?
   - Yes, in my native language.

2. Do you feel you fully understand different kind of emotions?
   - Yes, I am confident.

After testing:

1. Did you learn something new about emotions?
   - Yes, connections, the groups and the opposite emotions, it would be beneficial to understand in everyday life, this app can provide exact definitions of emotions, after using it I could know how to describe it.

2. Do you feel you enriched your emotional vocabulary through this user experience?
   - Yes, in English.
Person 7 - Oliver (fictional name)

Before testing:

1. Do you feel you have a rich vocabulary of emotions?
   -Yes, quite confident.

2. Do you feel you fully understand different kind of emotions?
   -Fully no, but some knowledge yes.

After testing:

1. Did you learn something new about emotions?
   -I learnt more specific emotions that sometimes you don't associate with primary or secondary. The categories of primary and secondary was pretty interesting to learn. But sometimes I wasn't sure when to press the buttons and the layout of primary emotions in my opinion was biased, for example if I see sadness first then it influences me first.

2. Do you feel you enriched your emotional vocabulary through this user experience?
   -If I would use this application multiple times then I would enrich my vocabulary.

Extra thoughts:
I think it would be nice to have a vocabulary box, save words to come back later, like in kindle. This maybe could help learn emotional words even better.