Empowering Young Adults With Childhood Trauma And Emotional Dysregulation: Navigating Hypervigilance

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Abstract

Childhood trauma can have lasting effects on emotional regulation, particularly as individuals transition into young adulthood. This project investigates how early traumatic experiences impact emotional expression and stability in young adults aged 18 to 25—a critical developmental stage. By examining these challenges through the lens of hypervigilance—a prevalent aspect of performance anxiety in academic and professional settings—the research reveals how heightened self-doubt, anxiety, and negative self-talk contribute to and perpetuate hypervigilance.

The core outcome of this research is Converse Pro, a conceptual card-based tool designed to help young adults overcome performance anxiety. This tool integrates practical strategies for managing emotional dysregulation with access to a supportive online community, providing a holistic approach to personal and professional development.

The project also identifies areas for future exploration, including the need for further validation of the tool through direct user testing and the potential to expand its features to address a broader range of emotional challenges. Future research could also explore the effectiveness of integrating Converse Pro with existing therapeutic practices and digital mental health resources to maximize its impact.

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INTRODUCTION

This chapter introduces the thesis project - the topic, the target group, the approach and the aim.

1.1 Project Context

Childhood trauma has long-term impacts not only on the mental and physical health of an individual but also on their emotions, relationships, behavior, brain development and cognitive functions. The impact on the emotional well-being can be seen in the individual's ability to regulate their emotions, particularly in terms of emotional expression.

Young adults' transition from adolescence to adulthood is a critical period in their lives, filled with psychological and social development. For young adults with a history of childhood trauma, this period can be especially challenging as they may struggle with emotional expression, both internally and in their interactions with others. These challenges can lead to feelings of isolation, misunderstandings and emotional instability, among others.

This project focuses on identifying and addressing these issues with emotional expression for young adults. By focusing on emotional expression, the goal is to equip them with the tools and strategies needed to understand and articulate their emotions more clearly and confidently. Healthy emotional expression can lead to better self-awareness, stronger interpersonal relationships and greater overall emotional well-being.

To achieve this, the project takes a comprehensive approach that includes using literature and co-creation sessions to understand the specific needs and challenges faced by these young adults. The co-creation sessions ensure that the final concept is grounded in the real-life experiences and insights of the participants, making it more relevant and effective.

1.2 Young Adults

The scope of this project is specifically focused on young adults between the ages of 18 and 25 who have experienced childhood trauma. This age group is significant as people are expected to take up independent and societal roles like financial independence, career development, building a strong social circle and navigating romantic relationships. At the same time, this period is critical for brain development in terms of identity formation, building interpersonal skills and acquiring coping skills. The prefrontal cortex of the brain located just behind the forehead develops until the age of 25 years and helps with making good judgment through reflecting on and moderating behavior in social situations (Arain et al., 2013).

So, as these young adults transition from adolescence to adulthood, they also have to tackle the repercussions of their childhood trauma on various aspects of their lives. Among the host of challenges they face, one of the most significant is the impairment to their ability to express and communicate their emotions effectively in their daily lives, both with others and with themselves.

This is why the project sets out to explore the consequences of childhood trauma on regulation of emotions during this critical stage of transitioning into adulthood. The overarching goal is to develop an intervention that addresses their unique challenges and needs, and helps them lead emotionally healthier lives despite the impact of their trauma.

This chapter has provided an overview of the project's focus on young adults with childhood trauma. The next chapter will delve into the literature to explore the underlying issues and existing resources related to this topic.

LITERATURE STUDY   Chapter 02

This chapter will present the findings of the literature study - the effects of childhood trauma, the bidirectional relationship between and external factors influencing childhood trauma and emotional dysregulation, existing resources and the importance of emotional awareness and resilience.

The literature aimed to gain a deep understanding of how childhood trauma impacts emotional regulation during an individual's early adulthood years. This was done through a detailed investigation of the existing literature on this topic.

2.1 Childhood Trauma

Childhood trauma, characterized by experiences of physical, psychological or sexual harm or violence, has a significant impact on billions of lives worldwide. According to estimates by the World Health Organization (WHO), approximately one billion children faced at least one traumatic event in 2021, perpetrated by parents or other caregivers, peers, romantic partners, or strangers (WHO, 2022). This constitutes approximately 50% of the global population of people under the age of 18.

In the Netherlands, approximately 119,000 cases of childhood trauma are reported annually (Ministerie van Algemene Zaken, 2017), with emotional neglect, physical neglect, and emotional abuse among the most prevalent forms, according to a National Study in the Netherlands about the prevalence of maltreatment of children, as seen in Figure 1 (Van Berkel et al., 2020). The data in this study was collected three times over 12 years, between 2005 and 2017. According to this study, the actual cases (reported and unreported) are expected to be much higher, as a significant number of cases go unreported due to feelings of fear, shame or guilt, lack of understanding, or a sense of taboo associated with it.

ADVERSE CHILDHOOD EXPERIENCES OVER 12 YEARS IN THE NETHERLANDS
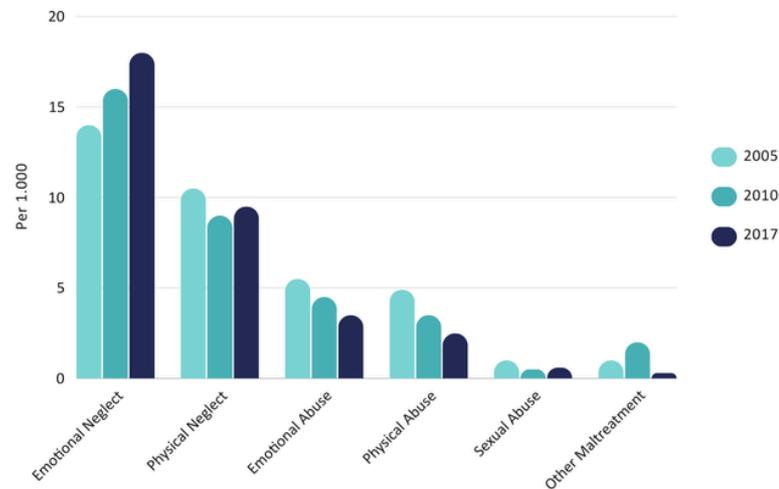
Figure 1 – Adverse childhood experiences in the Netherlands between 2005 and 2017

This study also noted that the perpetrator in 98.9% of these cases was someone the child knew. Biological mothers were involved 86.8% of the time, biological fathers were involved 63% of the time, and both biological parents were involved 52.5% of the time. Childhood trauma extends beyond the confines of the child's home, and can be seen as bullying, sexual exploitation, discrimination, long-term illness and more. According to a report by United Nations Children's Fund (UNICEF), globally, 1 out of 3 children aged between 11 and 15 years have faced bullying, 13% of whom are less likely to graduate from school (Global Status Report on Preventing Violence Against Children 2020, 2020). This report also suggests that adults who faced four or more forms of any childhood trauma are 7 times more likely to be involved in an interpersonal violence as a victim or perpetrator and are 30 times more likely to attempt suicide.

Despite these alarming statistics, societal misconceptions and a lack of awareness contribute to the normalization of abusive behaviors, making it challenging to address and prevent childhood trauma effectively. The impact of childhood trauma can be a lot more dangerous than other forms of trauma as the brain development, support system and coping mechanisms of children are not fully formed yet. As the repercussions of childhood trauma extend beyond the initial event(s), it can lead to long-term effects on various aspects of an individual's adult life including their mental and physical health, cognitive abilities, emotional regulation, communication skills, forming meaningful relationships and trust with others, navigating difficulties, managing stress and more (Downey & Crummy, 2022).

2.2 Emotional Regulation and Dysregulation

Emotions are automatic or controlled responses to situations or thoughts in an individual's life based on their past experiences.

Emotional Regulation (ER) refers to the ability to effectively manage and respond to one's own emotions in a manner that is socially acceptable and adaptive (Chowdhury, 2019). It involves processes such as recognizing and identifying emotions, understanding the causes and consequences of those emotions, employing strategies to modulate their intensity and duration, and appropriately responding to the situation.

Emotional Dysregulation (EDR), on the other hand, occurs when individuals struggle to manage their emotions in a healthy and constructive way, leading to difficulties in functioning and interacting with others (Pedersen, 2022). It leads to inappropriate or poorly regulated responses to situations due to the inability to manage or modulate emotions to external and/or internal stimuli, which may be seen as outbursts, intense reactions, shutting down, avoiding certain emotion or other unhealthy behaviours.

Childhood trauma at any age increases the chances of struggling with emotional dysregulation, but those who faced it between the ages of 6 and 10 have the most difficulty regulating their emotions as adults (Dunn et al., 2018). This is because children start learning to manage their feelings and interpersonal relationships at this age. In a quantitative study on childhood trauma's impact on an adult's emotional regulation, emotional abuse emerged as the most significant predictor for emotional dysregulation (Altomaro et al., 2022). Emotional abuse is characterized by non-physical behaviors like threats, constant criticism, shouting, name-calling, scapegoating and manipulation - all meant to control, isolate or frighten the child. This type of abuse was found to be the biggest influence for facing difficulties in accepting own emotions, maintaining goal-directed behavior and incorporating healthy emotion regulation strategies. In a cross-cultural study of adults in 10 countries, the existence of emotional dysregulation in adults ranged from 6.1% to 12.7%, with an omnicultural mean of 9.2% (Bianchi et al., 2022).

2.3 Effects Of Childhood Trauma

The impact of childhood trauma can be a lot more dangerous than other forms of trauma as the brain development, support system and coping mechanisms of children are not fully formed yet. Exploring the effects of childhood trauma is important to understand its lasting impact on their emotional regulation. From biological and physiological to psychological, social and behavioral effects, each play a significant role in shaping the emotional expression of an individual.

Biological Effects
Understanding the biological effects of childhood trauma is essential as traumatic experiences during childhood can greatly impact brain development and function, leading to issues with emotional processing and regulation.

Approximately 80% of brain development occurs within the first three years of life, and 90% within the first 5 years (Bremner, 2006). The brain undergoes significant development in three main areas: the brainstem, limbic area, and cortex. This development occurs in a bottom-up fashion, with the brainstem responsible for survival and automatic responses, developing first (Ackerman, 1992). This is followed by the limbic area, which includes the amygdala and hippocampus, and finally, the cortex, responsible for higher-order functions such as reasoning and decision-making, which fully develops by the time a person turns 25.

Impact of Trauma on Brain Function:
A trauma-impacted brain is hypervigilant to threats at all times. This repeated activation of the brainstem can disrupt the development and connections between different parts of the brain (Bremner, 2006). This disruption significantly affects learning, memory formation, emotional regulation, and decision-making abilities. As seen in Figure 2, trauma alters the function of three key brain areas that are involved with emotional regulation (Tourinho, 2022):

- Prefrontal Cortex (Thinking Center): The prefrontal cortex is responsible for clear thinking, decision-making, self-awareness, as well as managing and

linking emotions and decisions. Post-trauma, it may weaken, impairing its ability to effectively process stimuli and evaluate situations.

- Hippocampus (Emotion Regulation Center): The hippocampus is responsible for managing and linking emotions and memories. Trauma can lead to vivid recollections and difficulty distinguishing between past events and present threats, impacting emotional regulation and memory processing.

- Amygdala (Fear Center): The amygdala triggers fight, flight, or freeze responses to stress or threats, and is key in managing and linking emotions with fear responses. Trauma can disrupt this system, leading to erratic behavior as the prefrontal cortex struggles to apply logic due to heightened fear responses (Maynard, 2020). Hypervigilance, a state of heightened alertness and sensitivity to potential threats, is easily triggered post-trauma due to beliefs that warning signs of the trauma were missed. This heightened hypervigilance can branch into other areas, perpetuating anxiety and disproportionate reactions. In some cases, trauma can cause tuning out actual threats, leading to revictimization or antisocial behaviours.
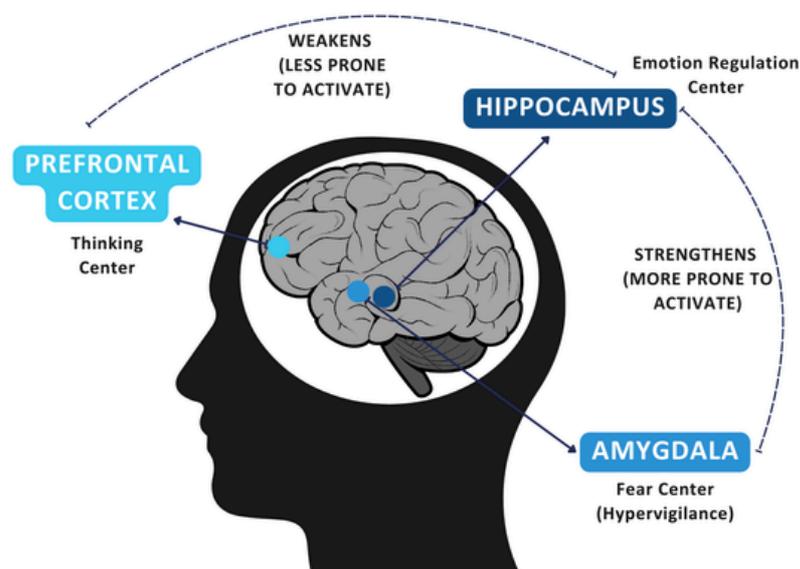
Figure 2 - Key areas of brain impacted by trauma and responsible for emotional regulation

The impact of childhood trauma on the brain disrupts typical patterns of activity. The brain remains on high alert, allocating excessive resources to perceived threats (Marusak et al., 2014). This hypervigilance not only influences emotional regulation and coping mechanisms, but also diminishes one's ability to derive motivation for and rewards from positive experiences, thereby increasing vulnerability to further stress.

Psychological Effects

Childhood trauma and emotional dysregulation can contribute to the development of various mental health issues, and these can in turn severely impact overall well-being and functioning in adulthood.

- Depression and Anxiety: Childhood trauma and emotional dysregulation are high risk factors for depression and anxiety disorders. In fact, a 6-year longitudinal study shows that individuals with a history of childhood trauma experience higher levels of depressive and anxiety symptoms compared to those without such or with less experiences (Kuzminskaite et al., 2022). Moreover, trauma-exposed individuals may struggle with reduced reward sensitivity, making it harder to experience pleasure from or motivation for positive experiences in their lives, thus worsening depressive symptoms (Marusak et al., 2014).

- Complex Post-Traumatic Stress Disorder (C-PTSD): Childhood trauma, particularly chronic and severe forms, can lead to the development of complex post-traumatic stress disorder (Ford & Courtois, 2014). This condition is characterized by a range of symptoms including interpersonal problems, extreme mood swings, lack of emotional awareness, low self-esteem, difficulties with self-identity, feelings of extreme loneliness, engaging in risky behaviours like drugs, alcoholism or engaging in unprotected sex with multiple sexual partners (Dvir et al., 2014). C-PTSD often exists with other mental health issues such as depression, anxiety and personality disorders.

- Personality and Mood Disorders: Emotional dysregulation in childhood and adolescence is associated with an increased risk of personality and mood disorders. 26.0–30.5% of children admitted to psychiatric clinics or mental health facilities exhibit symptoms of emotional dysregulation (Moehler et al., 2022), seen as engaging in self-harm or substance abuse in order to manage their intense emotions and distress. This along with their trauma, especially emotional abuse, puts them at a much higher risk of developing Borderline Personality Disorder (Kanj et al., 2023). Some individuals also develop bipolar disorder and other disruptive behavior disorders (Dvir et al., 2014). The presence of any two of these factors significantly heightens the likelihood of developing the third, highlighting the complex relationship shared by childhood trauma, personality disorders and emotional dysregulation (Kanj et al., 2023).

- Impaired Cognitive Functioning and Academic Performance: Students may experience impairments in their cognitive functioning, academic performance and social competence due to their trauma (Kataoka et al., 2012). Their struggles can be seen on a personal and social level. On a personal level, they may have issues with attending school regularly, graduating high school, getting good grades and may have lower intelligence compared to their peers. On a social level, they may struggle with engaging with others in a non-violent manner, as a result decreasing their social competence and increasing chances of being rejected by their peers. All of these are further contributing factors towards their psychological distress.

- Adverse Impact on Daily Life: Individuals with a history of childhood trauma often exhibit difficulties in daily life functioning and emotional regulation. In a study of 1000 adults to establish the relationship between childhood trauma and managing emotions in adulthood, the results showed that compared to their non-traumatized counterparts, they measure higher in internalized and externalized anger, have developed harmful coping strategies for quick relief, have a challenging time interacting with others, and find it challenging to form meaningful attachments – all of which have a significant impact on an individual's daily life (Garcia, 2020).

Physical Health Effects

Childhood trauma increases the risk of developing physical illnesses such as cancer, autoimmune disorders, infections, insomnia, chronic fatigue, chronic pain and hormonal imbalances (Galli et al., 2021). There is also a link between childhood trauma and an increased risk of cardiovascular diseases, especially for women. A study about the relationship between childhood trauma, pain, emotional dysregulation and Alcohol Use Disorder suggests that those with childhood trauma and emotional dysregulation have lower pain tolerance, which can manifest into chronic pain that may persist or worsen over time. This highlights the interconnectedness of physical well-being with mental and emotional well-being (Zaorska et al., 2020).

Social And Behavioral Effects

For any kind of stressful event, an individual copes with them through certain strategies that they learn over time. These strategies, in turn, shape the social and behavioral aspects of an individual's life. The coping strategies adopted in response to their childhood trauma shapes social interactions, relationships and overall well-being differently than their counterparts. More often than not, children lack the cognitive capacity and life experience to fully understand

their traumatic events, leading to distorted perceptions of cause and consequence. This can result in self-blame, low self-worth, intense moods and questioning of personal values and capabilities well into adulthood.

Adaptive vs Maladaptive coping:
Adaptive coping strategies are constructive responses to stressors (Li, 2024). They aim towards personal growth, optimism and solution-focused actions. These strategies promote resilience and long-term well-being. In contrast, maladaptive coping mechanisms are unhealthy responses to stress that worsen overall well-being over time. These strategies provide temporary relief from distressing emotions but fail to address the underlying issue. While both types of coping deal with how an individual deals with a situation, adaptive strategies make things easier in the moment as well as in the long run, while maladaptive strategies make things easier in the moment but harder in the long run (Cuncic, 2023). These strategies are acquirable and learned over time. While everyone depends on certain maladaptive strategies to deal with stress, the degree, frequency and context makes the difference. Higher dependency on maladaptive strategies is a key factor in developing mental health issues for those who have experienced childhood trauma (Huh et al., 2017).

Types of Maladaptive Coping:
There are various forms of maladaptive coping, and each has their own effects on social and behavioral functioning. The following is a list of 10 such strategies that are most relevant to those with childhood trauma and emotional dysregulation (Cuncic, 2023; Li, 2024; Huh et al., 2017; Bailey, 2022):

- Avoidance: Individuals actively steer away from situations or thoughts they perceive as threatening. This holds them back from developing the ability to address challenges in their lives.

- Escapism: Individuals use distractions like substance abuse, non-suicidal self-harm or binge-eating to avoid facing difficult emotions or situations. In fact, about 30% of those who engage in non-suicidal self-harm are likely to have childhood trauma and have a weak support system (Andersson et al., 2022). It is also further linked to long-term mental health issues and increased suicide risk. Some people with childhood trauma, especially women, have a tendency to overeat in response to negative emotions such as anxiety or irritability (Ansari et al., 2018).

- Emotional Numbing: Individuals suppress their emotions to relieve stress. This results in detachment from their own feelings and experiences.

- Rumination: Individuals engage in repetitive, negative thought patterns without reaching any resolution. This leads to overthinking and anxiety.

- Intrusive Thoughts: Individuals have persistent, distressing thoughts or images. They significantly impact or disrupt their present moment.

- Sensitization: Individuals focus their attention on perceived threats than on the present moment. This leads to hypervigilance and exaggerated emotional responses.

- Safety Behaviors: Individuals are overly dependent on certain people or activities to cope with anxiety. This leads to constantly seeking validation or adhering to strict routines.

- Blaming/Self-Blaming: Individuals have a distorted perception of responsibility. This impacts effective communication through defensiveness or resentment in relationships.

- Self-Defeating Humor: Individuals use self-deprecating jokes to control the narrative about themselves. This often undermines self-confidence and causes doubts about one's capabilities.

- Rationalization: Individuals justify harmful behaviors or feelings of self or others to make them seem acceptable. This causes a lack of accountability and resistance to adopt healthy behaviours.

Outcomes of Maladaptive Coping:
There are long-term repercussions of maladaptive coping strategies in terms of one's social and behavioral functioning (Cuncic, 2023; Olivine, 2024):

- Limited Engagement with Friends and Family: Individuals may withdraw from or avoid social events with friends and family. This may be due to fear of difficult conversations, low self-esteem or lack of skills to navigate relationships.

- Low Educational and Professional Progress: Individuals avoid interpersonal relationships due to fear of being in the spotlight and performance anxiety, and so avoid building a relationship with peers, skip networking events, and turn down skill-building opportunities. This prevents them from moving ahead in their career.

- Impaired Social Skills: Individuals may become overly cautious or withdrawn as this type of coping worsens hypervigilance and performance anxiety, leading to impaired social skills. This causes difficulties in connecting and communicating well with others as well as forming and maintaining healthy relationships.

- Boundary Issues: Individuals find it difficult to be assertive and in control. They find it difficult to stand up for themselves, leading to blurred boundaries and over-dependency on others. This can contribute to a lack of autonomy and healthy interpersonal dynamics.

2.4 Bidirectional Relationship of Childhood Trauma and Emotional Dysregulation

In a literature review aimed to understand how childhood trauma contributes to emotional dysregulation and other psychiatric comorbidities, which is the presence of additional psychiatric disorders occurring simultaneously with a primary condition (Dvir et al., 2014), a complex and bidirectional relationship between childhood trauma and emotional dysregulation was perceived. Childhood trauma poses an additional risk factor to emotional regulation as traumatic situations can cause disruption to the development of healthy emotional coping mechanisms. These coping mechanisms are essential to develop interpersonal skills, set boundaries, manage risky behaviours and manage difficult emotions or situations (Bailey, 2022).

At the same time, traumatized children with emotional dysregulation are more likely to be revictimized through further traumatic events due to difficulties coping with the impact of their trauma, irrespective of their comprehension of their traumatic experience (Dvir et al., 2014; Conti et al., 2023). The exposure to trauma as a child may decrease their ability to understand and regulate emotions, thereby impairing their development and social functioning among others. This behaviour is observed from childhood, and well into adulthood.

In other words, there is substantial evidence suggesting a strong association between childhood trauma and emotional dysregulation where, starting with childhood trauma, one may lead to the other in a vicious cycle, and so can be acknowledged as having a bidirectional relationship.

2.5 External Factors Influencing Childhood Trauma and Emotional Regulation

External factors – environmental, societal, personal and interpersonal - influence the emotional regulation of individuals with childhood trauma by either intensifying or improving emotional expression struggles. So, these external factors add layers of complexity to the challenges faced individuals with childhood trauma and emotional dysregulation. Understanding the challenges to external factors can help ensure that the project context is closer to real-life situations.

Environmental Factors
The environment an individual lives in plays a huge role in their emotional well-being. From toxic households to major global events such as pandemics or wars, these situations can cause significant psychological distress to an individual. Psychological distress is mental anguish and emotional suffering. In a self-reported study about the relationship among childhood trauma, emotional dysregulation and psychological distress during COVID in Italy, 38% of people self-reported psychological distress due to the pandemic (Janiri et al., 2021). These adults were observed to have also reported emotional regulation issues caused by emotional neglect or abuse as a child. Another study about the relationship among childhood trauma, emotional dysregulation and non-suicidal self-injury shows a 27.4% higher likelihood of non-suicidal self -injury among adolescents as a result of the pandemic (Andersson et al., 2022). Non-suicidal self-injury has long been linked to long-term mental health issues, emotional dysregulation and increased suicide risk. So, major global events and life changes, especially consistent exposure to such environmental factors, adds layers of uncertainty and stress on an individual.

Societal Factors
In this age of social media, societal and cultural expectations weigh heavily on individuals, and this can especially be difficult for young adults (Gary, 2023). Social media shows everyone else leading perfect lives, making viewers compare themselves to others, leading to feelings of inadequacy, anxiety and loneliness. Apart from these insecurities as a result of social comparison, in certain cultures, like in the east, stigma around mental health issues often

stops people from reaching out for help, leaving them to struggle alone (Krendl & Pescosolido, 2020). So, the pressure to fit in or meet societal standards can be overwhelming, making managing emotions even more challenging for them

Personal Factors
On a personal level, dealing with serious illness and accidents, or struggling with financial problems can be incredibly tough for anyone. When someone goes through these traumatic experiences in later life, after those in their childhood, it can bring back old wounds or create additional emotional hurdles. This causes ongoing stress, seen as anxiety, low self-esteem, intense guilt and loneliness (Burgers et al., 2022).

Interpersonal Factors
Strong interpersonal relationships and support systems are crucial for one's emotional health. Lack of a strong network of friends, family or community to lean on while dealing with life's challenges can make them even harder (Downey & Crummy, 2022). In fact, it may leave people feeling isolated and alone, making it tough to handle stress and regulate emotions effectively.

Attachment Theory:
Attachment Theory suggests that early emotional experiences with primary caregivers acts as the foundation to how one navigates relationships as adults (Ackerman, 2024). From infancy, behaviors like crying, clinging and seeking comfort are instinctual responses that aid our survival. When infants are separated from their parents or faced with unfamiliar situations, their reactions upon reuniting with their parents are shaped by the care they receive during their formative moments. According to the attachment theory, these early patterns of attachment set the stage for how individuals relate to others throughout their lives.

These early interactions with an individual's primary caregivers shape beliefs about self, expectations of others, ability to cope with stress and ability to regulate emotions as adults. Insecure attachments are due to inconsistent or inadequate caregiving received during the formative years (Wei, 2022). This can lead to developing maladaptive coping strategies, which significantly impacts the individual's ability to form and maintain healthy relationships in adulthood. Those with avoidant attachment style tend to be suspicious of everyone and prefer to keep an emotional distance as a means to protect themselves. This makes it challenging to develop close, fulfilling relationships as well as to seek support during stressful times. This can be seen as unhealthy

social behaviors like aggression or withdrawing during social interactions.

On the other hand, critics of the theory argue that it places too much emphasis on early childhood experiences. They suggest that it overemphasizes parental influence, and that genetics plays a more significant role in shaping personality (Ackerman, 2024). Additionally, the model's limitations include its focus on only stressful situations and neglecting other primary attachment figures than mothers.

2.6 Existing Tools and Strategies for Childhood Trauma and Emotional Dysregulation

There are several therapeutic approaches and non-therapeutic tools designed to support individuals with childhood trauma and emotional dysregulation. These methods aim to improve emotional regulation, support healing and enhance emotional well-being.

Therapeutic Approaches
There are a wide range of therapeutical approaches available, and each aim to address different aspects or issues relating to childhood trauma and emotional regulation. Key therapeutical approaches include:

- Talk Therapy (Rr, 2024): Talk therapy is an insight-driven, time-consuming and unstructured approach that explores past experiences to address root causes of emotional and behavioral issues. They take into account interpersonal dynamics and the impact of early life events, including attachment styles, on current behaviors and emotional responses. This approach focuses on self-reflection, empathy and personal growth through active listening, journaling and addressing negative thought patterns. It is used in various formats, including individual, group, and family therapy.
- Cognitive Behavioral Therapy (CBT) (Rr, 2024): CBT targets specific distressing behaviors and thought patterns by reframing the individual's negative beliefs. This structured, short-term therapy focuses on the interconnectedness of thoughts, emotions and behaviors by providing practical tools to develop healthy coping and improve emotional regulation.

- Dialectical Behavior Therapy (DBT) (Chowdhury, 2019): DBT combines cognitive and behavioral approaches to help individuals, especially those with personality disorders, to manage their emotional regulation. It focuses on understanding and changing unhealthy thought patterns and emotional responses, and developing skills to identify and label emotions, reduce emotional sensitivity and improve stress management.

- Emotional Regulation Therapy (ERT) (Chowdhury, 2019): ERT combines elements of CBT, DBT, and mindfulness to help individuals identify and describe their emotions. It focuses on self-acceptance, decision-making and problem-solving skills to improve emotional regulation.

Non-therapeutic Tools

There are a wide range of non-therapeutical tools available, and each aim to address different aspects or issues relating to childhood trauma and emotional regulation. These tools can be broadly categorized into:

- Personal Tools are tools used by an individual with and for themselves. These toolsinclude mindfulness meditation, yoga, gratitude journaling, deep breathing exercises, grounding techniques and sensory gadgets. They are found to be effective in increasing self-awareness, providing a sense of calm and managing the emotional state of an individual.

- Social Tools are used by an individual along with others and share similarities with talk therapy. These tools encourage addressing and reflecting on the root causes, expressing themselves openly in ways that are comfortable for the individual. This includes talking openly with friends, engaging in healing or skill building activities and indulging in creative or expressive activities together. This helps individuals to directly or indirectly heal through their interpersonal connections and support system.

- Hybrid Tools use elements of personal and social tools. These tools include the use of digital apps, websites and chatbots for mood tracking, self-esteem building and learning adaptive coping skills on their own as well as through connecting with online support communities.

University Support

In an interview with a student counsellor at TU Delft, who prefers to remain anonymous, the wide range of support services offered by the university to assist students with their mental well-being was highlighted (https://www.tudelft.nl/en/student/well-being-and-study). TU Delft,

specifically, provides help through various initiatives such as Health Week, activities organized by the library before and after exam periods, student communities focused on mental health, academic counsellors, university psychologists and more. The counsellor emphasized that universities in the Netherlands have a legal responsibility to ensure the safety and well-being of their students. This includes creating a supportive and inclusive environment.

When the students seek help, the student counsellors—often the first point of contact—guide them towards the required resources. The counsellor described their role as a 'band-aid', offering immediate support and then directing students appropriately. This shows the importance of universities being open to new tools and resources that can further aid students.

A diverse range of therapeutic resources, non-therapeutic resources and university support is available to address the various challenges associated with childhood trauma and emotional dysregulation. This overview highlights key strategies and tools that can be integrated into the intervention.

2.7 Emotional Awareness

Childhood trauma can significantly impair an individual's ability to identify and understand their own and others' emotions. In some cases, this manifests as alexithymia, where individuals struggle to experience, identify, and express their emotions (Ogłodek, 2022). It is primarily caused by childhood emotional abuse and neglect. Alexithymia can be seen as a form of emotional numbing, which is one of the maladaptive coping mechanisms triggered by childhood trauma.

For individuals who have faced childhood trauma, navigating daily life is already hard due to various other challenges, and limited emotional awareness poses further challenges. This highlights the importance of early emotional experiences in shaping emotional development and the need for supportive environments to facilitate emotional understanding and regulation.

2.8 Role of Resilience

Resilience is the ability to bounce back from difficult experiences, relying on both inner strength and external resources (Sutton, 2024). The more resilient an individual is, the more they are able to regulate their emotions, which in turn enhances self-esteem and the perception of social support in one's life (Surzykiewicz et al., 2022). Building resilience involves embracing vulnerability and a degree of readiness to be open. It requires recognizing one's own intrinsic worth. It also requires an understanding that traumatic experiences are external events, not a reflection of personal inadequacies. This is crucial to break the cycle of self-blame.

In an interview with Dr. Rebecca Price, an expert on student resilience, she explained how even resilience has biological, psychological, and physiological effects on a person. She further elaborated on this by explaining that positive experiences play a crucial role in developing a robust resilience, which in turn helps shape coping strategies as well as rewire the neural pathways associated with emotional regulation. She highlighted that the key to aiding individuals who have faced adversities like childhood trauma requires creating a nurturing and safe environment for them to authentically express themselves and identify the core of their feelings, instead of just using emotional band-aids. This, in turn, would promote the resilience and emotional regulation of individuals.

This chapter has reviewed the literature on childhood trauma and emotional (dys)regulation, providing a foundation for understanding the challenges and existing tools. The next chapter will develop the insights and explore design opportunities based on these findings.

DEVELOPING INSIGHTS AND DESIGN EXPLORATION BASED ON LITERATURE

Chapter 03

This chapter will outline the process of deriving insights from the literature study and exploring possible design directions to address the identified challenges.

3.1 Developing Insights

Relationship Between Childhood Trauma And Emotional Dysregulation

The literature study helped in better understanding the complex, bidirectional relationship between childhood trauma and emotional dysregulation. The impact of this relationship on emotional expression can be understood through several key mechanisms, as illustrated in Figure 3.
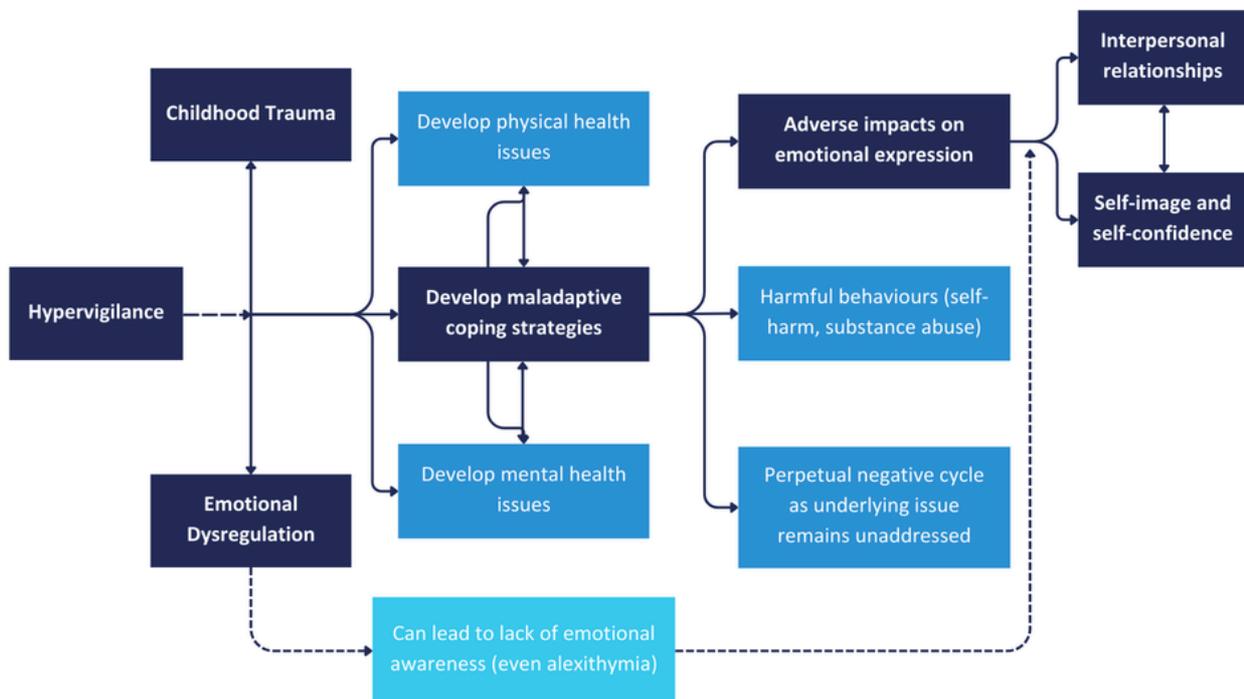
Figure 3 – Bidirectional Effects of Childhood Trauma and Emotional Dysregulation on Emotional Expression

Bidirectional Effects of Childhood Trauma and Emotional Dysregulation

The interplay between childhood trauma and emotional dysregulation can be observed in three ways:

- Physical Health Issues: The emotional distress arising from childhood trauma and emotional dysregulation is associated with a range of physical health issues. The constant state of hypervigilance places a continuous physiological burden on the body, increasing stress hormones and potentially leading to chronic health conditions over time.

- Maladaptive Coping Strategies: Children struggling with emotional dysregulation often develop maladaptive coping mechanisms as a means to cope, which can be observed well into adulthood if left unaddressed. Common strategies include rumination, avoidance, and escapism, which can be triggered by hypervigilance. These maladaptive behaviors may offer temporary relief but ultimately hinder effective emotional regulation and can perpetuate emotional regulation difficulties.

- Mental Health Issues: Childhood trauma and emotional dysregulation can also severely impact an individual's mental health. Hypervigilance contributes to anxiety disorders and social phobias, where the individual is constantly on edge, anticipating danger in social interactions. This can lead to a range of issues including personality disorders, mood disorders, social anxiety and depression.

Each of these challenges can further intensify emotional dysregulation, creating a perpetual cycle where each issue leads to another.

Impact of Maladaptive Coping

The development of maladaptive coping strategies can affect overall well-being apart from emotional expression. These strategies can lead to harmful behaviors such as substance abuse and non-suicidal self-harm. Additionally, they perpetuate a negative cycle of thought and behavior patterns designed to provide temporary relief but fail to offer long-term solutions, causing further emotional instability. This cycle impacts an individual's ability to effective emotional expression.

Impact on Interpersonal Relationships and Self-Image
Difficulties with emotional expression can be seen in two key areas:

- Interpersonal Relationships: Due to the bidirectional relationship of emotional dysregulation and childhood trauma, individuals may struggle with trust issues, boundary-setting, extreme dependency or independence from others and heightened hypervigilance regarding others' intentions. These challenges can strain relationships and make it difficult to form and maintain healthy connections.

- Self-Image and Self-Confidence: The effects of childhood trauma and emotional dysregulation can also extend to self-perception. Individuals may experience low self-esteem, lack of self-trust, unrealistic self-expectations leading to perfectionism and extreme self-criticism. Also, hypervigilance can lead to constant worrying about how others perceive them, which further lowers self-confidence and self-image.

Additionally, lack of emotional awareness, often resulting from chronic emotional dysregulation, impacts an individual's ability to accurately identify and articulate their emotions. This can further affect emotional expression with others and self.

External Factors Influencing the Relationship Between Childhood Trauma And Emotional Dysregulation
A range of independent, external factors can further impact the interplay between childhood trauma and emotional dysregulation, thereby affecting emotional expression as seen in Figure 4.

- Attachment Styles: The type of attachment style can shape the interaction between childhood trauma and emotional dysregulation. Individuals with insecure attachment struggle with trust and security in relationships. This lack of trust and security prevents them from learning adaptive coping strategies, perpetuating emotional dysregulation and challenging healthy emotional expression.

- Traumatic Event in Adulthood: Trauma faced as adults can further complicate emotional regulation, acting as a reinforcement for pre-existing maladaptive coping. In such cases, hypervigilance can become more pronounced, impacting the individual's capacity for healthy emotional expressions.
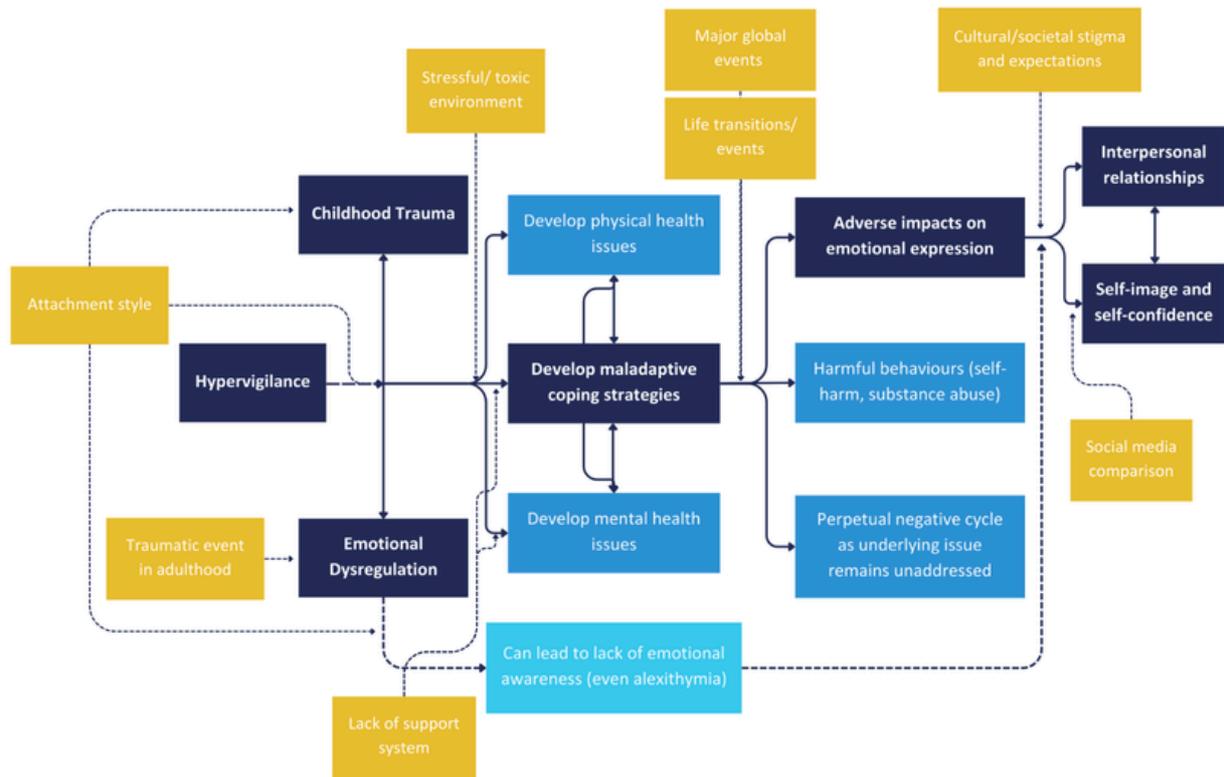
Figure 4 – External Factors Influencing the Interplay between Childhood Trauma and Emotional Dysregulation

- Stressful/Toxic Environment: Prolonged exposure to or living in a stressful or toxic environment can intensify the negative effects of emotional dysregulation and childhood trauma, leading to issues with mental health, physical health and coping strategies.

- Lack of Support System: Without a strong support system, individuals may be prone to developing maladaptive coping strategies as they must rely solely on their past experiences to navigate emotional challenges. This has a significant impact on one's ability to manage and express emotions in a healthy manner.

- Major Global and Life Events: Major global events like pandemics and wars as well as significant life transitions like death of a loved one or moving to a new country can act as additional stressors, influencing the purpose, usage and frequency of maladaptive coping strategies. Hypervigilance can intensify during these periods, as individuals become more alert to potential environmental dangers.

- Cultural and Societal Stigma and Expectations: Cultural and societal norms can heighten the stress and worry an individual feels, impacting emotional expression. For instance, stigmas associated with mental health issues may discourage individuals from seeking therapy, while societal pressure about life milestones may result in perceiving self as a failure if the milestone is delayed or unachieved.

- Social Media Comparison: Social media has a notable impact on self-image and self-confidence. The tendency to compare oneself to others based on curated and often idealized portrayal can negatively impact self-esteem. This external pressure causes further issues with emotional expression in terms of self-image and self-confidence.

In summary, the relationship between childhood trauma and emotional dysregulation is both complex and bidirectional, which in turn affects emotional expression. Childhood trauma and heightened emotional states often lead to maladaptive strategies like rumination, avoidance, and escapism to cope. Constant use of these in daily life provides temporary relief but is harmful in the long run. Early interactions with primary caregivers shape self-beliefs, expectations of others and emotional regulation abilities. As a result, individuals with a history of childhood trauma and insecure attachment may experience heightened hypervigilance as a means to protect self from perceived threats and emotional pain. In social situations, this is seen as constant scrutiny of others' intentions as well as compromised trust and boundary-setting in relationships, causing extreme dependency or isolation. This hypervigilance also impacts self-image and self-confidence. Constantly worrying about others' perceptions contributes to low self-esteem, unrealistic self-expectations and intense self-criticism. This can fuel perfectionism, further lowering self-confidence.

3.2 Exploring Design Directions

The above insights gained from the literature were used to cluster into themes to provide a deeper understanding of the challenges that hypervigilance poses to the target audience in various aspects of their lives. These themes are presented as quotes to provide a more authentic representation.

- "I find it difficult to connect with people"

Hypervigilance can significantly impact the ability to form and maintain healthy relationships, mainly due to minute scrutiny of intentions, a sense of

mistrust and struggles with reward sensitivity. This lowers the ability to seek and accept positive experiences. Constant activation of fear responses (flight, fight or freeze) and heightened sensitivity to perceived threats creates a weak foundation for meaningful relationships. Fear of abandonment and excessive self-reliance(belief that only self can be trusted) can further isolate these individuals and reduce their motivation for emotional connection. Also, individuals with a lack of or limited understanding of their own and others' emotions use avoidance or suppression of feelings as well as intense or inappropriate reactions to cope. All of this leads to difficulty articulating and misinterpreting emotions, which impacts trust and authenticity in relationships, causing challenges connecting with others beyond surface level.

- "I can't stand by or trust my own decisions."

Hypervigilance can lead to deep-rooted self-doubt and insecurity, causing individuals to second-guess every decision and struggle with self-trust. This lack of self-confidence is rooted in negative self-beliefs and an overreliance on external validation, causing lower satisfaction, fear of rejection and unstable emotional well-being. When it comes to interpersonal relationships, this causes miscommunication and presents self as unreliable and untrustworthy.

- "I am not good enough to do what is expected of me as I am a loser."

Hypervigilance can amplify feelings of inadequacy due to heightened self-criticism and setting unrealistic expectations for self. This internalized negativity leads to a lack of self-confidence and value, resulting in blame, conflicts and a negative mindset that impacts performance and productivity. The inability to internalize positive feedback impacts both personal satisfaction and professional dynamics. In academic and work settings, this can be seen as procrastination and difficulties meeting deadlines, which further leads to guilt, performance anxiety and frustration. Perceiving self as inadequate alone can hinder growth opportunities, causing dissatisfaction in personal development. This cycle of low self-perception and perfectionism perpetuates feelings of inadequacy in achieving goals and being undeserving of accomplishments.

- "I feel out of control with my own life"

Hypervigilance can lead individuals to either seek extreme control or feel a complete lack of control due to a constant sense of threat. After a traumatic experience, an individual may attempt to regain control by imposing strict control over their lives. This need arises from feelings of powerlessness caused by their trauma. On the other hand, some individuals are overwhelmed by the constant sense of threat and powerlessness, leading to feeling completely out of control. However, in both cases, some of the behaviors to gain control can be

inappropriate, dangerous or extreme. These behaviours can be seen as overly defensive or assertive behaviors, masking true emotions, self-depreciating humor and having unclear boundaries. Such behaviors can strain interpersonal relationships, leading to communication difficulties, avoidance of challenging situations and weakened connections with others.

- "I cannot live in or enjoy the present, positive moment."

Hypervigilance causes individuals to constantly be preoccupied by potential dangers and negative outcomes. Excessive focus on threats diminishes an individual's capacity to enjoy and fully experience positive moments in the present. The individual's brain is often attuned to identifying risks and potential issues, that it fails to recognize or value rewarding experiences. A lack of secure attachment gives an unstable foundation to navigate relationships and social situations. This inability to connect positively in the present can cause frustration, irritation and impatience due to being out of sync with themselves and others. These individuals may seem emotionally unavailable, distracted or disconnected. The combination of lowered reward sensitivity and inability to focus on the present leads to a cycle of dissatisfaction and disconnection with present experiences and relationships.

Initial Brainstorming

With the help of the themes created, the initial brainstorming was done to generate a diverse set of ideas to address the challenges identified, as seen in Figure 5 (also in Appendix A for readability).
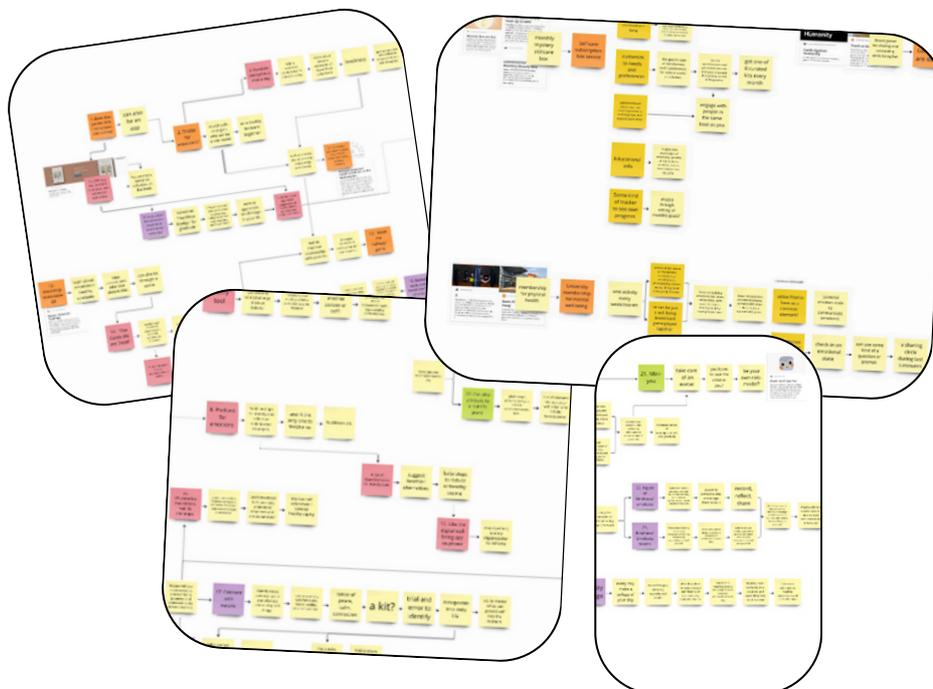
Figure 5 – Initial Brainstorming based on the Insights from the Literature Study (in Appendix A for readability)

The following categories were established based on this initial brainstorming session, which helped explore and provide further direction for the project:

- Creating a Safe Space for Connection and Reflection

Some ideas were focused on creating environments that encourage individuals to connect with others, reflect on their own emotions and not feel like they are in a constant sense of threat due to their heightened hypervigilance. This can be compared to existing interventions such as '7 Cups (https://www.7cups.com/)', 'Share A Feeling (https://www.shareafeeling.com/)', and meditation apps such as 'Calm (https://www.calm.com/)', 'Headspace (https://www.headspace.com/)' and 'Insight Timer(https://insighttimer.com/)' that offer guided dyadic meditations for individuals to meditate together with another. These interventions provide space for individuals to express themselves, whether with loved ones or anonymously with strangers. This highlights the importance of enabling safe sharing, validating expression of feelings and providing the opportunity to gain new perspectives, all without the fear of feeling overwhelmed or dismissed. Ultimately, this leads to deeper emotional insights, stronger connections with friends and family and a more reflective relationship with self.

- Creative Means for Emotional Expression

Some ideas were focused on expressing and reflecting on emotions through creative methods, offering a way to manage the intense emotions tied to hypervigilance. This can be compared to existing interventions such as 'Mindful Art Studio (https://mindfulartstudio.com/)', 'Calico Collage (https://calicocollage.com/)' and Daisy Yellow Art (https://daisyyellowart.com/)'. These interventions teach tools and provide resources that encourage individuals to connect emotionally with themselves and express their feelings in healthy ways by channeling their heightened emotional state into creative activities. Through this, individuals are able to find joy and discover deeper meaning in everyday moments of their lives.

- Symbolic Celebration of Growth and Achievement:

Some ideas were focused on the importance of celebrating progress, milestones and achievements, no matter how big or small, which is crucial for those dealing with the self-critical tendencies often associated with hypervigilance. This can be compared to existing interventions such as 'Kinder World (https://www.playkinderworld.com/)', 'Inqubi (https://inqubi.com/)', 'Tamagotchi (https://tamagotchi-official.com/nl/)' and 'Just Be Kind (https://www.viafdn.org/just-be-kind). These interventions provide fun ways for individuals to acknowledge and celebrate their successes and positive

qualities through tangible representations. By making these achievements more concrete, they become more meaningful and may counteract the self-critical tendencies. This contributes to building a positive self-image and boosting self-confidence.

- Personalized Support to Needs:

Some ideas were focused on the importance of personalized tools for emotional growth, tailoring support to the needs and preferences of individuals in a simple and accessible manner. This can be compared to existing interventions such as 'Thera Box(https://mytherabox.com/)', 'Crate Joy (https://www.cratejoy.com/)' and 'Wakie (https://wakie.com/)'. These interventions provide toolkits and support systems that are dependable yet consistently engaging and varied. This highlights the need for adaptable and customized approaches to build and improve emotional well-being. Individuals are able to experience growth in a way that resonates with their unique emotional journey by navigating their heightened alertness and emotional regulation more effectively.

- Community and Support Networks:

Some ideas were focused on emphasizing the power of community and mutual support in managing the isolation and mistrust associated with hypervigilance. This can be compared to existing interventions such as 'Do Tell! (https://dotellcardgame.com/)' and 'Better Me (https://bettermegame.com/)' which are games designed to strengthen bonds and facilitate deep, meaningful conversations. They aim to enhance emotional connections and improve mental health by bringing people together through honest dialogue. Also, university-level community support initiatives such as 'Exhale by TU Delft (https://www.ready-to-exhale.com/)', a social, creative and mindfulness studio, and 'The Student Minds Hub (https://www.studentminds.org.uk/)', a UK-based student mental health charity, offers students valuable resources for their mental well-being. This highlights the importance of engaging with others who share similar experiences to provide mutual validation and encouragement, thus reinforcing the positive impact of a strong support network. Building a strong support network helps individuals feel less isolated and more connected, which can lessen some of the challenges posed by hypervigilance.

- Multisensory Mindfulness for Emotional Awareness:

Some ideas were focused on the role of mindfulness and the use of multiple senses to enhance emotional awareness, which can be particularly beneficial for managing hypervigilance. This can be compared to existing interventions

such as 'XR Health (https://www.xr.health/)' and 'Soldier Strong (https://www.soldierstrong.org/)' that use virtual reality to help reduce the intensity and frequency of stress responses in individuals with mental health challenges like post-traumatic stress disorder (PTSD). Also, podcasts such as 'The EmotionAlly (https://theemotionallypodcast.libsyn.com/)' and 'Terrible, Thanks for Asking (https://ttfa.org/)' aim to provide emotional support and promote healthier coping strategies, thus encouraging positive experiences. By integrating mindfulness practices into one's daily life, especially through engaging multiple senses, individuals become more attuned to their emotions and feel equipped to make the best of positive experiences.

Focus on Positive Experiences
The themes derived from the literature study and initial brainstorming helped highlight the impact of hypervigilance on these young adults, particularly in their interpersonal relationships and self-perception. Hypervigilance often results in heightened sensitivity to perceived threats and negative emotions (Marusak et al., 2014). Positive experiences, as reflected in the themes and brainstorming, can counteract these effects by providing safe, supportive and meaningful interactions or activities that manage and reduce hypervigilance. Shifting focus from constant threat perception to creating a sense of safety, accomplishment and connection can help break the cycle of hypervigilance. However, it is essential to establish what 'positive experiences' refers to in this context, as not all are equally beneficial or healthy. Certain risky behaviours such as gambling, recreational drug use and frequent social drinking provides short-term pleasure but also introduces significant danger and uncertainty, worsening hypervigilance. This is particularly important for those with childhood trauma and emotional dysregulation, who are prone to actively seek immediate gratification or engage in impulsive behaviors as a form of emotional relief.

Therefore, this project focuses on nurturing positive experiences that are inherently safe, supportive and beneficial to emotional growth. These include moments of genuine connection, creative expression, personal achievement, mindfulness and community support - each providing a sense of security, self-worth and overall well-being. As positive experiences trigger the brain's reward system, it helps shift the focus away from the constant threat perception associated with hypervigilance. This shift allows individuals to experience moments of safety and relaxation. Over time, these positive experiences can counteract the trauma-related hypervigilance and build resilience.

These insights led to a deeper examination on how the different stages of positive experiences can be leveraged to maximize their impact.

3.3 Understanding Positive Experiences

The Temporal Stages of a Positive Experience

To fully understand the impact of positive experiences, a framework was conceptualized by examining these experiences through temporal lenses of before, during and after. A temporal model was chosen as it can best provide insights into how emotional responses evolve throughout the experience. This makes it easier to identify specific challenges and opportunities to develop interventions by gaining deeper insights into how each stage affects emotional well-being and strategies to maximize the benefits. This helped divide positive experiences into six temporal stages - preparation, anticipation, direct interaction, reflection, integration and reoccurrence, as seen in Figure 6.

TEMPORAL STAGES OF A POSITIVE EXPERIENCE

Anticipation
Expectations and excitement for interaction

Reflection
Recall, analyze and derive insights from interaction

Reoccurrence
Seek similar future interactions

01   02   03   04   05   06

Preparation
Set goals and plan interaction

Direct Interaction
Active engagement and enjoyment of interaction

Integration
Incorporate lessons into beliefs, values and behaviors

Figure 6 – The Six Temporal Stages of a Positive Experience

Stage 1: Preparation - An individual needs to prepare for the positive experience. This involves choosing the context, setting clear goals, picturing a desired outcome and forming an action plan. By preparing, an individual can maximize the potential of the experience for themselves. This could be a social gathering, professional undertaking or personal adventure. This stage is sometimes optional.

Stage 2: Anticipation - Once prepared, there is a period of anticipation where the individual eagerly awaits. During this stage, excitement builds and expectations from the interaction fuels enthusiasm. The anticipation stage adds a layer of emotional richness to the experience. This stage is sometimes optional.

Stage 3: Direct Interaction - This stage can be considered the heart of the journey, as this is where the positive experience takes place. There is active engagement and immersion. During the interaction, a range of emotions like joy, fulfilment and connection can be experienced. This stage helps shape our memory of the experience.

Stage 4: Reflection - From the moment the experience comes to an end, introspection and analysis begins. The interaction is recalled, emotions felt are examined and insights and lessons are derived. Sometimes, the reflection stage is in tangent to the previous stage. This stage is a crucial step for growth and self-discovery.

Stage 5: Integration - The reflections of the previous stage are meaningless if the newfound knowledge or perspective are not integrated into the individual's life. This personal development helps challenge or reframe own beliefs, values, behaviors and resilience. This stage helps the individual to evolve and adapt.

Stage 6: Reoccurrence - The final stage restarts the cycle of positive experiences. Here, there is often a desire to further develop the or recreate a similar experience. This stage helps individuals to shape their preferences, needs, aspirations and self-image.

The Temporal Stages of a Positive Experience for Young Adults with Childhood Trauma
In the case of young adults with childhood trauma, they may face one or more unique challenges in one or more stages of the positive experience, as seen in Figure 7. The more challenges the individual faces, the lesser is the desire and ability to fully engage in them. Hence, identifying these challenges is the first step to addressing them.

TEMPORAL STAGES OF A POSITIVE EXPERIENCE

Anticipation
- Extreme anxiety or fear
- Skeptical or pessimistic
- Replay intrusive thoughts and memories

Reflection
- Negative self-perception and beliefs
- Distorted recollection to suit negative self-narrative
- Avoid introspection as uncomfortable

Reoccurrence
- Beliefs of being judged or embarrassing self
- Self-sabotage to avoid potential pain

01 02 03 04 05 06

Preparation
- Struggles and hesitates to plan and set goals
- Envision bad outcomes
- Fear of failure and disappointment

Direct Interaction
- Dissociate from or stress during interaction due to intrusive thoughts & triggers
- Feel unsafe and distrust others
- Uncomfortable with joy & connection

Integration
- Resist or skeptical about change
- Lacks understanding or motivation to change

Figure 7 – The Challenges in the Temporal Stages of a Positive Experience for Young Adults with Childhood Trauma

Stage 1: Preparation
- Struggles with setting clear goals, forming action plans or envisioning positive outcomes due to past negative experiences of unpredictability and instability.
- Hesitancy in preparing for the experience due to fear of failure, abandonment or disappointment.
- Difficulty in choosing contexts that feel safe or comfortable without feeling overwhelmed.

Stage 2: Anticipation
- Experience heightened anxiety or fear instead of excitement due to hypervigilance.
- Past experiences of disappointment or betrayal leads to skepticism or pessimism, which affects eagerness and leads to a mixed emotional state.
- Intrusive memories or thoughts that cause stress about potential performance.

Stage 3: Direct Interaction
- Struggle to fully engage due to stress and dissociation caused by intrusive thoughts or triggers.
- Difficulty in trusting others or feeling safe in the present.
- Lack of sufficient similar, past experiences can cause difficulties in fully experiencing the joy or connection from the interaction.

Stage 4: Reflection
- Negative self-perceptions and beliefs challenges recognizing, processing and reflecting.
- Distorted recollection of experience due to self-prejudice and constant replaying of negative aspects of the experience.
- Avoid introspection due to fear of accepting positive emotions as deserving and confronting painful memories.

Stage 5: Integration
- Resist change or being skeptical to adopt new perspectives or behaviors due to feelings of perfectionism or inadequacy.
- Limited support system or knowledge about how or why to integrate insights gained.

Stage 6: Reoccurrence
- Prefer to avoid as shame and isolation leads to beliefs of being judged, rejected or misunderstood.
- Fear of being vulnerable or trusting others negatively impacts forming and maintaining meaningful relationships.
- Sabotaging behaviours like impulsivity or avoidance as a means to protect self from eventually being hurt or disappointed by the experience.

To further explore and improve these positive experiences to be more fulfilling and meaningful for young adults with childhood trauma, co-creation sessions were conducted. These sessions aimed to provide a platform to test the context and further develop the design direction.

This chapter has translated the literature insights into potential design directions, setting the stage for the co-creation sessions. The next chapter will detail the co-creation process and the insights obtained from the participants.

CO-CREATION SESSIONS

This chapter will delve into the co-creation sessions conducted, presenting the methodology, participant recruitment, session structure and key insights gathered from these sessions.

4.1 Purpose of Co-creation

The co-creation sessions aimed to gain deeper insights into the context of how positive experiences are adversely impacted for young adults by hypervigilance due to their history of childhood trauma and emotional dysregulation. These insights were meant to better understand the goals and challenges faced in these experiences, and use them to further develop the design direction. Involving the target group in a collaborative process at this stage ensures that the intervention will effectively address their unique needs during positive experiences, and make it more fulfilling and meaningful for them.

The purpose of this co-creation phase was to bridge the gap between theoretical insights and practical application, ensuring that the developed strategies are grounded in real-world experiences and tailored to the needs of these young adults.

Defining the Context
Initially, the co-creation sessions aimed to identify relevant categories of positive experiences for 18–22-year-old bachelor students in the Netherlands. This age group was targeted because their brains are still developing and yet they are transitioning to adulthood, taking on independent and societal roles. This adds additional layers to the context. The positive experiences were categorized into ten – Hobbies, Outdoor Activities & Recreation, Travelling Activities, Wellness Activities, Cultural Activities & Entertainment, Social Celebrations & Events, Community Involvement, Dating, Academic & Professional Interactions and Exploration of Other Categories.

To pick the categories to focus on for the co-creation, the different ways an individual learns healthy coping strategies were considered. Individuals can primarily learn healthy coping strategies through therapy, self-learning and social interactions. The focus was narrowed to social interactions because therapy falls outside the project's context and self-learning might not yield the desired outcomes for those with childhood trauma and emotional dysregulation. Within social interactions, the categories were further narrowed down to Social Celebrations & Events and Academic & Professional Interactions, as these settings are most relevant and frequent for young adults and also offers contexts where the effects of hypervigilance can be further examined. These two categories guided the development of the template and co-creation guide.

4.2 Developing the Template and Guide

To facilitate the Co-creation sessions, a template based on journey mapping was developed. The initial draft of this template, found in Appendix B, aimed to map out positive experiences through the six stages: Preparation, Anticipation, Direct Interaction, Reflection, Integration and Reoccurrence. This structure was intended to help participants articulate their experiences, compare their expectations with the reality and identify areas for improvement, particularly in relation to hypervigilance.

Pilot Testing and Adaptation of Co-creation Sessions
The initial template was pilot tested with two peers of the author. Feedback from these sessions revealed a few areas for improvement. Specifically, mapping experiences through six distinct stages proved to be too complex and time-consuming, making it difficult for participants to clearly and completely express their experiences. To address this, the template was simplified into three stages: before, during, and after the positive experience. This adjustment made the process more goal-oriented and easier for participants to navigate. Additionally, participants found it challenging and confusing to clearly differentiate between their expectations and reality. Instead, they preferred to discuss the challenges they faced during the different stages and its interaction with the various emotions they experienced.

A final template (as seen in Figure 8) and a co-creation guide (as seen in

Appendix C) were created. This new approach ensured a clear flow for the session and made it easier for participants to communicate their goals and challenges faced during the experience.

Figure 8 – Template used for the Co-creation Sessions

4.3 Recruiting Participants

The initial target group for the co-creation sessions was Dutch bachelor students at Delft University of Technology. The first poster, found in Appendix D, was mailed to the academic counsellors of different faculties to be posted across their respective departments. Student counselors and psychologists within the University were also contacted to help recruit participants. However, due to the sensitive nature of the subject, the student psychologists and approximately half of the academic counselors declined to put up the poster. Finally, none of the bachelor students signed up, potentially due to lesser reach than expected and the preference of Bachelor students to discuss their experiences in Dutch, among other reasons.

In response, the scope was extended to include both Master's and international students. A revised poster, as seen in Figure 9, was created and posted in the University, and word-of-mouth promotion via social media was also used to increase the outreach. This approach successfully helped recruit six participants, all of whom were international students, predominantly Asian women.

Figure 9 – Poster used to Recruit Participants for the Co-creation sessions

Now that the participants had been successfully recruited, the next step was to conduct the co-creation sessions.

4.4 Format of the Co-creation Sessions

The co-creation sessions were conducted one-on-one in a spacious, private room to ensure maximum comfort and confidentiality for every participant. Each session lasted between 60 to 90 minutes. The facilitator created an environment for honest and open communication, ensuring participants felt heard and respected. The in-depth discussions were designed to subtly explore if, how and why hypervigilance impacted these experiences. Open dialogue was encouraged, and participants enthusiastically shared their experiences as they were driven by a desire to understand themselves better. This curiosity, combined with the comfortable setting, helped participants feel safe to share, dissect and reflect on their experiences.

Each session followed a structured format:

- Introduction and Ice-Breaking Questions:

The sessions began with a brief introduction to set the context, explaining the relevance of past experiences in shaping current social interactions. This introduction touched upon how difficult experiences during childhood could impact an individual's ability to feel relaxed and connected in social situations, highlighting the importance of such experiences for personal growth. Participants seemed receptive to this framing, which indicated an understanding of the workshop's focus. Ice-breaking questions were asked to help participants feel at ease, gather basic insights into their social lives (needs, preferences and past experiences) and gauge whether participants recognized patterns or connections between their past and present experiences.

- Memory Selection:

The participant was asked to recall a recent, significant positive experience that was a Social Celebration & Event or an Academic & Professional Interaction that left them feeling unhappy, angry or disappointed. A list of potential experiences (Appendix E) was provided to prompt their thinking, but most participants were able to immediately recall such an experience without it. Interestingly, all the recalled experiences were in Academic & Professional contexts. This could indicate that these experiences are perceived as less personal and so easier to discuss openly. It could also indicate that these types of experiences are more significant and prominent for the target group.

- Mapping Experience:

The facilitator and participant then mapped the experience using the provided template in Figure 8. An emotions list (Appendix F) was also provided as many participants found it challenging to pinpoint their exact emotions. Articulating their emotions helped them to delve deeper into their experiences, linking their challenging thoughts and actions with their intense or fluctuating emotions. This list also helped some participants to open up about certain emotions that they frequently experienced.

- Discussion and Reflection:

After mapping the experience, the facilitator and participant discussed the challenges the participant faced, with a focus on their thoughts, emotions and any potential links to hypervigilance. Participants were encouraged to identify the significant emotions, thoughts, actions, situational factors and expectations from past experiences that they believed to have played a major role in how the experience unfolded for them. They focused on identifying those

challenges, especially related to hypervigilance, that needed to be addressed to improve similar future experiences. They were prioritized based on the feasibility of change and its potential impact for them.

4.5 Themes from the Co-creation Sessions

The filled templates for each co-creation session, after removing all identifiable information, can be seen in Appendix G. The relevant findings and insights from all participants were combined into a single template, as seen in Appendix H. This synthesis helped identify several themes that validated the findings from the literature, deepened the understanding of the challenges faced, and provided new insights into the complex role emotions, thoughts and hypervigilance play in impacting the positive experiences of young adults.

Before the Positive Experience:
- Performance Anxiety:

Despite being excited, half of the participants mentioned struggles to naturally envision the experience being good for them, and instead relied on mentally preparing themselves leading up to the moment. They mentioned feeling anxious and nervous, picturing all the different ways that it could go wrong. Literature suggests that individuals with childhood trauma and heightened hypervigilance often anticipate negative outcomes due to past experiences of criticism and unrealistic expectations. This fear could have impaired their ability to be confident, as hypervigilance triggers anxiety about potential failure of performance.

"...I was, of course, a bit nervous as I had to make an impression, right?"
"I was not too excited though, because I usually try to not get my hopes up."

 On the other hand, the other half of the participants were looking forward to the experience.

"...making friends was easy for me. I just expected it to be the same here."

- Confidence Extremes:

Participants exhibited a range of confidence issues, from excessive self-doubt to overconfidence. While some believed that they would fail or embarrass

themselves, others expected everything to go as perfectly as they had imagined it would.

"I felt like I have to win first place, not even the runner-up. There was no doubt in my head. I was cocky, I started believing that I am very skilled."
"I was wondering if I am presentable and if companies would even find me interesting."

Literature indicates that childhood trauma can disrupt self-esteem and self-efficacy, leading to fluctuating confidence levels. Hypervigilance can further contribute to low confidence by making them overly cautious, while overconfidence might stem from a defensive mechanism to mask their fears.

During the Positive Experience:
- Intrusive Thoughts:

During these experiences, participants frequently reported that they constantly felt intrusive thoughts about perceived mistakes, either their own or others'. This aligns with research showing that individuals with childhood trauma often experience intrusive memories and negative self-beliefs. Hypervigilance can amplify these intrusive thoughts, making it difficult to focus on positive aspects and leading to feelings of guilt and self-criticism about letting themselves or others down.

"I was sitting there, and I remember feeling ashamed of myself - I still do. I was blaming myself and my upbringing. I found myself wishing I was born elsewhere or had studied in a better school or had better hobbies. I felt so uncool. And that got me thinking if I was unworthy of this opportunity to study here. Like am I even fit to? That's not a great feeling."

"I was unable to vocalize all of my ideas that I wanted to, this voice in my head asked me to "Just shut up""

- Intense Emotions and Blame:

Participants described experiencing intense emotions such as disappointment, anger and guilt when their experiences did not meet their expectations. Literature supports the notion that individuals with childhood trauma are prone to disproportionate emotional responses and maladaptive coping, including self-blame and externalizing blame.

"There was way too much small talk. None of the topics I had in mind were spoken about. I feel bored if people don't talk about something I want. I felt they were all being rude."

As hypervigilance causes a constant state of alertness, individuals are on high alert to assign blame, which prolongs their negative emotional states.

- Feeling Undervalued:

The sense of being undervalued or overlooked was another prevalent theme. Some participants often felt overlooked or undervalued, which led to lowering the engagement and enjoyment than they had initially started with.

"It just felt like they did not really value us…I felt like they were not really interested in any of us."

"I also felt ignored and not valued to an extent. That made me doubt myself"

Research suggests that individuals with a history of childhood trauma often seek external validation to feel valued. Hypervigilance can heighten their sensitivity to perceived lack of appreciation, which further impacts emotional engagement and satisfaction. This significantly lowers their sense of belonging and self-worth.

- Reinforcement of Negative Self-Perception:

One participant mentioned how they were not surprised the experience was bad for them as they considered themselves an embarrassment who always did the wrong thing because they were an impostor. They felt that they were just pretending and were not equipped. Similarly, another participant mentioned how they were used to feeling out of sync during social interactions due to constant feelings of not having enough in common with others.

"I felt they were all being rude. I felt out of sync with others. I kept thinking this was not what I want - I don't know how to put it into words."

Negative self-talk from past experiences, along with hypervigilance, can reinforce their feelings of inadequacy, which is what these participants experienced regularly. This reinforcement overshadowed any positive aspects of their experiences, and sometimes even self-sabotage.

"I knew I had to make an impression but did not want to say the wrong thing. I remember feeling like I was out of place. Like, did I even belong there? Was I smart enough? What if someone asked me something I should know about and I had no idea what they were talking about - I did not want to embarrass myself like that – that's when I left."

- Difficulties with Social Cues:

Participants reported challenges in interpreting social cues and boundaries, which led to them feeling uncomfortable and avoiding any kind of spotlight on them. This matched with literature suggesting that individuals with childhood trauma often struggle with reading social cues.

"I did not initiate deeper conversations either as I did not know when to butt in, especially because there were too many people. I am generally clueless about social cues like these, so I find it easier to just accept it."

Hypervigilance can make individuals highly alert during social interactions, causing participants to fear being considered rude or overbearing, and so choosing to stay within their comfort zone and not let anyone in.

After the Positive Experience:
- Avoidance of Introspection:

Participants commonly avoided reflecting on such experiences, as they were only able to focus on negative aspects. This can be linked to the maladaptive coping of avoidance, where individuals may avoid confronting painful emotions and reflections due to fear of re-experiencing distress. This struggle to process the experience deeply shows an avoidance of introspection as they are stuck on the surface level of the problem.

"I still don't know if it was me like I did not try enough or if it was not my vibe - so I go from self-blame to self-pity."

- Expectations vs. Reality:

The difference between expectations and reality was a common theme, with participants feeling disappointment and guilt when experiences did not meet their expectations. According to research, childhood trauma can lead to unrealistic expectations and heightened sensitivity to perceived failures. This sensitivity could have caused them to have a distorted view of their experiences, focusing on the negative and overlooking any positive aspects.

"There was a mismatch of ambitions, goals and expectations of everyone else vs me - so this made me feel bitchy. I don't like some social norms - like drinking on a afternoon, which they did - so was not good for me. "

"... and my high expectations maybe had an impact? I don't know - like I manifested it"

- Negative Self-Assessment:

Despite recognizing some positives from the experience during the co-creation, participants continued to focus predominantly on the failures of their performance.

"I tried to write the good things about it in my journal, but it only made me feel worse to relive it on paper."

"It barely ended before I started deconstructing all the things I did wrong, which is also a normal feeling for me after every social interaction."

Literature shows that individuals with childhood trauma are often biased to focus on the negative as they struggle to recognize the positive. These struggles are due to constant self-criticism and negative self-beliefs, which is reinforced by their heightened alertness to perceived threats or shortcomings.

- Difficulties Opening Up:

Most of participants mentioned feeling reluctant to share their experiences with others, as they considered themselves a burden or a disappointment. Literature suggests that individuals with childhood trauma often experience difficulties in forming trusting relationships and opening up to others, driven by fears of judgment or rejection.

"I kept all of this to myself. I'm used to keeping my feelings bottled up. I don't want to be a burden. It is just who I am."

"I told no one and cried myself to sleep that night."

As a result, participants relied on their biased perspectives, which lowered their ability to learn from or reflect on their experience.

- Emotional Aftershocks:

The resistance of the participants to move beyond the experience hints at a broader resistance to letting go of negative emotions and their struggles with emotional regulation.

"This whole experience left me with a bitter taste. I feel... felt like a loser. Like I'm the most uninteresting person on this side of the planet."

"I feel my confidence has drained, and it takes a lot of effort to try building it back."

The co-creation sessions revealed the above insights ranging from fear of failure and intrusive thoughts to difficulties with social cues and self-assessment. These findings align and strengthen the insights from literature, giving a clearer picture of the current scenario for these young adults.

This chapter detailed the co-creation sessions and the rich insights gathered from the participants. The co-creation helped bridge the gap between theory and practice, ensuring strategies are grounded in real-world experiences. The next chapter will use these insights to develop personas and design requirements.

PERSONAS AND DESIGN REQUIREMENTS

This chapter will translate the insights gained from the literature study and co-creation sessions into choosing the design direction, and further use these insights to create detailed personas and design requirements, guiding the development of the final concept.

5.1 Chosen Design Direction

The chosen design direction focuses on improving issues with hypervigilance during positive experiences in academic and professional settings. The choice to follow a certain direction was made based on discussions with the project team. Several factors were considered in making this choice, including the potential value and impact of the ideas, as well as personal interest. This decision was informed by both the co-creation sessions and the author's personal preference. Insights from the co-creation sessions highlighted that the participants specifically identified academic and professional interactions as areas of concern for them. This focus aligns with the author's belief that they are better equipped to address hypervigilance-related challenges in these settings. This is because the author believes that therapeutic approaches are better suited for personal life challenges. As a result, the chosen design direction is to address challenges in academic and professional settings.

The insights from literature and co-creation were used to develop personas. These personas are representations of the challenges that the target group faces in academic and professional settings.

5.2 Personas based on research and Co-creation

To create a realistic representation of the target group from literature and co-creation, three personas were generated. These personas are designed to capture the diverse challenges and needs identified by the participants, providing a clear understanding of their experiences. By integrating insights from both the research and co-creation phases, these personas offer nuances

in their challenges and goals within the target group in academic and professional settings, with a focus on the varied manifestations of hypervigilance.

Persona 1: The Self-Doubter (Lucas)

THE SELF-DOUBTER

"It's hard to open up. I'm used to keeping my feelings bottled up as I don't want to be a burden. It is just who I am."

Lucas

Age: 22
Lives in: Utrecht
Occupation: Student
Background: Was emotionally neglected as a child

DESCRIPTION

Lucas is a Master student, graduating in six months. He is looking to expand his professional network to land a job by the time he graduates. He is highly knowledgeable and is committed to personal growth, but often struggles with self-doubt and trusting others.

PERSONALITY
- Social introvert
- Down-to-earth
- Independent
- Avoidant

HOBBIES AND INTERESTS
- Reading
- Long walks in nature
- Cooking for friends
- Watching documentaries

GOALS
- To improve interpersonal relationships
- To express self without worrying about what others think

DISLIKES
- Feels uncomfortable with open displays of emotions
- Avoids situations where they feel vulnerable or exposed

CHALLENGES IN ACADEMIC AND PROFESSIONAL SOCIAL INTERACTIONS
- Preparation Stage - Overthinking and second-guessing due to anxiety and self-doubt, which lowers feelings of preparedness
- Anticipation Stage - Negative self-talk and fear of rejection
- Direct Interaction Stage - Inability to communicate feelings and thoughts leads to self-isolation
- Reflection Stage - Unable to objectively analyze performance
- Integration Stage - Difficulty applying feedback and fear of repeating mistakes
- Reoccurrence Stage - Negative patterns of thinking and cycle of anxiety

Figure 10 – Persona 1: The Self-Doubter

As seen in Figure 10, the Self-Doubter is a Master's student about to graduate who is plagued by self-doubt and struggles with trusting others. His hypervigilance manifests as constant overthinking and second-guessing his abilities, leading to self-isolating himself during social situations due to fear of rejection. He has heightened sensitivity to perceived judgment and failure. His goals include improving his interpersonal skills and expressing himself confidently without worrying about being judged. This persona would benefit from supportive tools that enhance self-efficacy, reduce anxiety related to hypervigilance and enable clearer communication in settings where he feels exposed.

Persona 2: The Self-Critic (Emma)

THE SELF-CRITIC

"I always feel super awkward and I just don't fit in. My brain blows up everything I did. The guilt makes me hate myself."

Emma

Age: 23
Lives in: Amsterdam
Occupation: Student, Intern
Background: Was often punished and criticized as a child

DESCRIPTION

Emma is a Master student, who is currently interning as a junior graphic designer. She loves spending most of her time in creative activities. Despite her passion for her work, she is self-critical and often struggles with feeling comfortable and confident in group settings.

PERSONALITY

- Introvert
- Creative
- Funny
- Self-critical

HOBBIES AND INTERESTS

- Painting and sketching
- Solving puzzles
- Discovering new music
- Visiting galleries and museums

GOALS

- To feel confident and comfortable in public
- To be self-compassionate and believe in own abilities

DISLIKES

- Avoids situations where they must present or speak in front of large groups or crowd
- Hates lack of structure and spontaneity

CHALLENGES IN ACADEMIC AND PROFESSIONAL SOCIAL INTERACTIONS

- Preparation Stage - Overthinking about presenting self and performance
- Anticipation Stage - Heightened anxiety and fear of failure, leading to procrastination
- Direct Interaction Stage - Social awkwardness and hypervigilance leads to misconceptions and misunderstandings, making it challenging to engage and express effectively
- Reflection Stage - Focus on mistakes and feel intense guilt
- Integration Stage - Difficulty learning and improving from the experience, reinforcing negative talk
- Reoccurrence Stage - Consistent lowering of self-confidence in capabilities

Figure 11 – Persona 2: The Self-Critic

As seen in Figure 11, the Self-Critic is a Master's student and junior graphic designer who is deeply self-critical. Her hypervigilance drives her to overthink and experience intense performance anxiety, particularly during high-stakes situations like presentations where she is in the spotlight. She struggles with intense guilt, social awkwardness and procrastination. Her goals are to gain confidence, develop self-compassion and feel more comfortable in public settings. This persona would benefit from tools that counteract self-criticism, improve her self-compassion, reduces self-blame and manages social anxiety, all of which are fueled by hypervigilance. This could help lessen her negative emotional responses and promote a more balanced self-assessment.

Person 3 – The Impostor (Alice)

THE IMPOSTOR

"I feel like I'm outside, just looking in. But inside, I'm a hot mess. I'm always on edge that people can see I'm pretending to have it all under control."

Alice

Age: 24
Lives in: Pijnacker
Occupation: Student, Part-time Barista
Background: Was constantly bullied in high school

DESCRIPTION

Alice is a Master student, working part-time as a barista. She is known among her friends for her insightful advice and vibrant personality. But when it comes to her own professional aspirations, she is uncertain as she struggles to pinpoint her values, beliefs and passions.

PERSONALITY

- Ambivert
- Empathetic
- Cheerful
- Insecure

HOBBIES AND INTERESTS

- Swimming
- Extreme sports
- Meditation
- Voluntary work

GOALS

- To gain better understanding of own values and aspirations
- To feel relaxed and calm during social gatherings with peers

DISLIKES

- Highly sensitive to harsh criticisms and negative judgments
- Lack of authenticity and being in control

CHALLENGES IN ACADEMIC AND PROFESSIONAL SOCIAL INTERACTIONS

- Preparation Stage - Uncertainty about goals from interactions
- Anticipation Stage - Anticipatory stress makes it difficult to approach with a positive mindset
- Direct Interaction Stage - Struggles with maintaining confident facade while facing inner turmoil impacts ability to authentically connect
- Reflection Stage - Self-reflection is not constructive, and is instead self-critical
- Integration Stage - Difficulty integrating insights into actionable steps
- Reoccurrence Stage - Cycle of self-doubts leads to feelings of stagnation, this hindering growth

Figure 12 – Persona 3: The Impostor

As seen in Figure 12, the Impostor is a Master's student and part-time barista who grapples with feeling like an impostor. Her hypervigilance causes anticipatory stress and uncertainty about her professional goals, causing her to maintain a confident facade despite feeling insecure. She fears being exposed as a fraud and struggles with aligning her professional aspirations with her personal values. Her goals are to better understand her values, feel relaxed in social settings and build genuine self-confidence. This persona would benefit from tools that help with goal-setting, addressing feelings of being an impostor and managing her hypervigilance induced stress and self-doubt.

5.3 List of Requirements for Final Concept

Based on the personas, insights, and the focus of the project, here are ten key design requirements to consider for selecting and developing the final concept:

	Addressing Hypervigilance	Design Requirements
1		The tool should boost self-confidence.
2	Self-belief & confidence	The tool should boost self-efficacy.
3		The tool should build internal validation for self-worth.
4		The tool should help user feel equipped for interactions.
5		The tool should encourage building, trusting and sharing with support system.
6	Social preparedness & growth	The tool should enable structured self-reflection and growth.
7		The tool should be adaptable to individual needs and preferences.
8		The tool should provide techniques for managing intense emotions.
9	Emotional resilience & regulation	The tool should address and reframe negative self-talk.
10		The tool should help set achievable goals that can be celebrated.

Table 1 - List of Requirements

Self-belief & confidence:

- The Tool Should Boost Self-Confidence - To address the challenges of the Self-Doubter (Lucas) and The Impostor (Alice), the tool should provide techniques that improve users' self-confidence to handle any challenges. As hypervigilance causes excessive self-doubt and fear of rejection, boosting self-confidence may help users better manage these feelings.

- The Tool Should Boost Self-Efficacy - To help the Self-Doubter (Lucas) and Self-Critic (Emma) feel more capable, the tool should incorporate strategies that boosts users' belief in their abilities to achieve their goals and handle challenges effectively. Hypervigilance often impacts self-efficacy by amplifying one's fear of failure, so validating user's sense of competence can counteract this.

- The Tool Should Build Internal Validation for Self-Worth - To support The Impostor (Alice) and Self-Critic (Emma), the tool should help users build a sense of self-worth from within, reducing reliance on external validation and building self-acceptance as hypervigilance often leads to excessive reliance on external validation.

Social preparedness & growth:

- The Tool Should Help Users Feel Equipped for Interactions - To address the Self-Doubter (Lucas) and Self-Critic (Emma), the tool should provide practical resources and preparation techniques to help users feel more confident and ready for various academic and professional interactions, especially since hypervigilance can make one feel unprepared and overwhelmed.

- The Tool Should Encourage Building, Trusting, and Sharing with Support Systems - To support The Impostor (Alice) and The Self-Doubter (Lucas), the tool should build and strengthen connections with supportive systems, by learning to build trust and share their experiences with others. Hypervigilance can create barriers to forming trusting relationships, so encouraging connection and support will address this challenge.

- The Tool Should Enable Structured Self-Reflection and Growth - To support all personas, the tool should facilitate structured self-reflection that focus on growth, learning and personal development, as hypervigilance often obstructs self-reflection by focusing on the negative.

- The Tool Should Be Adaptable to Individual Needs and Preferences - To support the diverse needs of all personas, the tool should offer customization options that allow users to personalize it according to their specific challenges, needs and preferences.

Emotional resilience & regulation:
- The Tool Should Provide Techniques for Managing Intense Emotions - To help the Self-Doubter (Lucas) and Self-Critic (Emma) manage overwhelming emotions, the tool should offer support to quickly regulate their emotions during and/or after interactions as hypervigilance makes one prone to intense emotional responses.

- The Tool Should Address and Reframe Negative Self-Talk – To counter the Self-Critic (Emma) and The Impostor (Alice), the tool should include features that encourage more positive and constructive internal dialogue as hypervigilance causes one to focus on their perceived flaws and misgivings.

- The Tool Should Help Set Achievable Goals that Can Be Celebrated - To address the Self-Doubter (Lucas) and Self-Critic (Emma), the tool should assist users in setting realistic and achievable goals, enabling ways to track progress and celebrate emotional milestones.

These requirements will be used in the next chapter to assess the concepts and choose a final concept. These requirements will also be used to further develop the final concept.

This chapter synthesized the insights from previous chapters into detailed personas and design requirements. The following chapter will describe the process of developing the final concept, from initial ideation to selecting the most promising idea.

CONCEPT DEVELOPMENT

This chapter will describe the process of developing the final concept, from initial ideation to choosing the final concept by evaluating ideas using the decision matrix derived from the insights of the literature study and co-creation sessions.

5.1 Initial Design Concepts

This phase was built upon the brainstorming session in Chapter 3, where the categories of ideas were further explored to address the unique needs of young adults with hypervigilance-related issues - caused by their childhood trauma and emotional dysregulation, in academic and professional settings. This involved a process of adapting, merging and refining the initial ideas to create a set of potential interventions designed to meet the project's goals.

As outlined in the list of requirements in Chapter 5, the primary objective was to develop an intervention focused on addressing three key areas impacted by hypervigilance: self-belief & confidence, social preparedness & growth, and emotional resilience & regulation. To address these, three distinct yet interconnected concepts emerged, each tackling specific goals and dislikes of the personas identified in Chapter 5.

According to the literature and co-creation sessions, hypervigilance can manifest in academic and professional settings as:
- difficulties with emotional awareness,
- performance anxiety,
- negative self-talk.

Concept 1. Addressing Lack of Emotional Awareness: Emotion Check-in Journal
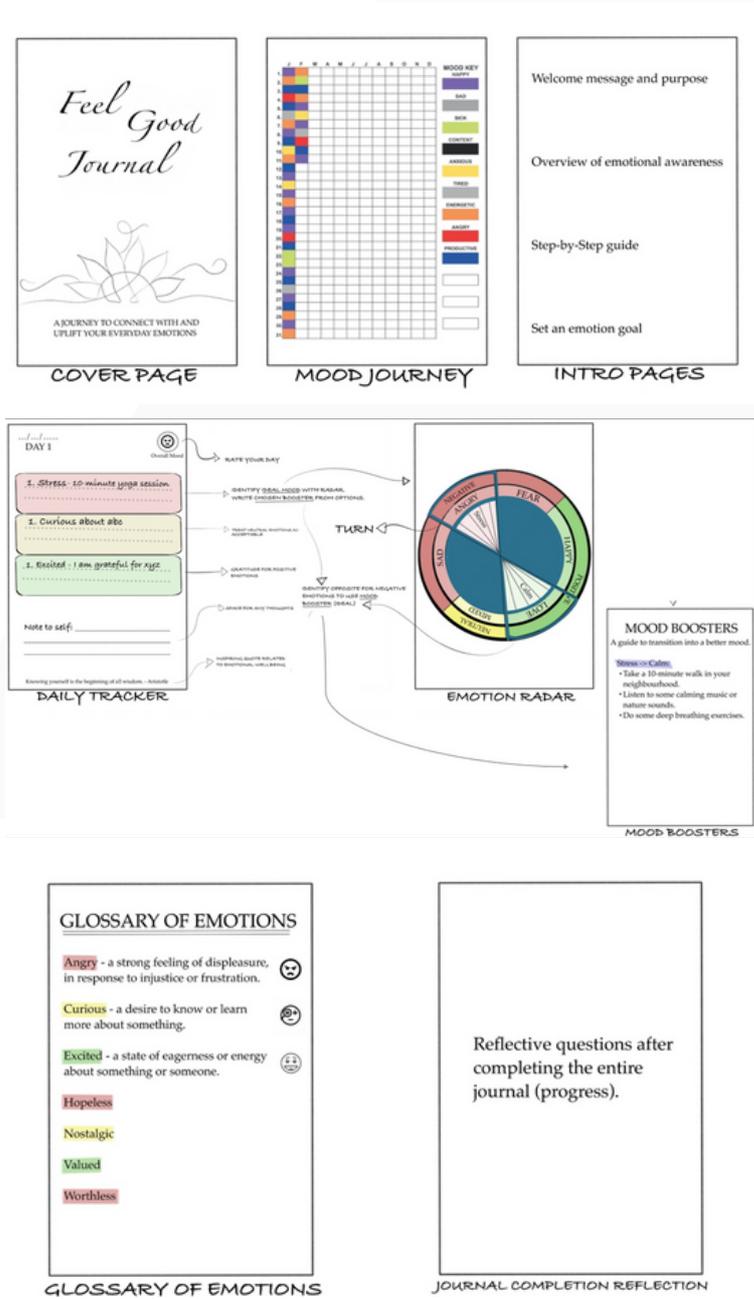
Figure 13 – Emotion Check-in Journal

The Emotion Check-in Journal, as seen in Figure 13, is designed to help the users deepen understanding of their emotions and their impact on daily interactions, which in turn supports their long-term emotional growth. This journal provides a structured framework for the users to record and reflect on their emotions over a 365-day period. Central to this journal is an 'emotion radar', a tool that helps users identify and validate their emotions without becoming overwhelmed.

To further support this, a glossary of emotions is available for the users to articulate their feelings more precisely. All of this helps the users to easily categorize their emotions as positive, negative or neutral.

In addition to daily logging, the journal also offers practical mood boosters - activities that the users can utilize to transition from intense negative to positive moods. Additionally, a goal-setting section allows the users to set and reflect on one or two emotional objectives, which they revisit at the end of the journal to track and appreciate their progress.

For young adults struggling with hypervigilance and emotional dysregulation, the Emotion-Check-in Journal has the potential to build emotional awareness and resilience. Through regular self-reflection and tracking of emotional patterns, the users can identify triggers and develop strategies for managing their emotions more effectively - using the mood boosters as a practical starting point. Over time, this increased self-awareness can reduce the overall frequency and intensity of hypervigilance that the users experience, promoting long-term emotional growth and stability.

Concept 2. Addressing Performance Anxiety: Preparation Cards

Figure 14 – Preparation Cards

The Preparation Cards, as seen in Figure 14, are a deck of cards specifically designed to help students and young professionals manage the challenges of performance anxiety in academic and professional settings. Each card offers strategies, tips and exercises focused on three key areas: confidence boosting, social skills training and stress management.

The cards are intended to be used before and during interactions, helping the users build a positive, calm and confident mindset. Their portability and ease of use makes them a practical companion for moments of spotlight during academic and professional setting. By using these cards, individuals can feel more prepared and assured in their abilities, gain a better understanding of social cues and build more meaningful interactions rooted in genuine connection rather than merely trying to make an impression.

For young adults struggling with hypervigilance and emotional dysregulation, the Preparations Cards have the potential to lower performance anxiety. Performance anxiety often manifests due to a fear of failure, excessive self-criticism and a lack of confidence in academic and professional interactions. By creating a sense of preparedness and calmness, these cards can reduce the likelihood of hypervigilance episodes and improve overall performance in these settings. The cards empower the users to approach interactions with a positive and confident mindset, improving their ability to understand social cues, initiate conversations and maintain social connections.

Concept 3.Addressing negative self-talk and confidence issues: Affirmation Bracelet
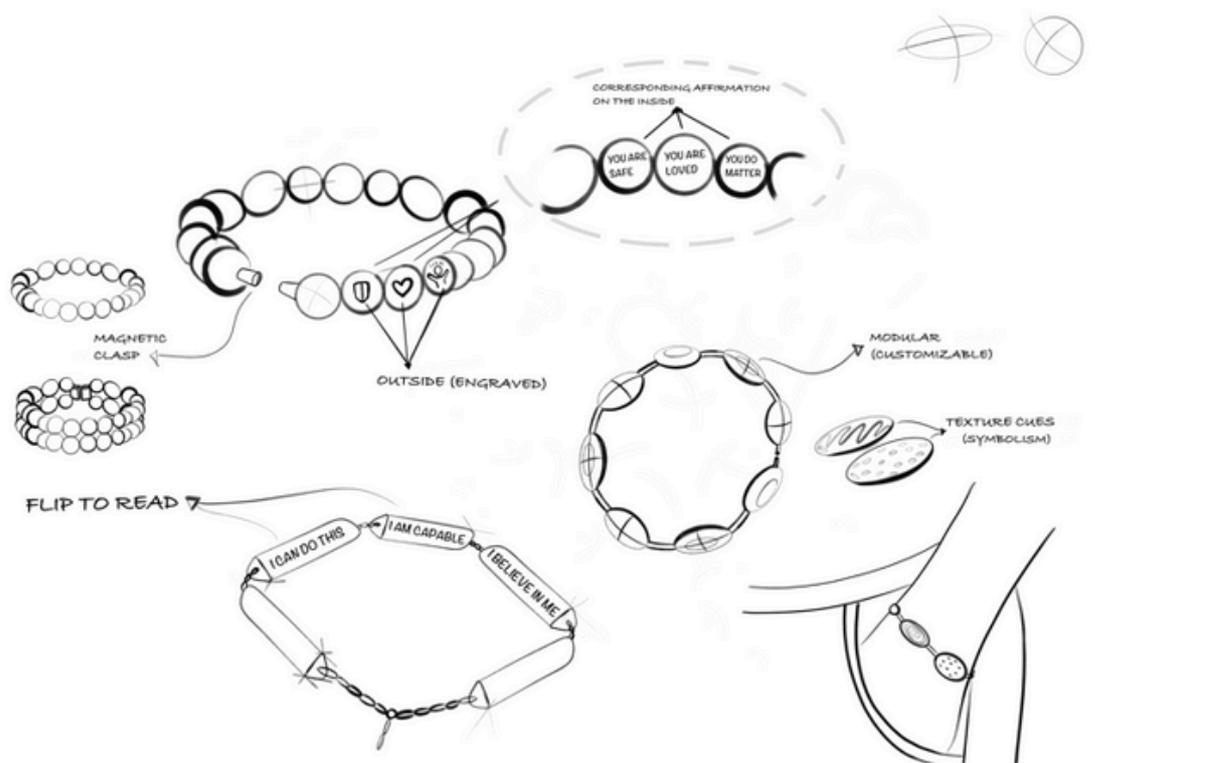
Figure 15 – Affirmation Bracelet

The Affirmation Bracelet, as seen in Figure 15, is a wearable tool designed to help users combat negative self-talk and boost their self-confidence in real-time. The bracelet features discreet symbols, textures or inscriptions that represent positive affirmations. For instance, a shield symbol might signify protection and safety, while a lion symbol could represent inner strength and confidence. These tactile elements serve as immediate, physical reminders for the users to counter self-doubt and reinforce positive thinking during moments of anxiety or stress.

Acting as a form of positive reinforcement, the bracelet helps the users combat negative self-talk stemming from self-doubt and a lack of confidence. The bracelet's meaning can be personalized by the wearer, making it a unique and intimate tool for building self-assurance. It can be worn in any professional or academic setting, making it a versatile accessory that users can touch or glance at to reinforce positive thoughts. The bracelet's design can also serve as a conversation starter, allowing users to connect with others in a comfortably vulnerable manner if they choose to share its purpose. Its unisex

and stylish design ensures it blends seamlessly into professional or academic environments, making it a practical and discreet companion.

For young adults struggling with hypervigilance and emotional dysregulation, the Affirmation Bracelet has the potential to interrupt negative self-talk and replace them with affirmations that build self-esteem and confidence. By incorporating sensory touch, the bracelet helps lower anxiety levels, making the user feel more grounded and in control. This tool is particularly beneficial in high-pressure environments, where quick mental shifts can significantly impact performance and interactions.

While each of these concepts targets a specific challenge posed by hypervigilance, their strength lies in their collective ability to form a comprehensive toolkit. Together, they equip young adults to be more present, connected and emotionally expressive during social interactions in academic and professional settings. The Emotion Check-in Journal builds emotional awareness to manage triggers and responses. The Preparation Cards offer strategies for high-pressure situations, improving readiness and confidence. The Affirmation Bracelet provides real-time reinforcement against negative self-talk. Combined, these tools address immediate impacts of hypervigilance while supporting long-term personal growth, emotional regulation and social confidence.

6.2 Decision Matrix to Choose Final Concept

The initial design concepts were focused on addressing the three key areas impacted by hypervigilance in academic and professional settings - self-belief & confidence, social preparedness & growth and emotional resilience & regulation. This led to the development of three distinct but interconnected concepts: the Emotion Check-in Journal, the Preparation Cards and the Affirmation Bracelet. Each concept tackles specific challenges related to hypervigilance, such as emotional awareness, performance anxiety and negative self-talk.

But due to the constraints of this project, only one concept can be selected for further development. So, the next step is to evaluate these concepts using a decision matrix, ensuring that the most effective and impactful intervention is chosen. This matrix was based on the design requirements from Chapter 5, derived from the insights of the literature review and co-creation sessions, as well as the specific needs of the personas.

	Addressing Hypervigilance	Design Requirements	Emotion Check-in Journal	Preparation Cards	Affirmation Bracelet
1	Self-belief & confidence	The tool should boost self-confidence.	Weak	Strong	Strong
2		The tool should boost self-efficacy.	Weak	Strong	Weak
3		The tool should build internal validation for self-worth.	Moderate	Moderate	Strong
4	Social preparedness & growth	The tool should help user feel equipped for interactions.	Weak	Strong	Weak
5		The tool should encourage building, trusting and sharing with support system.	Moderate	Moderate	Moderate
6		The tool should enable structured self-reflection and growth.	Strong	Moderate	Weak
7		The tool should be adaptable to individual needs and preferences.	Strong	Moderate	Strong
8	Emotional resilience & regulation	The tool should provide techniques for managing intense emotions.	Strong	Moderate	Strong
9		The tool should address and reframe negative self-talk.	Strong	Strong	Strong
10		The tools should help set achievable goals that can be celebrated.	Moderate	Strong	Weak

Table 2 - Decision Matrix

The decision matrix provided the following insights to aid the selection of the final concept:

Concept 1: Emotion Check-in Journal
- Strength: The journal was particularly strong in enabling structured self-reflection and growth, providing techniques for managing intense emotions, being adaptable to individual needs and in reframing negative self-talk.
- Average: The journal rated moderately well in building internal validation for self-worth, encouraging sharing with support system and setting achievable goals.
- Weakness: The journal was weak in boosting self-confidence, self-efficacy and helping users feel equipped for interactions, which are critical aspects for reducing performance anxiety in academic and professional settings.

Concept 2: Preparation Cards
- Strength: The cards scored high in boosting self-confidence, self-efficacy and helping users feel equipped for interactions. They also effectively address and reframe negative self-talk, and help set achievable goals.

- Average: The cards are moderate in enabling structured self-reflection and growth, as their primary focus is on practical application rather than long-term reflection. This tool is also moderately effective in building internal validation, providing techniques for managing intense emotions and adapting to individual needs.
- Weakness: Interestingly, the cards are not weak in any of the requirements as they all address them to a certain degree.

Concept 3: Affirmation Bracelet
- Strength: The bracelet ranks high in addressing and reframing negative self-talk, building internal validation for self-worth and being adaptable to individual needs. It also provides strong techniques for managing intense emotions and boosts self-confidence.
- Average: The bracelet performs moderately in helping users trust and share with their support system by encouraging them to freely talk about their bracelet, which can take some pressure off from the interaction.
- Weakness: The bracelet proves weak in boosting self-efficacy, helping users feel equipped for interactions, setting achievable goals and enabling structured self-reflection and growth.

6.3 Chosen Design Concept

After evaluating the concepts using the decision matrix, the second concept of 'Preparation Cards' emerged as the most effective choice for further development. The decision was guided by the following key factors:

- Comprehensive Coverage: The cards effectively address all relevant design requirements, effectively working to boost self-confidence, manage stress and anxiety, and combat negative self talk, all of which are essential for overcoming performance anxiety.

- Versatility: While the Emotion Check-in Journal and the Affirmation Bracelet each had their strengths, the Preparation Cards offers a more balanced approach. They combine immediate relief strategies with tools for ongoing skill development.

- Practical Application: The cards provide practical strategies that users could utilize not only to prepare beforehand, but also for real-time high-stress moments during academic and professional interactions.

- User Empowerment: The cards empower users to feel better equipped, countering the effects of hypervigilance by providing them with a sense of preparedness, calmness and confidence.

The 'Preparation Cards' concept will be further developed under the title 'Converse Pro', a card tool designed to help young adults overcome performance anxiety and enhance their social interactions in both academic and professional settings.

This chapter detailed the concept development process and evaluated the proposed concepts against the design requirements to choose the final concept. The following chapter will focus on the development of the chosen concept, 'Converse Pro', a card tool that addresses performance anxiety.

FINAL CONCEPT

This chapter will provide an in-depth exploration of 'Converse Pro', including its final design, user scenarios, feasibility & viability and benchmarking against existing tools.

7.1 Converse Pro

Converse Pro, as seen on Figure 16, is a tailored card-based tool designed to guide students and young professionals in managing and overcoming their performance anxiety in academic and professional settings The cards are structured to provide actionable strategies and tips for building self-confidence, managing stress and reducing negative self-talk – key aspects of performance anxiety, which is common trigger of hypervigilance for the target group.
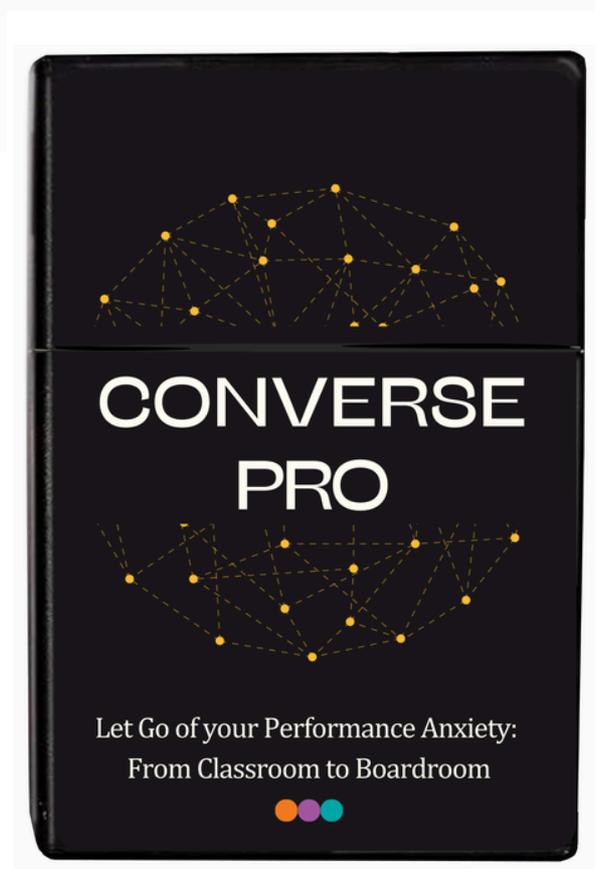
Figure 16 - Converse Pro

Goal, Mission and Vision of Converse Pro

- Goal: The primary goal of Converse Pro is to equip individuals with the practical tools to navigate high-pressure interactions in academic and professional settings, and help them feel confident, calm and positive. It addresses the different aspects of performance anxiety by providing both continuous personal development and immediate relief techniques. This way, individuals feel prepared for such interactions, and are less likely to trigger hypervigilance.

- Tagline: The tagline, as seen in Figure 15, is "Let go of your performance anxiety: from classroom to boardroom", helps to clearly and concisely convey the goal and target audience of the tool.

- Mission: "To empower students and young professionals with actionable tools for self-confidence and social success in academic and professional settings".

- Vision: "To create a world where students and young professionals feel equipped and confident to engage in meaningful interactions and achieve their full potential, regardless of their social or emotional challenges".

Target Audience

- Students: Individuals navigating academic pressures, such as delivering presentations, participating in group projects and engaging in class discussions, where being put in the spotlight causes challenges related to self-confidence, anxiety and negative self-talk.

- Young Professionals: Individuals transitioning into or adapting to professional environments that requires effective communication, networking and teamwork, where stepping into the spotlight, causes challenges related to self-confidence, anxiety and negative self-talk.

- Others: Any other individual facing difficulties with confidence, anxiety and negative self-talk in their professional lives when stepping into the spotlight, such as presentations, networking events, team-building activities, meetings and conferences.

Rationale for Card Format
Several other formats for this tool were also considered before deciding on a card-based approach.

- Dice: A dice form is quick to use, and the randomness adds a layer of increased engagement. But the limited sides and size restrict the range of strategies and the depth of instruction that can be provided.

- Book: A book form is much more informative and comprehensive, but they are not as practical for quick, on-the-spot usage, and the user may also find this level of in-depth information cumbersome or irrelevant.

- Bracelet: A bracelet form is wearable, discreet and provides a sensory experience, but similar to the dice form, lacks depth of guidance required for detailed support, and is only suited for on-the-spot use.

So, the decision was made to adopt a card-based format for Converse Pro. Opting for a physical form of these cards instead of digital was based on the following considerations:

- Physical Experience: The tactile nature of the cards provides a grounding effect, making the experience more engaging compared to a digital format. The sensory experience of holding physical cards can create a sense of deep connection with both self and the cards.

- Focused Interaction: Unlike digital formats that may introduce distractions like social media notifications, the physical form of the cards allows the users to focus solely on engaging with the content, allowing for better absorption of the strategies and tips provided.

- Ease of Access: The cards are easily portable, discreet and suitable for situations where digital devices may be inappropriate, difficult or distracting.

Usage of the Cards
Converse Pro is designed to be used in three main ways:

- Dry-Run Before Major Interactions: The users have a structured way to practice or 'dry-run' social interactions in a low-stakes environment. For instance, before attending a networking event, a user might go through the relevant cards to mentally prepare for different scenarios, thus reducing anxiety and building confidence. This helps them to enter the event with increased confidence, reduced anxiety and a positive mindset – all of which lowers triggering hypervigilance.

- On-the-Spot Usage: The users can make use of certain cards that are tailored for immediate use during high-stress moments, such as breathing and grounding techniques for anxiety or panic attacks (Boudin, 2023). This provides quick and effective strategies to manage anxiety, which lowers hypervigilance and helps better immerse in the interaction.

- Weekly Routine: The users can incorporate the cards into regular practice aimed at ongoing skill development and refinement of social skills and healthy coping behaviours.

Addressing the Personas

For hypervigilance-related challenges during moments of spotlight in academic and professional settings for the personas in Chapter 5, Converse Pro addresses their goals and dislikes in the following manner:

- The Self Doubter: Converse Pro directly addresses the Self-Doubter's struggles with self-doubt and overthinking by offering structured preparation for social interactions. The tips and exercises on the cards help build confidence by providing clear strategies for communication, reducing the anxiety felt in these settings. The ability to mentally dry-run or rehearse these interactions helps ease the fear of rejection and judgment, and instead feel reassured of own capabilities. Additionally, carrying the cards act a tangible reminder to stay present while engaging more openly and confidently with others, thus improving interpersonal skills.

- ·The Self-Critic: As the Self-Critic is extremely harsh to themselves and prone to intense anxiety about their self-perceived performance, Converse Pro acts as a practical tool to counter these self-critical thoughts. The cards include affirmations and exercises specifically designed to challenge negative self-talk and promote self-compassion. Using these cards before major interactions helps manage performance anxiety, and so can be focused on staying calm and centered. The cards also gradually encourage exploring beyond comfort zones, creating a sense of achievement and a more balanced self-view. This reduces the tendency to worry about others' perception of self and aids performing more confidently in public settings.

- The Impostor: As the Impostor deals with a lot of uncertainty surrounding themselves, Converse Pro helps with goal-setting tips that help gain clarity of own values and aligns them with professional aspirations, which lowers their stress leading up to and during such interactions. The cards offer strategies that acknowledge own achievements, thus reinforcing a sense of competence. The cards offer support to reduce feelings of insecurity and help grow inner confidence.

Composition of Deck
The Converse Pro deck consists of carefully curated 40 cards. Limiting it to 40 cards keeps it simple and focused yet engaging due to variability. This deck addresses the three aspects of performance anxiety in academic and professional settings, where each card tackles one or more of these aspects:

- Confidence Boosters: Strategies, exercises and role-playing scenarios aimed at enhancing self-belief and self-worth.

- Reframe Negative Self-talk: Affirmations, practical tips and resources to improve internal dialogue and create a positive mindset.

- Stress and Anxiety Management: Immediate relief techniques such as breathing exercises, mindfulness practices and grounding techniques.

Design and Features
The design of Converse Pro's cards is intentional, incorporating card design principles (Nurain et al., 2024) and color theory (Chapman, 2010) to maximize its functionality and the user experience. Here's a detailed explanation:

Color Scheme
The cards are predominantly black and white. Using black and white as the primary colors ensures clarity and simplicity. Black offers strong contrast and readability, essential for quick reference, while white provides a clean, uncluttered background. This high contrast enhances text legibility and ensures that the card's content stands out clearly against the background, reducing cognitive overload for users under stress.
Yellow is used for highlights. Yellow is associated with positivity, energy and optimism. It is known to grab attention and evoke feelings of warmth and encouragement, and users are more likely to feel uplifted and motivated. Yellow also contrasts well with black and white, ensuring that highlighted information is easily visible.

Face of the Card (Figure 17)

Title of Card

Icon for Theme of Card

One-Line Description

Color Code

Context Icons
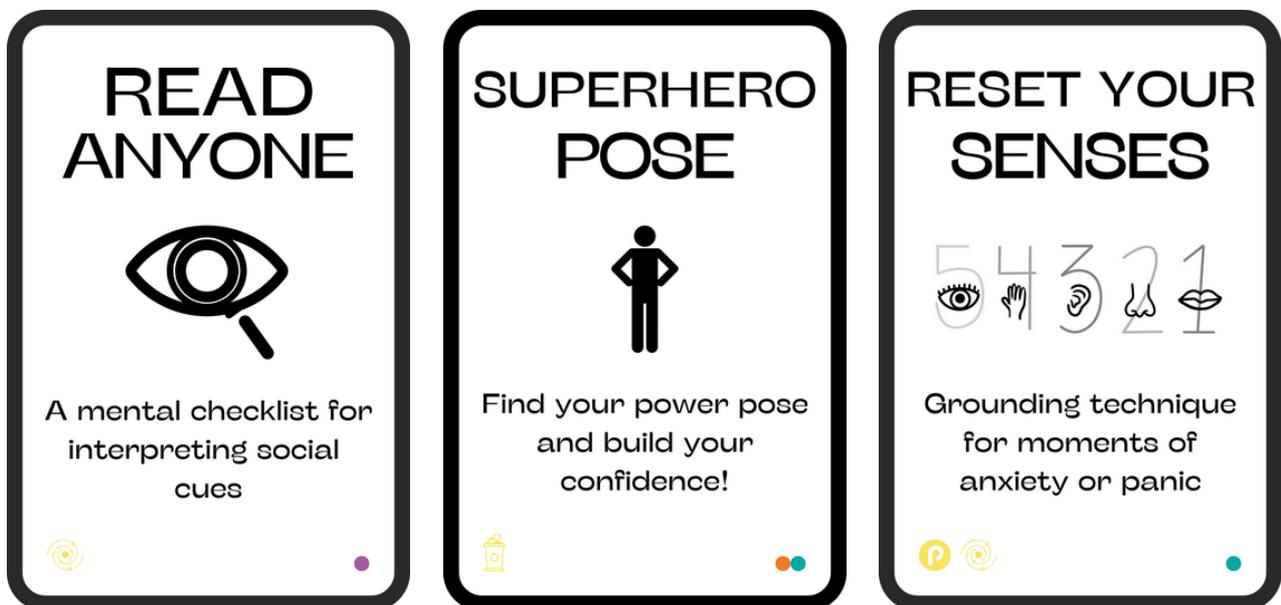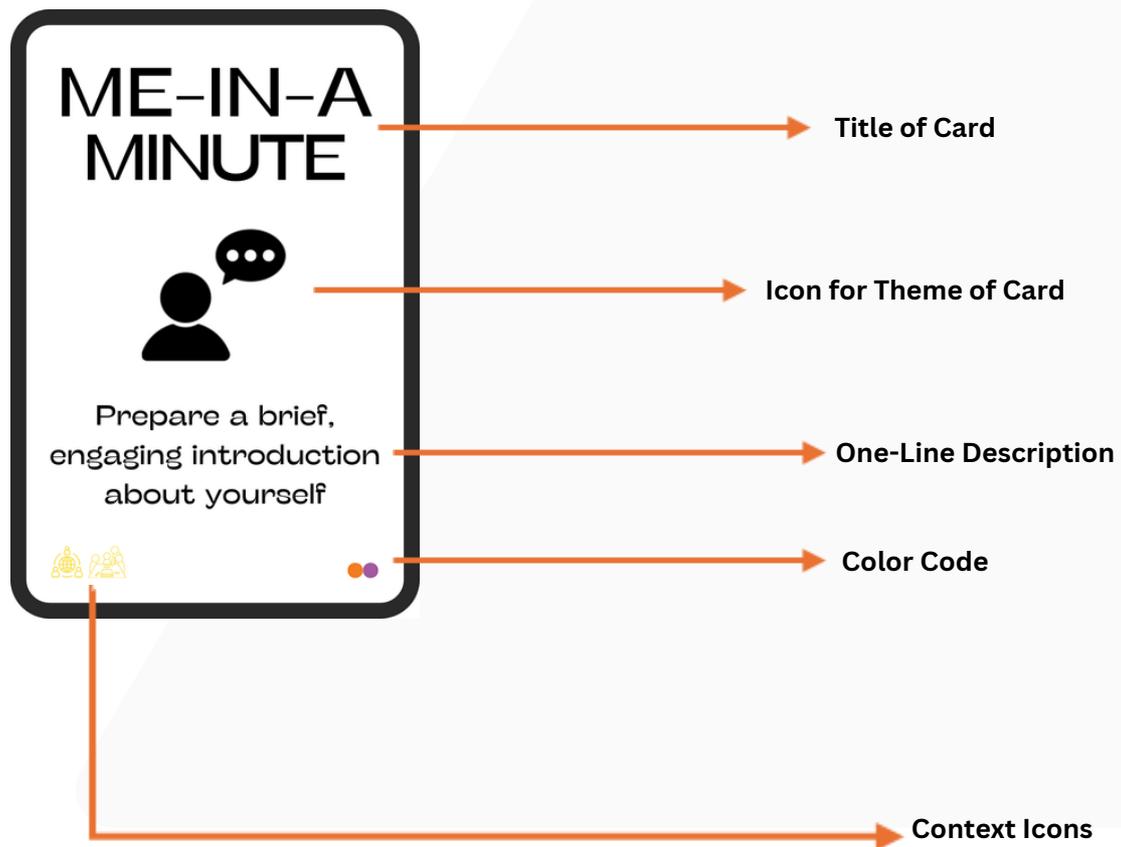
Figure 17 - Face of the Card

The face of each card introduces it and provides verbal and visual summary of the card:

- Title of Card: The card's title is prominently placed at the top in a large font. This design choice ensures that users can quickly identify the card's focus, without needing to sift through extensive text.

- Icon for Theme of Card: Below the title, each card features an icon that visually represents the card's theme. They serve as visual cues that enhance attention and recall, particularly in stressful situations. Visual aids help users quickly associate the card with a specific strategy or tip, reducing cognitive load and making it easier to access the information when needed.

- One-Line Description: Each card includes a concise, one-line description of its goal. This brief statement summarizes the card's purpose and the strategy it covers, which provides users with immediate clarity. The simplicity of the description helps users quickly recall the card's core message without delving into lengthy instructions every time, which is especially when quick decision-making is essential.

- Context Icons: On the bottom left of the card, small icons in yellow indicate the contexts in which the card can be used. These icons help users identify whether the card is for general use or specific situations, such as public presentation or introducing self to a team. Highlighting this feature in yellow makes it easy and quick for the users to select the appropriate card based on their current needs.

- Color Code: The bottom right of each card features colored circles in three distinct color codes. The orange circle acts as 'Confidence Boosters' as orange is often associated with confidence and energy. The purple circle helps with 'Reframing Negative Self-Talk' as purple conveys introspection. and transformation, making it suitable for building a positive mindset. The blue circle represents 'Stress and Anxiety Management' as blue is associated with calmness, tranquility and relaxation. These colored circles guide users to easily identify which aspect of performance anxiety a card addresses.

Back of the Card (Figure 18)

Title of Card

ME-IN-A-MINUTE [To introduce self]

Create a quick, two-minute personal introduction of yourself to a potential or new employer, peer or mentor.

Effect of Card

Purpose

How To:

Write a brief introduction about yourself that focuses on your academic achievements, career goals and/or past projects that may interest others. Be authentic and provide a hook or anecdote that makes the other person want to engage with you.

To Illustrate:

"Hi! I'm Sam and I've been fascinated by programming since I was 11 and my dad taught me to write a basic algorithm. What started as a hobby is now my passion and I'm about to graduate in Computer Science at TU Delft. Lately, I've been reading a lot about AI in healthcare, and I know your company is one of the leading experts in this. If you have the time, I'd love to hear about the development of your upcoming app 'Z'."

Detailed Instructions with Illustrations or Examples

MINDSPACE

Mindspace

Tips: *i. Speak it, don't memorize it*
ii. Before leaving your home, practice with a friend or in front of a mirror
iii. Keep your right hand free to shake hands or exchange business cards

Additional Tips and Resources

RESET YOUR SENSES [To calm self]

When you feel anxiety or panic setting in, use this practical technique to ground yourself in the present moment by engaging all of your senses.

Look Around And Find:

👁 5 things you can see

✋ 4 things you can feel

👂 3 things you can hear

👃 2 things you can smell

👅 1 thing you can taste

MINDSPACE

Tips: *You can take this grounding technique one step further. Once you do the above exercise, take 5 deep breaths and vividly picture 5 things you're grateful for in your life right now.*

Figure 18 - Back of the Card

The back of each card offers detailed guidance and additional features to enhance the user experience:

- Title: Found at the top left in the largest font on this side of the card. This repetition ensures that users can quickly identify the card's focus even when flipped, maintaining consistency and ease of use.

- Effect of Card: Positioned at the top right of the card in a yellow bubble, this section briefly states the card's main effect, such as "To calm self" or "To introduce self." The use of a yellow bubble highlights this information, making it easily noticeable and linking the effect to the card's purpose.

- Purpose: Located beneath the Title and Effect, this one-line statement provides the users with a brief explanation of how the card contributes to managing performance anxiety along with the specific context of usage.

- Detailed Instructions with Illustrations or Examples: This section has the most content in each card. It offers clear, step-by-step guidance on how to implement the strategy or exercise, where the detailed instructions reduce the risk of misapplication and eases feeling overwhelmed. Illustrations, examples or templates may be included to provide practical and visual demonstrations, making it more relatable, understandable and actionable for the users.

- Mindspace: A yellow box located below the Detailed Instructions is intended for users to jot down personal notes, reminders or affirmations. This feature allows for personalization and self-reflection, making the card more relevant to individual needs and preferences. It is recommended for this space to be filled with a pencil or an erasable marker to ensure reusability and adaptability.

- Additional Tips and Resources: Positioned below the Mindspace section, this feature includes further advice or links to external resources, such as articles, books, videos or workshops. It also suggests additional ways or levels to enhance the skill further, supporting continuous learning and personal growth. Providing further resources and additional ways to challenge self-development helps the users to address long-term hypervigilance effects and maintain engagement with the card tool as a resource for continuous improvement.

Portability of Converse Pro
Converse Pro is designed with portability in mind. The cards are compact and lightweight, allowing them to fit effortlessly into a bag, desk drawer or pocket. This ensures that the users can have immediate access to their preferred cards, even if they prefer to only carry one or two cards. The deck's portability offers reassurance of a reliable support system during stressful moments, no matter where the user is.

As each person's experience with anxiety and hypervigilance is unique, Converse Pro includes a variety of techniques and strategies to meet diverse needs. Users can customize their experience by selecting cards that address their current challenges or use the Mindspace section on the back of each card to adapt and personalize the strategies over time. This adaptability enhances the tool's relevance, supports ongoing growth of self-confidence, encourages positive self-talk and helps the users manage their anxiety more effectively.

For those who prefer to not carry physical cards or seek a more personalized approach, alternative options can be suggested:

- Wearable Prompts: A wearable item such as a bracelet or keychain can act as a tactile reminder to use the cards or recall relevant techniques. This provides a continuous, unobtrusive nudge to encourage the users to utilize the cards when needed.
- Sensory Cues: Other physical reminders, such as a smooth pebble or a fidget spinner can also be used to provide sensory cues. These reminders are effective prompts to engage in calming practices or access specific strategies.
- Vibration Reminders: Users can set vibration reminders at timed intervals on their smartphones or wearable devices to remind them to pause, take a breath and engage with relevant strategies. These vibration alerts provide a subtle way to incorporate anxiety management techniques like mindfulness into the user's daily routines without drawing unwanted attention.

Converse Pro Community Website
The Converse Pro online community extends the functionality of the cards by providing a digital space where the users can continue their development with the support of others facing similar challenges. Each Converse Pro deck comes with a unique code that grants access to this exclusive online community. As seen in Figure 19, with this code, the users can create an anonymous username and password, ensuring a balance of privacy and engagement.
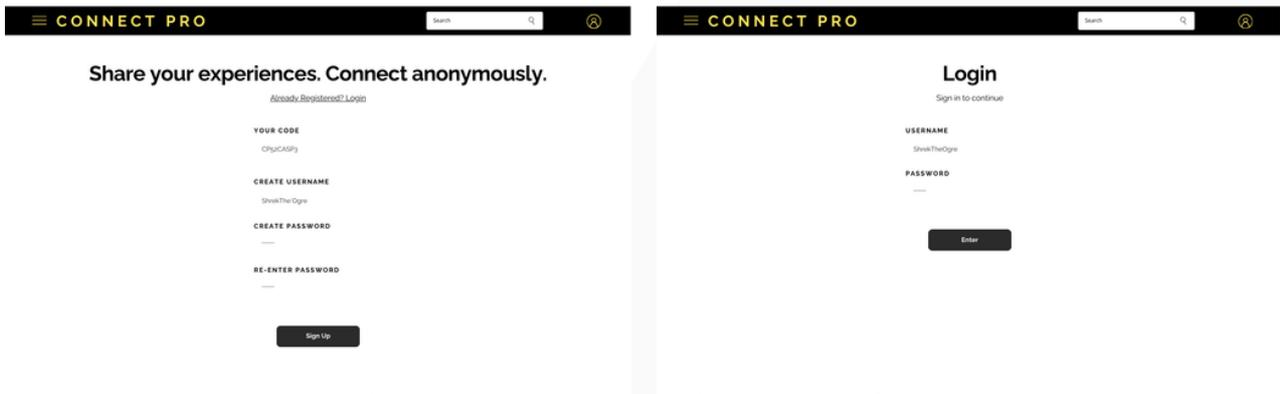
Figure 19 - Accessing Online Community

The primary purpose of the online community is to facilitate the sharing of experiences with the cards. As seen in Figure 20, the users can review the different cards, rate them and share what worked or didn't work for them. They can discuss how they adapted the strategies, the additional steps they took for further self-development and how beneficial each card was in managing their performance anxiety, whether it involved building confidence reframing negative self-talk or managing stress & anxiety. Additionally, the users can share how the strategies worked in different contexts, and how they utilized the portable cards—whether they carried the cards themselves or used alternative reminders. These shared experiences act as inspiration for others and become a valuable resource for collective learning.
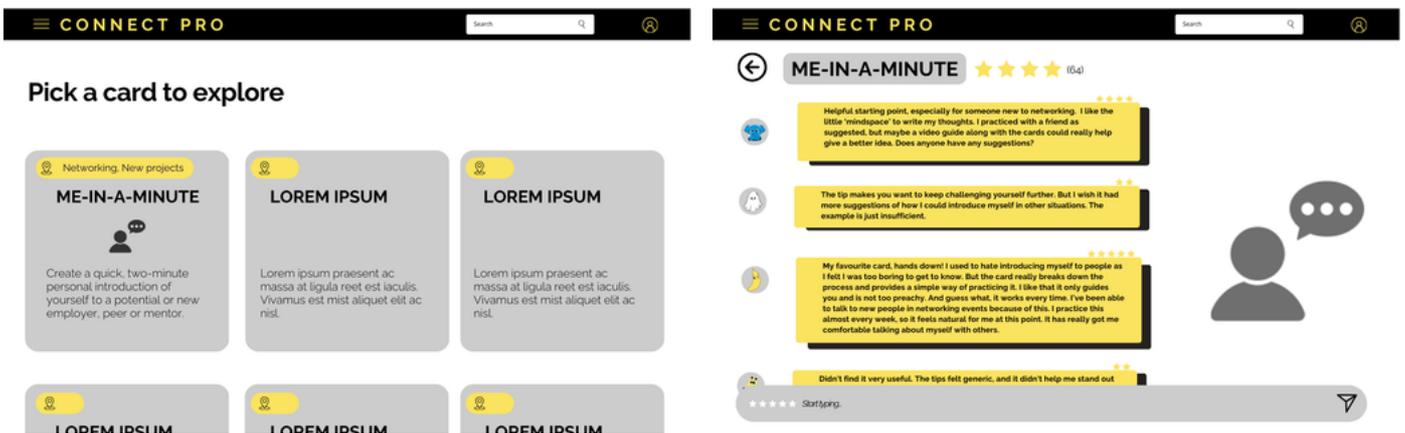
Figure 20 - Sneak Peek of Online Community

The website also allows the users to join discussions about specific cards, share their journeys and offer support to one another. This interaction builds a sense of community, thereby helping the users to feel connected and less isolated in their efforts to manage their performance anxiety. This sense of belonging and mutual encouragement reinforces the idea that the users are not alone in their journey.

To maintain a safe and supportive online environment, the website is moderated by a trained professional who ensures that the discussions remain focused on the tool's goals and mission, decorum is maintained and access is restricted to those who own the deck. This helps preserve the integrity and exclusivity of the community.

In addition to benefiting the users, the continuous feedback and ideas shared on the website are invaluable for the ongoing development of Converse Pro. The reviews and discussions provide insights into the effectiveness of individual cards and suggest potential cards, contexts or target groups to address in the future. This feedback loop ensures that Converse Pro evolves with the needs of its users, maintaining its relevance and effectiveness over time.

7.2 User Scenario

The use of Converse Pro in real-life situations will be demonstrated using a storyboard. The scenario is designed to illustrate the journey of a typical target user as they engage with the tool, highlighting its practical application and benefits. This scenario is based on insights gathered from the literature, co-creation sessions and the personas developed.

Overview of User Scenario
- Name: Alex
- Age: 22
- Occupation: Final-year university student
- Situation: Alex has always been a diligent and ambitious student but struggles with severe performance anxiety, particularly in professional settings. She feels an overwhelming pressure to secure a job before graduation but is held back by self-doubt and fear of judgment during networking events. Alex is in the last semester of her university studies and knows she needs to start networking to secure a job after graduation. However, her anxiety and lack of confidence have always made these situations incredibly stressful for her. She often finds herself stuck in negative self-talk, questioning her worth and abilities. Despite her best efforts, she can't shake the feeling that she'll never be good enough or capable enough to impress potential employers.

Step 1: Identifying the Need (Figure 21)
- Initial Struggle: Alex recognizes that her anxiety is becoming a significant barrier to her success. After a particularly tough experience at a networking event where she felt completely out of place, she decides to seek help.
- Counseling Session: Alex visits her academic counselor, who listens to her concerns and suggests trying Converse Pro—a card-based tool designed to help users overcome performance anxiety. He explains how the tool can help her build confidence, reframe negative thoughts, and manage anxiety in professional situations.

Meet Alex, a university student in her final semester. She is bright, passionate and driven. Her friends consider her a happy and cheerful person.

Figure 21 - Identifying the Need

Step 2: Engaging with the Tool (Figure 22)
- First Encounter: Skeptical but willing to try anything that might help, Alex takes the deck of cards home. She spends some time going through the instructions and begins to familiarize herself with the different exercises and strategies each card offers.
- Regular Practice: Alex starts using the cards daily, focusing on exercises designed to reduce negative self-talk and build confidence. She finds the mindfulness techniques particularly helpful in calming her anxiety, and the cognitive behavioral strategies assist her in challenging and reframing her self-critical thoughts.

He introduces her to Converse Pro—a card-based tool specifically designed to help people like Alex overcome their performance anxiety in academic and professional settings. Skeptical yet hopeful, Alex decides to give it a try.

She starts exploring the cards, discovering how they offer a variety of strategies and exercises to tackle the very thoughts and fears that have been weighing her down.

As she prepares for an upcoming networking event, Alex begins to practice daily. The cards become her guide, helping her calm her nerves and reframe her negative thoughts - building the confidence she has always lacked.

Figure 22 – Engaging with the Tool

Step 3: Preparing for the Event (Figure 23)
- Personalizing the Experience: As she prepares for an upcoming networking event, Alex identifies specific cards that resonate with her particular challenges—such as managing anxiety and boosting self-confidence. She practices the suggested exercises, like role-playing introductions in front of a mirror and rehearsing positive affirmations.
- Day of the Event: On the day of the networking event, Alex feels better prepared than ever. She takes one of the grounding technique cards with her, keeping it in her pocket as a tangible reminder of the strategies she's learned. This small but powerful action helps her stay calm and focused as she navigates the event.

On the day of the event, Alex feels a shift. Armed with her newfound confidence and one of the grounding technique cards tucked in her pocket, she steps into the room.

Figure 23 - Preparing for the Event

Step 4: Experiencing the Benefits (Figure 24)
- At the Event: During the event, Alex notices a significant change in how she interacts with others. Instead of hiding in the corner, she actively engages in conversations, feeling less pressure to impress and more comfortable just being herself. Whenever she starts to feel overwhelmed, she discreetly uses the grounding technique she practiced, which helps her regain composure and continue connecting with others.
- Post-Event Reflection: After the event, Alex reflects on how different this experience was compared to her previous attempts. She feels a sense of accomplishment and realizes that the strategies she learned from Converse Pro truly helped her manage her anxiety and focus on making meaningful connections rather than worrying about others' perceptions.

For the first time, she does not just survive the event—she thrives. She connects with people, not because she was trying to impress them, but because she was genuinely present.

This helps her be less critical of herself and actually enjoy the experience. The grounding technique card in her pocket becomes her secret weapon, helping her stay centered whenever her anxiety creeps in.
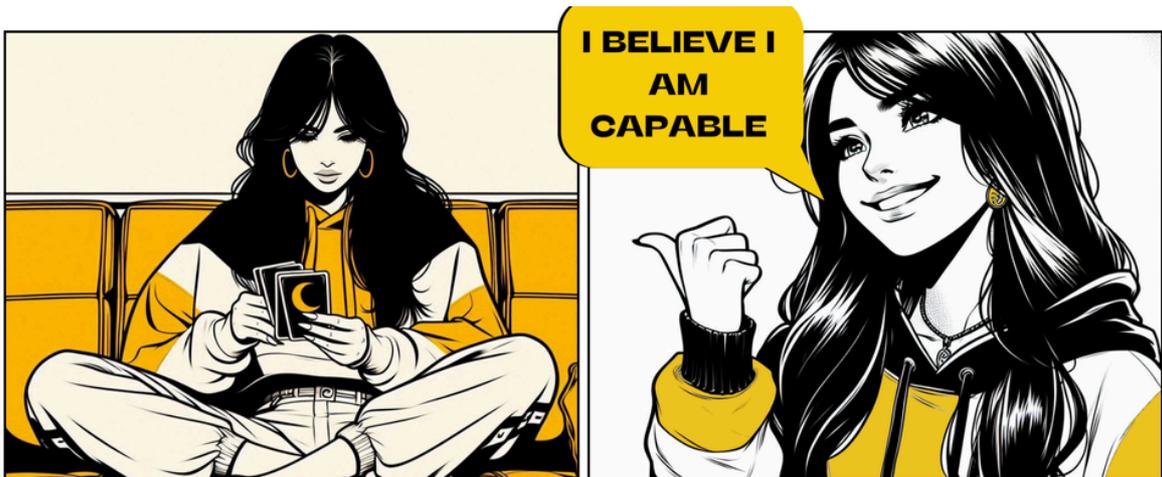
Afterwards, Alex continues to use the cards as part of her daily routine. Each day, her confidence grows, and she begins to see her professional aspirations in a new light—not through the lens of past criticisms, but with a newfound belief in her abilities.

Figure 24 – Experiencing the Benefits

Step 5: Long-Term Integration (Figure 25)

Continued Use: Encouraged by her progress, Alex incorporates the cards into her daily routine. She also joins the Converse Pro online community, where she connects with others who share similar struggles and successes. This community provides her with additional support and tips, helping her continue to build on her progress.

- Transformation: Over time, Alex's confidence grows, and she starts to approach networking and other professional challenges with a newfound sense of ease. She no longer sees these situations as insurmountable obstacles but as opportunities to connect and grow.

She also joins the Converse Pro online community—a supportive space that helps her stay motivated and connects her with others who share her journey, all while maintaining her privacy. The online community helps her to continuously learn and grow.

Over time, Converse Pro does not just help Alex get through networking events—it helps her redefine how she sees herself. She no longer dreads these opportunities or sees them as places to make an impression. Instead, she embraces them and prefers connecting with others in a deep and meaningful way, finding it more fulfilling for both her personal and professional aspirations—especially knowing that she has the tools to succeed.
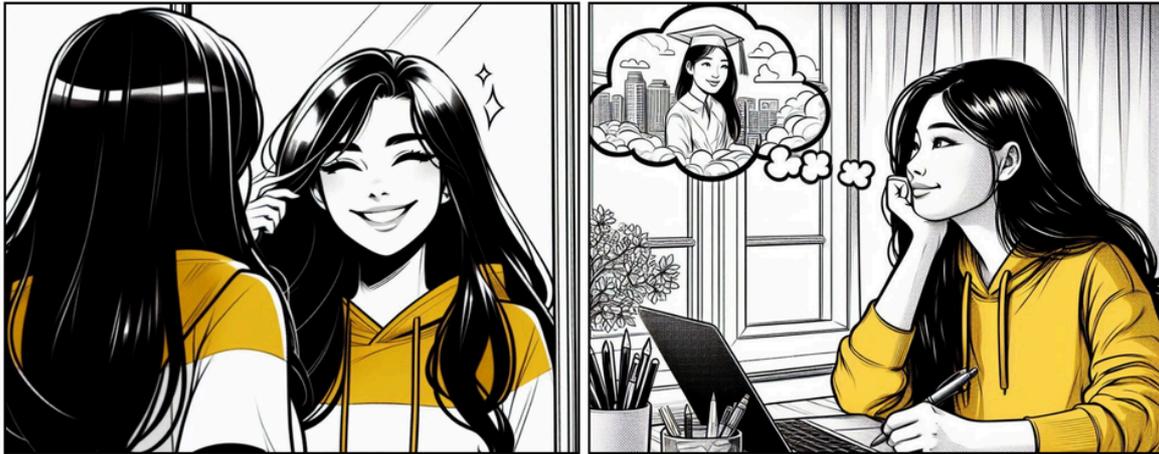
Empowered by Converse Pro, Alex transforms her performance anxiety into confidence. She is kinder to herself, and she feels more in control of her emotions. Her professional future, once clouded by doubts, now seems bright to her.

Figure 26 - Long Term Integration

This user scenario demonstrated how Converse Pro can empower the target group to overcome their performance anxiety in academic and professional settings by providing practical tools and strategies tailored to their needs. The video format of this user scenario can be seen as Appendix G, and provides better clarity about how the consistent use of Converse pro can not only helps the users to manage their immediate challenges with performance anxiety, but also contribute towards long-term personal growth.

7.3 Comparative Analysis

In order to understand how Converse Pro stands out against tools designed to address performance anxiety or related issues, a comparative analysis of six existing tools was conducted as seen in Figure 20 ((also in Appendix I for readability). This benchmarking exercise helped to evaluate Converse Pro's position in relation to other solutions and identify areas of advantage and potential improvement.

CRITERIA	DESCRIPTION	Converse Pro (Final Concept)	Cards Against Anxiety by Pooky Knightsmith	Cards for Anxiety + Motivation + Affirmation by Comfort Cards	Stress Relief Cards by Allura & Arcia	Grow Confidence In Me Cards by Diane Alber	Rethink! Cards by Quokka	Cards for Social Skills + Dilemmas + Situations by Mind Brain Parenting
Target Group	For whom is the tool designed?	Students and young professionals with performance anxiety in academic and professional life	Individuals with anxiety dealing with stresses of daily life	Individuals with anxiety and in need of motivation & affirmation	These who need strategies for stress relief	Young children <10 years old	Individuals older than 21	Children and teens along with their parents
No. of Users	Is the tool used individually or as a group?	Solo use (with online community for discussion)	Solo use	Solo use	Solo use	Solo (with parents or teachers to guide)	Solo use	Both solo and group use
User Experience	What is the evidence of overall satisfaction?	-N.A.-	Highly rated >4.5 out of 5 on multiple websites	Rated >4.9 out of 5 on company website	Insufficient ratings/reviews	Insufficient ratings/reviews	Highly rated >4.5 out of 5 on multiple websites	Rated >4 out of 5 on multiple websites
Purpose	What primary issue is addressed by tool?	To help users tackle performance anxiety, specifically build self-confidence, reframe negative self-talk and manage stress & anxiety	To help users reduce stress and combat anxiety and depression using CBT techniques, breathing practices and real-life scenarios	To reduce stress and promote a positive mindset by combating negative thoughts and feelings	To provide self-care tips and exercises for mindfulness, relaxation and lifestyle changes that encourages healthier habits	To help children grow self-confidence and -belief through positive affirmation and scenarios	To improve self-care routine with tranquility and positive affirmations through developing healthier thought patterns	To teach social skills through scenarios and dilemmas, helps children and teens understand and navigate social situations
Hypervigilance	Does the tool address performance anxiety aspects of hypervigilance?	Is beneficial in reducing cognitive, physical and social aspects of hypervigilance through strategies and exercises for CBT, mindfulness & social skill development	Is beneficial in reducing cognitive and physical aspects of hypervigilance through mindfulness & CBT techniques, but not the social aspects	Is beneficial in reducing physical aspects of hypervigilance through anxiety reduction techniques, but not the cognitive or social aspects	Is beneficial in reducing physical aspects of hypervigilance through stress relief techniques, but not the cognitive or social aspects	Is focused on building internal confidence, but does not target cognitive, physical or social aspects of hypervigilance	Is beneficial in reducing cognitive aspects of hypervigilance by reframing self-talk, but not the physical or social aspects	Is beneficial for reducing the social aspects of hypervigilance by teaching social cues, but not the physical or cognitive aspects
Ease of Use	Is it simple to understand and use?	Each card has a clear and concise strategy or exercise, but broad scope requires time to understand	The scenarios and concise tips are meant to be relatable	Each card has a clear and concise message or exercise that is useful during high stress or emotion too	Straightforward to use, simple language and clear self-care tips	Straightforward to use, clear and simple language	Four, easy-to-understand categories that help reframe with cognitive behavioral techniques	Detailed scenarios to discuss and role-play
Portability	Can it be used in various physical contexts?	Highly portable as it is light and compact to carry in pocket or bag without compromising privacy	Designed for use on-the-go as it discreet for use in public spaces without compromising privacy	Highly portable as it is designed compactly to carry in pocket or bag without compromising privacy	Designed compact and lightweight to carry easily and use in public without compromising privacy	Easily fits in child's hands and ideal for on-the-go use without compromising privacy	Small and compact cards make them easy to use anywhere without compromising privacy	Intended to be portable in a tin can for travel without compromising privacy
Customization	Can the tool be adapted to needs and preferences?	All cards provide space to adapt to needs and preferences + users are encouraged to find specific cards that they can resonate with	Scenarios provide space to adapt to needs and preferences + users are encouraged to find specific cards that they can resonate with	Card chosen is up to user, but limits relevance as content is meant for universal application	Card chosen is up to user, but limits relevance as content is meant for universal application	Card chosen is up to user, but limits relevance as content is meant for universal application	Reflective nature of the cards provide space for user to adapt to their needs and preferences	Scenarios provide space for child to adapt to their needs and preferences
Engagement & Motivation	What encourages users to use it regularly?	The tool can be used in several contexts and has varied content & purpose + online community and tip on card encourages continuous development	The generalized tips for anxiety along with real-life scenarios motivates users to incorporate them into their daily routine as well for various contexts	As they are meant for immediate relief and boost, they can easily be integrated into daily life	The generalized tips for stress relief may motivate users to incorporate them into their daily routine instead of for a context	Cards' bright colors, positivity and simplicity makes it easy for kids to repeat use	The four categories of cards that address different aspects of negative self-talk helps keep users engaged for regular use	Interactive nature of scenarios keeps kids engaged, particularly in group use
Advantages	What makes the tool stand out?	Well-rounded tool for different aspects of performance anxiety to lower triggering hypervigilance + an online community that boosts usability and support	Highly relatable scenarios and easy-to-incorporate tips + scientifically backed by cognitive-behavioral techniques	Quick and direct to use, requires no prior knowledge or preparation, and provides immediate mental reset	Step-by-step structure of each tip makes it easy to understand and use in daily life, thereby improving mental well-being	Perfect for kids starting to explore self-identity & confidence	Scientifically backed by cognitive-behavioral techniques and has four categories to stay engaged	Teaches kids social skills through practical, real-life scenarios
Disadvantages	What is the tool's biggest drawbacks?	Despite limited cards, the broad scope may require investing time to understand and integrate the strategies and exercises	Lacks depth as it is only for immediate, short-term anxiety management instead of long-term strategies for anxiety or confidence	Lacks customization and depth as it is for immediate, short-term relief and boost instead of long-term strategies for anxiety or confidence	Lacks customization and is focused more on overall lifestyle changes than addressing specific issues like anxiety or confidence	Limited scope for children needing complex aid for their confidence & anxiety	Lacks guidance of which category to pick, and so onus is on the user to know what they require and when	May require adult guidance for children to fully understand and apply the scenarios
Link	Link to product	-N.A.-	https://kilkennydesign.com/cards-against-anxiety/	https://comfort.cards/collections/anxiety-pack/products/anxiety-motivation-affirmation-combo	https://toyscentral.uk/products/allura-arcia-50-stress-relief-cards-includes-anxiety-relief-exercises-positive-affirmations-empowering-questions-for-mindfulness-meditation-relaxation	https://www.dianealber.com/products/101-grow-confidencd-in-me-cards-for-kids	https://quokka.com/products/quokka-rethink-120-meditation-cards-affirmation-cards-for-mental-health	https://mindbrainemotion.com/collections/skill-building-cards

Table 3 - Benchmarking

The tools compared were:
- Cards Against Anxiety by Pooky Knightsmith (https://kilkennydesign.com/cards-against-anxiety/)
- Cards for Anxiety + Motivation + Affirmation by Comfort Cards (https://comfort.cards/collections/anxiety-pack/products/anxiety-motivation-affirmation-combo)
- Stress Relief Cards by Allura & Arcia (https://toyscentral.uk/products/allura-arcia-50-stress-relief-cards-includes-anxiety-relief-exercises-positive-affirmations-empowering-questions-for-mindfulness-meditation-relaxation)
- Grow Confidence In Me Cards by Diane Alber (https://www.dianealber.com/products/101-grow-confidencd-in-me-cards-for-kids)
- Rethink! Cards by Quokka (https://quokka.com/products/quokka-rethink-120-meditation-cards-affirmation-cards-for-mental-health)
- Cards for Social Skills + Dilemmas + Situations by Mind Brain Parenting (https://mindbrainemotion.com/collections/skill-building-cards)

The key findings from the benchmarking were:
- Target Group and Purpose: Converse Pro is designed for students and young professionals dealing with performance anxiety, aiming to address cognitive, physical and social aspects of hypervigilance. In contrast, the tools benchmarked target a range of audiences, including general anxiety sufferers, young children and individuals needing motivation or social skills. This broad ·focus highlights Converse Pro's specific orientation towards performance anxiety in academic and professional contexts.

- User Engagement and Motivation: Converse Pro stands out through its comprehensive approach for the cards and the integration of an online community for discussion. This community aspect encourages regular use and ongoing support, setting Converse Pro apart from the other tools.

- ·Customization: Some tools are designed with customization options, but Converse Pro stands out for its ability to adapt every card to individual needs and contexts, to varying degree. This especially provides a significant advantage over those tools with more generalized approaches.

- Advantages and Disadvantages: Converse Pro's strengths lie in its comprehensive coverage of different aspects of performance anxiety and its supportive online community. It provides well-rounded strategies for self-confidence, stress management and negative self-talk. However, its broad scope may require users to invest time in understanding and integrating the diverse strategies provided, which is notably easier for the other tools.

The benchmarking analysis reveals that Converse Pro offers a unique blend of features that cater specifically to the needs of students and young professionals facing performance anxiety. Its combination of detailed strategies, portability and supportive online community helps to position itself as a versatile tool with significant potential in the market. Understanding these strengths and areas for improvement helps to refine Converse Pro's development and marketing strategies, ensuring it meets the needs of its target audience effectively.

Feasibility and Viability of Concept

Here is an assessment plan of whether the Converse Pro concept can be realistically implemented and its potential for long-term success:

Production

The production of Converse Pro involves creating a deck of 40 high-quality cards, each designed with visually engaging elements such as color coding, illustrations and clear typography to enhance the usability. The cards will be printed on durable cardstocks to ensure longevity and provide a tactile user experience. This choice of materials aligns with the current manufacturing capabilities and eco-friendly practices that caters to eco-conscious consumers. The cards will be packaged in a sturdy, eco-friendly box that protects them during transport and storage, and includes user instructions and a brief introduction to Converse Pro. Quality control measures will ensure that the final product meets design and durability standards, with initial production costs being manageable and decreasing with higher volumes.

Distribution
Converse Pro will be distributed through various channels:

- ·Partnerships: Initial distribution will be through collaborations with educational institutions, Human Resource departments and mental health professionals to ensure the tool reaches a broad audience.
- ·Direct Sales: They will also be available one online marketplaces like Amazon (https://www.amazon.nl/) and Bol (https://www.bol.com/nl/nl/), ensuring accessibility once partnerships lead to word-of-mouth marketing.
- ·Retail: Once established, they will also be placed in bookstores, specialty stores and health-related outlets to further enhance visibility and accessibility.

Efficient warehousing and shipping solutions, including potential partnerships with fulfillment centers, will support timely delivery and inventory management. Pricing will be set to be affordable for students and young professionals, with potential tiered pricing for bulk purchases by institutions or companies.

Technical Infrastructure of Online Community
The development of the online community requires a resilient technical infrastructure, including secure user authentication and data protection. A trained moderation team will ensure a supportive online environment and effective user interactions. Integrating access codes with the physical deck must be secure to prevent misuse. Despite the ongoing costs for moderation and website upkeep, the online community enhances the tool's value by providing user feedback and support, which is important for continuous improvement and the development of future versions of the tool.

Market Testing
Initially, Converse Pro will be introduced in academic settings, such as universities, and professional environments through social skills training workshops and HR departments. Feedback will be collected from the users to refine the tool and address any additional needs. Based on the feedback, adaptations for different age groups, social contexts and professional settings will be explored. This could include versions tailored for younger students, different cultural contexts, specific industries or other aspects of hypervigilance. Insights from the market testing as well as the online community will guide the enhancement of the tool's content, design and effectiveness. Th development of complementary resources or digital versions will be considered based on the user preferences and technological capabilities.

Long-Term Strategy

To establish Converse Pro as a leading tool in personal development and mental health, strategic marketing and partnerships with educational institutions, corporations and mental health organizations will be essential. The online community will continue to play a key role in supporting the users and gathering feedback for ongoing improvement. Insights from market testing will ensure the tool remains relevant and impactful, and also guide future enhancements and expansions.

To conclude, the feasibility and viability of Converse Pro is supported by its production and distribution strategies, the value added by its online community, and a solid plan for market testing and long-term growth. By continuously adapting to user needs and feedback, Converse Pro has the potential to become a valuable resource for managing performance anxiety, building self-confidence and combating negative self-talk.

This chapter provided an in-depth exploration of the final concept 'Converse Pro'. The next chapter will delve into a broader discussion of the project's implications.

DISCUSSION

This chapter will examine the project's limitations and offer recommendations for further development, and also reflect on the overall process and personal insights gained.

8.1 Limitations

The project encountered several limitations that may have affected the development and evaluation of the Converse Pro concept:

1. Limited Co-Creation with Target Audience: The co-creation process did not include direct participation from the exact target audience of bachelors students. Instead, sessions involved Master students, especially other designers. This limitation may have impacted the relevance of the insights gathered, as the feedback was not fully representative of the end users' needs and experiences.

2. Demographic Diversity in Co-Creation: The majority of co-creation participants were Asian women, with a notable absence of Dutch individuals. This lack of demographic diversity may have influenced the development process and potentially limited the applicability of the concept to the broader target audience.

3. Limited Number of Co-Creation Sessions: Only six co-creation sessions were conducted. This small sample size and limited variety of perspectives might have constrained the comprehensiveness of the feedback and the depth of insights integrated into the final concept.

4. Constraints in Direct User Testing: Due to time and resource limitations, direct testing of the Converse Pro concept with the target audience was not feasible. Instead, feasibility and viability were assessed through theoretical analysis and benchmarking against existing tools. This indirect approach may have limited the ability to gather specific user feedback and make real-time adjustments.

5. Prototype Development Challenges: The project's intense research phase restricted the opportunity for developing and iterating on a physical prototype. Consequently, the final concept was not physically tested, which may affect the product's usability and effectiveness.

6. Resource Constraints: Overall limitations in time and funding impacted the depth of the research and development phases. These constraints affected the ability to conduct extensive user testing, detailed feasibility studies, and comprehensive prototype evaluations.

7. Limited Stakeholder Interviews: One significant limitation of this project is the absence of interviews with stakeholders such as mental health professionals and organizations specializing in childhood trauma and emotional dysregulation. Engaging with these experts could have provided valuable insights, validated the approach, and enhanced the relevance and effectiveness of the final concept.

8.2 Recommendations

Here are some recommendations based on the limitations:

1. Expand Co-Creation with Target Audience: To ensure the Converse Pro concept fully addresses the needs of the target audience, future co-creation sessions should include direct participation from a representative sample of bachelor's students. Engaging this specific group will provide more relevant feedback and insights, helping to tailor the tool more effectively to its intended users.

2. Increase Demographic Diversity: To enhance the applicability of the Converse Pro concept, future co-creation efforts should strive for greater demographic diversity. This includes including participants from various cultural backgrounds and regions, specifically Dutch individuals, to ensure the concept resonates with a broader audience and meets diverse needs.

3. Conduct Additional Co-Creation Sessions: Increasing the number of co-creation sessions can provide a wider range of perspectives and more comprehensive feedback. This will help to refine the concept further and ensure it addresses a broader spectrum of user experiences and needs.

4. Implement Direct User Testing: Allocate resources for direct user testing with the target audience to gather specific, actionable feedback. This will enable real-time adjustments and refinements based on actual user experiences, improving the overall effectiveness and relevance of the tool.

5. Develop and Iterate Prototypes: Prioritize the development of physical prototypes and conduct iterative testing to assess usability and effectiveness. This hands-on approach will help identify practical challenges and enhance the final product's design and functionality.

6. Engage with Mental Health Professionals: Conduct interviews and consultations with mental health professionals and organizations specializing in childhood trauma and emotional dysregulation. Their expertise can provide valuable insights, validate the approach, and enhance the relevance and effectiveness of the Converse Pro concept.

By addressing these recommendations, future iterations of Converse Pro can be more effectively tailored to its target audience, ensuring a more impactful and user-centered solution.

8.3 Conclusion

Through a thorough examination of existing literature and the insights gained from co-creation sessions, it is evident that the repercussions of early traumatic experiences extend far into adulthood, affecting emotional expression, interpersonal relationships, and overall mental health.

The research phases reveals that young adults with a history of childhood trauma often struggle with hypervigilance, emotional dysregulation and difficulties in forming meaningful connections with others. These challenges highlights the need for targeted interventions that address both the emotional and psychological aspects of trauma recovery.

Converse Pro provides a structured approach to help young adults better understand and manage their emotions in academic and professional settings to combat performance anxiety, as it could trigger hypervigilance. The final concept aims to empower individuals to regain control over their emotional lives, building resilience and promoting healthier coping mechanisms.

8.4 Personal Reflection

Reflecting on this project, I am pleased with the progress I have made toward my personal ambitions. My initial focus on quantitative research was complemented by a deeper dive into qualitative methodologies through engaging co-creation sessions. Despite my initial hesitations and anxieties, these sessions enriched the project and broadened my skill set in ways I hadn't anticipated. And they also proved to be fun, as promised by my supervisors.

Balancing SPD and DFI approaches posed a challenge, but with guidance from my supervisors, I feel I have successfully integrated my SPD skills into a DFI-focused project, creating a well-rounded approach.

In terms of gaining knowledge about trauma and emotional coping strategies, the project provided valuable insights that I can apply both professionally and personally. I have also made significant strides in improving my presentation and communication skills, effectively conveying complex ideas. Time management remains an area for ongoing development, but I have made progress in handling various aspects of the project.

Overall, I believe that this experience has been instrumental in advancing my skills and personal growth, setting a solid foundation for future endeavors. I am looking forward to exploring this project further in the future.

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Appendix A

Initial Brainstorming based on the Insights from the Literature Study

I find it difficult to connect with people → Lack of self-awareness and authentic expression → I want to empower young adults to understand, articulate and navigate their emotions for healthier interactions and relationships

I can't stand by/ trust my decisions → I am not good enough to do what is expected of me (I feel like a loser) → Lack of self-confidence and value → I want to help young adults recognize their worth and believe in their ability to achieve their goals

I seek extreme control / I have no control at all → Feel out of control with own life → I want to create a safe space for young adults to master their emotional wellbeing to regain control over their lives

I cannot live or enjoy the present positive moment → Don't know how to positively engage in real-time → I want to cultivate mindfulness in young adults to help them feel grounded, connected and happy in the present moment

Possible gaps(?) to focus on:

- Explicit tool/product that directly aids ER
- Non-therapeutical approaches
- Long-term instead of symptom management
- Accessibility and affordability
- Tech integration
- Personalization
- Cultural sensitivity

1. Book that guides daily interactions (like a map) → can also be an app

5. a 365 day tool to check in on your own emotional well-being → has prompts, scenarios, reflection, etc like these

2. Tinder for emotions? → match with strangers who can be a role model → or a buddy to learn together

3. Random anonymous chat a day → talk to someone random for 15 minutes a day → share about intense moments of day without judgement → loneliness → gain perspective and reflection (maybe reframe own thoughts)

with an elderly (build a strong relationship with them) → 11. Spend time with them to build relationship, learn from them, address loneliness

Intergenerational senior residence in the Netherlands

6. or as a tool for reflection on positive experiences every day → based on "Het Witte Boekje" for gratitude → different versions; 3 things thankful for every day, reflect on impact over time, tips, quotes, prompts → learn to appreciate small things in your life → 7. can also be an app, where suggestions of books, videos, podcasts and songs (inspiration)

13. Workshop to improve ER → learn about emotions + healthy strategies → helps connect with other (not alone in this) → can also be through a game

Home - Emotion Typology

tool to improve relationship with parents → increase closeness + calmly engage and express → 12. "Meet me halfway" game

14. "The Cards We are Dealt" → recollect past emotional experiences + deal with hypothetical situations → reflect together and later self + gain perspectives → honest conversation with strangers/loved ones

nature walk, use of aromas, while watching sunset and with a warm drink, etc → connect with self and others + reflect together on certain emotional aspects of day without judgement or distractions → 16. Guided walks with loved one for reflection

15. App that gives a daily prompt/scenario of this → encourages reflecting on emotions and thoughts in that moment without judgement → create a safe space to reflect on uncomfortable emotions in a time/manner of choosing → at the end, write short reflection message to self about main lesson you want to remember from this → can read them all over time (a collection)

18. Something like a fidget spinner

4. "Why" tool → ask why until you identify root (challenge intrinsic beliefs) → talk about specific situations that made you feel a particular way, for instance → with another person or self? → challenges why you think/feel about someone/something; reframed a particular way

share about intense moments of day without judgement → loneliness → gain perspective and reflection (maybe reframe own thoughts)

21. Mini-you → take care of an avatar → you learn to love the child in you? → be your own role-model?

Finch: Self Care Pet

19. Watch a tree/plant grow on your phone as you keep adding to it → add small things you achieve every day and things you're thankful for → you start with low, but as plant grows, you'll be encouraged to think deeper and appreciate + celebrate more → symbolizes own growth (the more you add, the more it grows) → gamification elements like achieving milestones to decorate pot of plant, etc → increases sense of accomplishment and gratitude

Celebrate own accomplishments/ life

20. Can also attribute to a real-life plant → plant keeps growing, and you attach accomplishments to it → Use of elements like mason jar with small wins + Daily tasks/planner → visual representation of your daily achievements and things you're thankful for

8. Podcast for emotions → tools and tips to identify and reflect on maladaptive strategies → aren't the only one to feel/be so → testimonials

9. Quiz/ Questionnaire to identify own → suggest healthier alternatives → baby steps to reduce unhealthy coping

10. Like the digital well-being app on phone → record, reflect, identify triggers/patterns, reframe

24. VR scenarios that mirrors real-life challenges → player can practice healthy coping and problem solving in a safe and controlled environment → use biofeedback to help deeply understand responses and emotional state? → improve self-awareness + develop healthy coping

22. Ripple of kindness/ emotions → Cards with simple prompts, pick and do one daily/weekly; compliment someone, etc - more emotion focused → pass it to someone else, encourage them to do it → record, reflect, share → Be more present in the moment to identify, encourage positive emotions, connect with others, feel worthy/good about self → maybe within a university to be able to track and share more effectively?

23. Kindness/ Emotions tokens → Personalized token, where you recognize something emotionally, physically; positive/good deed you did → once done, pass it along to someone recognized previously or → website or social media page where people can report acts of kindness/emotions and tag along a token

Using the concepts of kind act a day, pay it forward

25. Day collage → every day, make a collage of your day → mix of images, textures, sounds and smells → after that, short reflection about significance of each sensory element chosen → way to find meaning, beauty and inspiration in ordinary moments of each day → express non-verbally, in a creative and appealing way - so it is easier → increases satisfaction, healthy expression and self reflection

11. Spend time with them to build relationship, learn from them, address loneliness

Intergenerational senior residence in the Netherlands

increase closeness + calmly engage and express → 12. "Meet me halfway" game

nature walk, use of aromas, while watching sunset and with a warm drink, etc → connect with self and others + reflect together on certain emotional aspects of day without judgement or distractions → 16. Guided walks with loved one for reflection → Engage with 2 or more senses to practice feeling grounded and connected to the present moment → 17. Connect with nature → identify visual, auditory, tactile and olfactory nature inspired things → look at seashells, waterfall sound, feel of pebbles, smell of lavender → sense of peace, calm, connection → a kit? → trial and error to identify → incorporate into daily life → so, no matter what, can ground self into the moment

18. Something like a fidget spinner → helps connect you to the current moment (calms anxiety of moment) → sensory stimulation → like a cube, with different sensory things on each side of cube → hold and use with hands while conversing - helps focus

Top section

I want to cultivate **mindfulness** in young adults to help them feel **grounded, connected and happy** in the present moment

I want to create a **safe space** for young adults to master their emotional wellbeing and to **(re)gain control** over their lives

I want to help young adults **recognize their worth** and **believe in their ability** to achieve their goals

I want to empower young adults to **understand, articulate and navigate their emotions** for **healthier** interactions and relationships

I want to **mentally equip** young adults to feel **grounded, connected and happy** in the present moment by cultivating **mindfulness** in them

I want to **empower** young adults to **(re)gain control** over their lives by **mastering their emotions** (and **embracing their worth and abilities**)

Mindfulness branch
- sculpting a statue
- rock-climbing
- warm bubble bath with flowers, candles and a good book

needs certain tools | needs certain environment | can be fun & relaxing vs taxing and stressful | can be personalised to needs

takes time, patience and focus | engages more than one sense | the more you do it, the more you get/learn from it (get better at it) | once done, gives sense of achievement/ satisfaction

Empower branch
- learning to drive a car
- taming a wild horse
- organising a messy closet
- assembling IKEA furniture

believe in own potential/ capability to succeed | requires understanding, skill development, and perseverance | can do in own pace (pause and go back)

stay calm despite stress/ challenges (trust the process) | order to chaos (control) | quick and effective decision-making

you assign worth/meaning to it (internal checklist) | sense of satisfaction/ accomplishment when done | visualization of outcome makes progress made hard to miss/ seeing/ acknowledging

caterpillar weaving a cocoon | cooking a meal together with a loved one | a warm hug/blanket

Social media comparison | *Stressful/ toxic environment* | *Cultural or societal stigma or expectations* | *Lack of support system*

Self-care subscription

Beauty Mystery Box save up to 80%

monthly mystery skincare box → Self-care subscription box service

selection of items every month to support your emotional well-being | like: art therapy tools, scented items...

customize to needs and preferences | like specific type of mindfulness tool / preferences for certain scents or activities | like fill questionnaire and get sorted into one of 8 types of people (like getting sorted in Hogwarts)

platform/forum where one can share experiences, exchange tips and support each other | engage with people in the same boat as you

Educational info | Insights into expression of emotions, benefits of mindfulness practice, tips to incorporate into daily life

Some kind of tracker to see own progress | maybe through setting of monthly goals?

University membership

membership for physical health → University membership for mental well-being → one activity every week/month

combo of art, dance or movement, meditation or mindfulness, photography, nature walks, hiking, book club, group therapy

or can be just a well-being board/card game played together

focus on building emotional resilience, relive stress, safe space to emote, develop healthy coping/expression

Bottom section

Cards Against Humanity | Truth or Dare

Board games for sharing and connecting while being fun → **"The cards we are dealt"**

safe space to share emotions, connect with self and others, learn healthy strategy/processing | a gameboard, challenge and emotion cards, action cards, dice, token | group of about 5 players, with 5 action cards each

first player rolls dice and moves token to blue or red grid on board | player responds to situation with one of 5 action cards they have been dealt (rice of rue and ve) | action cards are just cues or catalysts and is up to the player how they utilize it | other players also respond with one action card each to provide their perspective | collectively reflect and refill their action card from the pile | game continues until all players have reach middle of board | when the last player places their token, a short musical note is triggered | this way it is not about who reaches first, but about taking the journey together

after the game, every person is encouraged to reflect individually through a reflection exercise

elements of group therapy → bring out raw emotions in a safe space → can use sensory elements to enhance this effect

get one of 8 curated kits every month

engage with people in the same boat as you

maybe through setting of monthly goals?

common elements:

deep introspection, emotional release, connect with inner selves, mutual support with peers | utilize Premo here as a common element? | (pictorial emotion scale to communicate emotions)

or a reflection exercise at the start and end of activity | check-in on emotional state | can use some kind of a question or prompt | a sharing circle during last 5 minutes

or journal for every member to emotionally reflect after each activity

Regret | *Self-esteem*

Make Amends | *Make it Better* | *Make it Worse*

Appendix B

Template Used for Pilot Testing the Co-creation Sessions

Step 1: Mapping the Stages of a Specific Experience

(Short description of experience...)

	Preparation (Choose context, set clear goals and form action plan)	Anticipation (Excitement for interaction and picture desired outcome)	Experience (Heart of journey: active immersion and engagement in interaction)	Reflection (Recollect memories of experience, introspect and analyse)	Integration (Use new knowledge and perspective to challenge/reframe beliefs, values & behaviors)	Reoccurence (Seek similar future experiences based on preferences, needs, goals and self-perception)
Description (what, where, when, etc)						
People Involved						
Emotions and Intensity of Emotions						
Expectations of stage (what you thought would happen)						
Reality of stage (what actually happened)						
What may have caused negative expectation and/or reality						
Additional comments, if any						

Emotions scale: 10 / 5 / 0

Step 2: Mapping Stage (....)

(Why this stage...)

1. What did you see? (incl. people, surroundings, etc)
3. What did you say and do?
4. What did you think and feel?
2. What did you hear? (incl. people, surroundings, etc)

Highlights   Lowlights
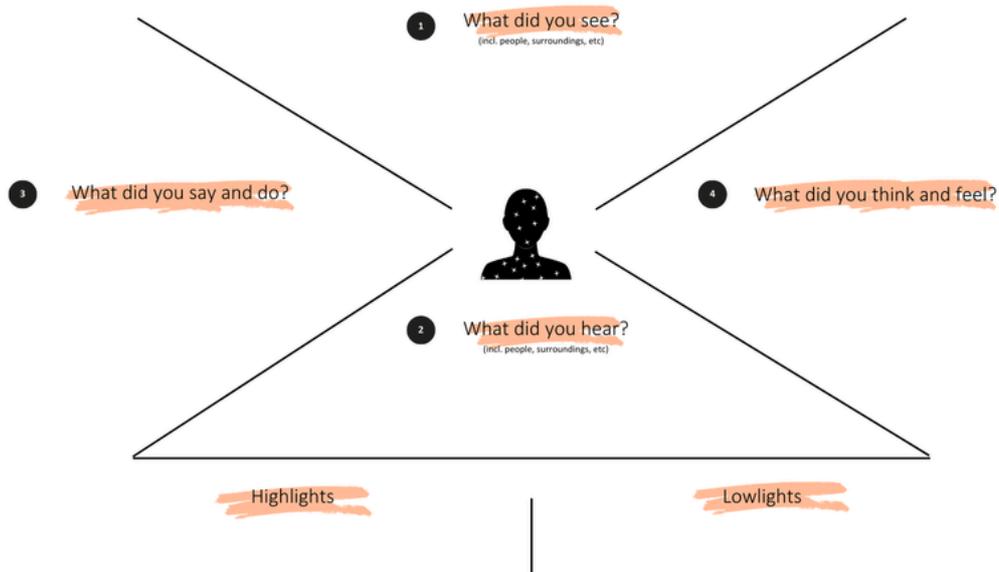
Appendix C
Guide Used for the Co-creation Sessions

Introduction:
Before we begin, I would like to ask if is okay to audio record our session? This way, I can focus more on our conversation. The recording will be deleted as soon as I have all the relevant information, and any personal information will not be used.
Thank you!
[Turn on recording]

Thanks for being here today! I'm Raga, and I would like to start by giving you some information about the purpose of this workshop.
Everyday social interactions can sometimes be tough for everyone. Research shows that this is especially the case for young adults who have faced difficult experiences in their childhood. These past experiences can make it harder to feel relaxed and connected in situations that are supposed to be enjoyable and fulfilling. This could be due to increased levels of anxiety, negative self-image, trust issues, and so on. However, research also shows that these social experiences are very important to help us understand ourselves better, to teach us to cope with stressful situations, and also to build resilience, self-esteem, confidence, and a support system.
Now, I want you to know that you're in complete control. If you feel uncomfortable or want to stop at any point, just let me know. There is no judgment or expectations. And also feel free to tell me to slow down – I have a tendency to talk way too fast.
So, today, we are going to delve into one specific, recent, social experience of yours. The goal is to see how we can enhance similar, future interactions to be more fulfilling and meaningful for you. I will tell you more about this later.

Introductory Questions:
First, I'd like to ask you a few questions to get to know you:
1.   Can you tell me a bit about yourself?
a.   Where are you from?
b.   What do you study?
c.What do you like to do in your free time?
2.   Would you consider yourself an introvert or an extrovert?
3.   How would you describe your current social life?
a.   Both academic and personal.
b.   Was it always this way?
4.   Have you ever done a workshop like this before?
a.   Why this workshop?
Great! Thanks for sharing.

Memory Selection:
I'd like you to use the pen and paper in front of you and think about any significant or recent interaction you've had with people at the University or outside - whether personal or academic. This interaction should have been something you expected to be fun or happy or fulfilling, but left you feeling unhappy, angry, disappointed or something similar. I'm also going to give you a list of possible situations, but of course you can think of something

else.
[Hand over list of possible experiences]
Take your time and write down any scenarios that come to your mind. You can stop when you find one that you would like to talk about.
Can you briefly explain the experience?
Perfect. To start off, I'd like you to take a moment to remember everything about it—the before, during, and after. You can write about it or just close your eyes and picture it. Think about the good, the bad, and everything in between. Let me know when you can fully picture it.

Mapping:
Now, we will be mapping this experience of yours. I want to reiterate that you can skip some parts and take a break whenever you want.
[Start with 'during'. Then 'before' and 'after'.
Hand over emotions list]

[If participant is overwhelmed/triggered:
I can see that this is really difficult for you. Would you like to take a moment? We can pause for a bit. Would you like to continue, or would you prefer to stop for today? Would you like some water?Would you like to talk about something else for a bit?]

[Once filled – use stickers and address the main:
- Changes to or low emotions
- Expectations vs reality
- Hurdles and challenges
- What can be improved?
- How can it be improved?
Mentally check if all 6 stages are covered]

Conclusion:
With that, we have reached the end of this workshop. I'm going to stop the recording now. Thank you so much for your participation. It was really fun exploring this with you, and I appreciate the ease with which you shared. Is there something else you'd like to share or suggest?
Once again, thank you so much. Would it be okay if I contacted you again to maybe test the solution? Would it be something you'd be interested in?

Appendix D

First poster used to try recruiting bachelor students for the co-creation sessions

Join our workshop to enhance your everyday interactions.

Are you a Bachelor's student who sometimes finds interacting with people challenging or less fulfilling than you would like? Do you feel like the emotionally overwhelming experiences in your childhood are holding you back now from fully enjoying yourself in social settings or happy moments? Would you like to help create better strategies for making these interactions more enjoyable and meaningful?

Join this private, one-hour* workshop where, together, we will explore your motivations, perceptions and emotions in such interactions, and use them to make similar, future activities more positive and fulfilling for you.

Your unique experiences can make a difference!

*Where: IDE/IO Building
When: Flexible dates and timings in May & June 2024

Snacks will be provided!

Scan to sign up
or
Contact Raga by:
WhatsApp +31 682773051
Mail: rjawakaren@tudelft.nl

Appendix E

List of potential Social Celebration & Events and Academic Interactions for co-creation sessions

SOME EXAMPLES OF GROUP/SOCIAL SITUATIONS

Academic Interactions:

- Academic Panels and Debates
- Competitions like Hackathons, TUD Impact Contest, etc.
- Faculty Events like Pizza Nights, Karaoke, Potlucks, etc.
- Group Projects
- In the Classroom
- In the Coffee Shop
- In the Library
- Internship and Career Fairs
- Lab Work
- Lunch in University Canteen with Friend(s)/Classmates
- Lunch Workshops
- Mentorship with Professor(s)
- Networking Events
- Seminars and Conferences
- Study Associations like ID, CH, ETV, TG, etc.
- Study Session/Group
- Study Tour like Flight Case, Cases on Tour, etc.
- With Staff like Academic Counsellors, etc.

Social Celebration/Events:

- Birthday Dinner
- Celebrating New Job, Wedding Anniversary, etc.
- Day/Road Trips
- Family Events
- Food & Drink Tasting like Wine Tasting, Food Festival, etc.
- Gala
- Game/Movie Nights
- Group Outdoor Activities like Camping, Hiking, Rafting ,etc.
- House Party
- Housewarming
- Instemming
- Music Festivals
- Picnic
- Sports Events
- Theme Party like Halloween, Sinterklaas, Koningsdag, etc.
- Volunteering/Community Service

and more...

Appendix F

Emotion sheet used for co-creation sessions

Appendix G

Individual participant outcome from co-creation sessions

Mapping the Stages of a Group/Social Experience

A group project meeting. We usually meet everyone online, but this was the first in-person meeting. Sort of a big deal. I had not met most of them in-person before. Like all of our discussions were on either on WhatsApp or Zoom.

	Before	During	After
Time (When and how long?)	I knew a week in advance - so I started to mentally prepare myself about a day before. Happened a couple of weeks ago	I joined late at 1:45 (15 minutes late - ADHD, punctuality issues). 3 hours long and boring	I replayed it daily for a week until I had somethin to replay. I still think about this, and I still feel I am crappy
People (Who was involved/there?)	Did not really discuss with anyone about attending. On the day of, I spoke to family and friends about other things	There were 5 other classmates. I don't think anybody knew anyone well. But I feel like others were closer with each other than with me	I am talking about it now. I did not even discuss it with my roommates, who I am close to
Environment (Online/offline, one/few/much)	I had spent all day in my room or in the shower. Until I had to leave. I was just doing non-project related stuff	A quiet Friday evening. It was eerily quiet except our own voices. We had this large screen that we were using to present to each other	It's like a song in your head on repeat. I remember during random moments like grocery shopping or other social situations. It just hits me like a wave
Emotions (Different emotions and intensity)	10 / 5 Stressed Focussed / Nervous / 0 / Brave — Afraid Overwhelmed Concerned — Disappointed (12) Overwhelmed / Uncomfortable Shy / Appreciated — Annoyed Tired — Guilty / Lonely — Embarrassed / Relieved		
Thoughts (What did you think and feel)	Feeling stress helps me to mentally prepare. So I started planning ahead for the meeting - about all possible suggestions and ideas I could give, talk about vacation plans, and potential non-assignment dialogues we could have. I started mentally hyping myself up in the train. But then I got mad and upset at myself because my decision paralysis made me late again. I was asking myself "Why do you do this every time? Why can't you ever do anything right?" I have only me to blame	Initially, I did not talk or contribute much. I always feel overwhelmed in social settings. People were only making small talk when I reached and I stayed quiet because I feel like they would eat me. I felt good when I shared project ideas, but also felt like crap when I kept some good ideas to myself. Then when they postponed the movie plan to next week, I felt really guilty as one person would be travelling abroad. I ruined it for the other person	It barely ended before I started deconstructing all the things I did wrong, which is also a normal feeling for me after every social interaction. I kept feeling more and more guilty as my brain was amplifying everything. It was very confrontational in my head. But I was also kind of glad it was over, so I could cringe at my behaviour without other judgmental eyes now
Actions (What did you say and do?)	All day, I was speaking to my family and friends about random things, which also made me late for the group meeting. I also took a long shower where I was imagining all the possible ways it would go wrong. I listened to some loud music in the train - it calms me	I feel like the vibe in the beginning was great. People were talking about some festival, travel plans, other assignments. And then we brainstormed for the project. Then there was an impromptu movie plan for the same night, but I declined saying I had other work. But I was not mentally ready due to social anxiety and also I didn't really know anyone there. But then somehow they postponed it to next week, which sucked because one of the girls would be travelling	After the meeting, I stayed at the University, working on a different project by myself in the same room as before. So, the ghosts of the conversation were still there. I have so far not discussed this with anybody. I don't usually write these kinds of things. Writing is only when my anxiety is high or I'm really happy and want to remember
Highlights (What was/felt good? Gains)	Before: I enjoyed the train ride. I did not need to put on a facade, which I do with friends too. The loud train and music helped me gather my thoughts. During: I had a proud moment where I shared this idea that everyone loved, and so I felt people value me . After: I was just glad it was over		
Lowlights (Hurdles, pain points, to improve)	Most of it was bad. But my lowest point was knowing that I hurt that one girl because of postponing the movie plan. I keep telling myself "I am the worst". Also, when I was unable to vocalize all of my ideas that I wanted to, this voice in my head asked me to "Just shut up"		

Mapping the Stages of a Group/Social Experience

Yesterday, I went to the company I am interning for my graduation project to present the final result. After the presentations which went well I think, we had a networking party with drinks and food in the cafeteria of the company along with other peers who interned there too.

	Before	During	After
Time (When and how long?)	Was informed a month ago	A monday evening. For about two hours in the cafeteria of the company.	Left the first chance I got. It's been less than a day since.
People (Who was involved/there?)	Did not really discuss with anyone. But it was a group email.	Other interns like me. But also a few supervisors and employees of the company. Had a friend.	I've spoken in length with my friend who was there too.
Environment (Online/offline, one/few/much)	Was informed via an email.	Completely in-person. There were drinks, but some basic snacks which was disappointing	We discussed on the way back home while biking side by side.
Emotions (Different emotions and intensity)	10 / Motivated / 5 Eager / Nervous / 0 — Disappointed / Bored Uncomfortable / Engaged — Relieved / Disappointed Discouraged		
Thoughts (What did you think and feel)	My first thought was that this would be fun. Everything I was doing, was for this particular moment. So I felt that this would be where I would feel happy, satisfied and valued. I was not too excited though, because I usually try to not get my hopes up. But they did say it would be like a party, so I expected it to be nice.	The way the photo was handled felt so fake and I was immediately disappointed by that along with their attempt at snacks. It just felt like they did not really value us and hosted this networking for the sake of it. I felt like they were not really interested in any of us. It did not feel like a party at all. I felt like I had no idea how to start a conversation with anyone.	I was just relieved that it was all done. And since my friend felt the same way I did, i was not disappointed in the sense it was nice to feel this way with someone else. At the same time, I still do feel like I have not been valued by them.
Actions (What did you say and do?)	I did not really do or discuss about the party until I finished the presentations. That was my focus, obviously.	It started with taking a group photo together where they asked us to smile and once the photo was taken, everyone just went their separate ways, and I did not see most of them at the cafeteria after that. There were some people, but I didn't know anyone much and I did not feel confident just walking up to them. I did find offering chips to people helped, so that is what I used as an in mostly. I was just drinking, eating and taking photos for others. I did get to interact with a supervisor that I really admire.	Yeah, just discussed with that one friend back home. I haven't had the time to talk about this with anyone else yet. I am still exhausted from it.
Highlights (What was/felt good? Gains)	It was nice to hang out with my friend and some acquaintances - we also played ping pong. And they gave us a nice gift too. I am really glad I had someone I knew there as that gave some degree of comfort and confidence there - or else I wouldn't have felt good at all considering how it turned out. My comfort level kind of defines how confident I feel, which also kind of results in how much I engage in conversations.		
Lowlights (Hurdles, pain points, to improve)	I felt like I should have talked to more people. Networking is very important for me right now and I felt like despite my interest, I did not utilize the opportunity. Especially with the supervisor I look up to. Also, I really had difficulty starting a conversation - it is already difficult for me as I have to translate everything in my head. So finding the right words for the conversation was something I actually struggle with generally. Even finding the right time to say something - like when is it interrupting vs conversational. All these thoughts were flying in my head.		

Mapping the Stages of a Group/Social Experience

"An informal networking event that I attended a couple of months ago. It was supposed to be talking about working in the Netherlands for people from my country, so I expected to gain a lot of clarity in regards to the job market, work culture, work-life balance, etc.

	Before	During	After
Time (When and how long?)	The plan was continuously made for 2 months	On a Sunday afternoon in April. It was supposed to start at 12:30 and be for a couple of hours. But started at 13:00 and I was there till 15:30	When left, people were still hanging out. I don't know for how long.
People (Who was involved/there?)	Some friends, acquaintances and seniors who are now working in the Netherlands	About 20 people in total. 3 friends, 1 acquaintance, rest were all new to me	I did not really discuss it with anyone.
Environment (Online/offline, see/hear/touch)	All of the planning was done through a group chat on WhatsApp.	Sunny and pleasant weather. We met at this huge table at a deck near the water.	This is the first time I am actually talking about this with anyone
Emotions (Different emotions and intensity)	Excited (top), Scared (bottom)	Hangry (10), Disappointed, Joy, Annoyed, Okay	Disappointed, Overwhelmed, Relieved, Tired, Worried
Thoughts (What did you think and feel?)	I thought this would be a great networking opportunity to know what it's like working in the Netherlands directly from people who are from my country who are working here. I had this image in my head that we would all stand together and talk about all the things we want clarified. I expected to gain clarity. But mainly validation - validation from someone to say that I will get a job, that xyz is hard but if you do abc you will find a job. On the day of, I did not want to go - I as I felt it would be boring and not useful for me.	They were all surface level conversations but I kept hoping they would at some point be deep. But no. I was wondering why they called this a networking event - it felt like a picnic to be there. I felt left out and I did not want to be there. I feel bored if people don't talk about something I want or when someone goes on about stuff I have no interest in or don't know about, which is what happened. I felt they were all being rude. I felt out of sync with others. I kept thinking this was not what I want - I don't know how to put it into words.	I really want to know why I was so disappointed by this - that's why I am talking about this here. I want to understand it because it still bothers me. In retrospect now, I can understand their side too. It was a sunday afternoon - why would they want to talk about work? They wanted a relaxing conversation, my expectations were different - they just want to relax, have fun and not talk about work. Maybe the setting could have changed how it went - the picnic table vibe did not help. I was also a bit prejudiced and assumed that the seniors wanted to talk only with those they knew
Actions (What did you say and do?)	I was not in charge. I am not used to making plans so well in advance - it is not in our culture to. So that was weird for me already. But I am the one who set the location, time and date. My friend was the mastermind behind the whole plan though. I looked up people who will be attending on LinkedIn. I knew we had to take our own food and god, but sometimes I was not fully paying attention to the chat. On the day of, I did not want to go - but my friend called me up and asked me to come. So I packed my lunch on a Sunday afternoon - can you imagine?!	Everyone was half an hour late, and I was the only one there, which was inconsiderate. I was very hungry and angry. There was way too much small talk. The small talk became the big talk. Like, people who were here for years kept cribbing about the weather. I did not initiate deeper conversations though as I did not know when to butt in, especially because there were too many people. I am generally clueless about social cues like these, so I find it easier to just accept it. Also, it was a potluck, and somehow I missed that - so while I just took some basic lunch for myself, people brought chips and beers. Someone even got more beer at some point as they were bored - which gave it a poor vibe for me because I do not drink. None of the topics I had in mind were spoken about. There were some people new to the country, so they had questions for me - I was not prepared, so this annoyed me.	I only talked about this once with another friend who was supposed to attend but didn't. All I told him was that it did not help me at all. He is also friends with the organizer, and I did not want to hurt her feelings. So I did not tell the guy directly that it was disappointing.
Highlights (What was/felt good? Gain)	I would say, I got to meet some good seniors, so that was good. And some seniors could not come, but the next time I met them, them not showing up was a good conversation starter for me - which is something I struggle with. Like my idea of fun is different from most people here who have a lot of hobbies while I don't - which is totally okay as I don't care what others think, but it also means I don't have much in common with others to talk about.		
Lowlights (Hurdles, pain points, to improve)	I hated that I started it off hangry as people were late to the lunch - my time was not valued. I don't enjoy small talking at all - even though I do know how to do it. There was a mismatch of ambitions, goals and expectations of everyone else vs me - so this made me feel bitchy. I don't like some social norms - like drinking on a afternoon, which they did - so was not good for me. Overall, I felt I was out of sync with the others.		

Mapping the Stages of a Group/Social Experience

Short description of experience ...
First day of University for me - I had skipped the induction. Most people seemed to already know each other - I was not too worried though. Maybe I should have been. I tried to join a group of people after the introductory class. But I felt left out, like the odd one out.

	Before	During	After
Time (When and how long?)	No preparation. Immediately after one of the introductory classes/workshop	After one of the introductory class/workshop, everyone was grabbing something to eat	I refused to (voluntarily) think about it for a month - although I kept getting flashes of it. It took me a month, to sit and reflect on it - but it still hurts
People (Who was involved/there?)	Was unplanned. Nobody invited me - I just went over to them	About 15-20 peers. Strangers to me. Mixed ethnicity of people. And then there was me	It's been a few months, but I have not spoken about this with anyone. It is painful to
Environment (Online/offline, see/hear/touch)	No preparation was required/done - all I had to do was be myself, or so I thought	We were sitting around a table near the canteen. Some empty chairs, bags. Breezy noon. Loud	This memory lives rent-free in only my head. Have not written or anything about it
Emotions (Different emotions and intensity)	Excited, Confident, Delighted, Nervous	Overwhelmed, Ashamed (10), Invisible, Uncomfortable	Lonely, Left Out, Down, Anxiety, Uncomfortable
Thoughts (What did you think and feel?)	I was obviously excited. Everything was a new experience for me, truth be told. Back in my country, making friends was easy for me. I just expected it to be the same here, I guess. And this group I approached seemed really cool. I wanted to get to know - I assumed they'd want to become friends with me. I was, of course, a bit nervous as I had to make an impression, right?	I was sitting there, and I remember feeling ashamed of myself - I still do. I was blaming myself and my upbringing. I found myself wishing I was born elsewhere or had studied in a better school or had better hobbies. I felt so uncool. And that got me thinking if I was unworthy of this opportunity to study here. Like am I even fit to? That's not a great feeling.	I felt like shit, immediately afterwards. I decided to not try make any friends here again. And then it was really difficult for me to digest that things were different here that in my country. I kept all of this to myself. I'm used to keeping my feelings bottled up. I don't want to be a burden. It is just who I am. At least now, I am aware of my low self-confidence. It took me time to get comfortable again and make friends here.
Actions (What did you say and do?)	I can still picture it vividly - I have nightmares about it. I grabbed some soup and simply walked towards them and sat down next to someone I had already introduced myself to	Honestly, I could barely keep up with the conversations. I had no idea what they were talking about - pop-culture references, bands, places they had travelled to, some jokes - I could not even relate to any of the stories from their school/bachelors, dating life, even their design talk. I just pretended to understand, smiled, nodded, ate my soup, hold on to my bag. I am sure people could see that I was clueless - at least the ones who seemed to notice me.	I told no one and cried myself to sleep that night. For a while, forget approaching, even talking to anyone became a herculean task for me. It was like this one thing had destroyed my confidence. Eventually, I did make new friends, but I don't know, I am always on edge in a way. But one thing is that now, I pay way more attention in group settings. I don't want anyone else to feel the way I did. It's really not a good feeling.
Highlights (What was/felt good? Gain)	Absolutely nothing was good about it. Maybe the only thing I can say is that it helped me realize that I attribute my self-worth to how others see me. But this took me a couple of months to like realize.		
Lowlights (Hurdles, pain points, to improve)	This whole experience left me with a bitter taste. I feel... felt like a loser. Like I'm the most uninteresting person on this side of the planet. When I think about it now, my expectations were not met. I am not used to not being kind of in the spotlight. And I really did not know what to say or contribute		

Mapping the Stages of a Group/Social Experience

"About more than a year ago, during my bachelors, there was this inter-college event. I participated in Extempore. I was really excited and a lot of people had trust and hope in me that I would do great. But even before I walked towards the podium, I lost my voice."

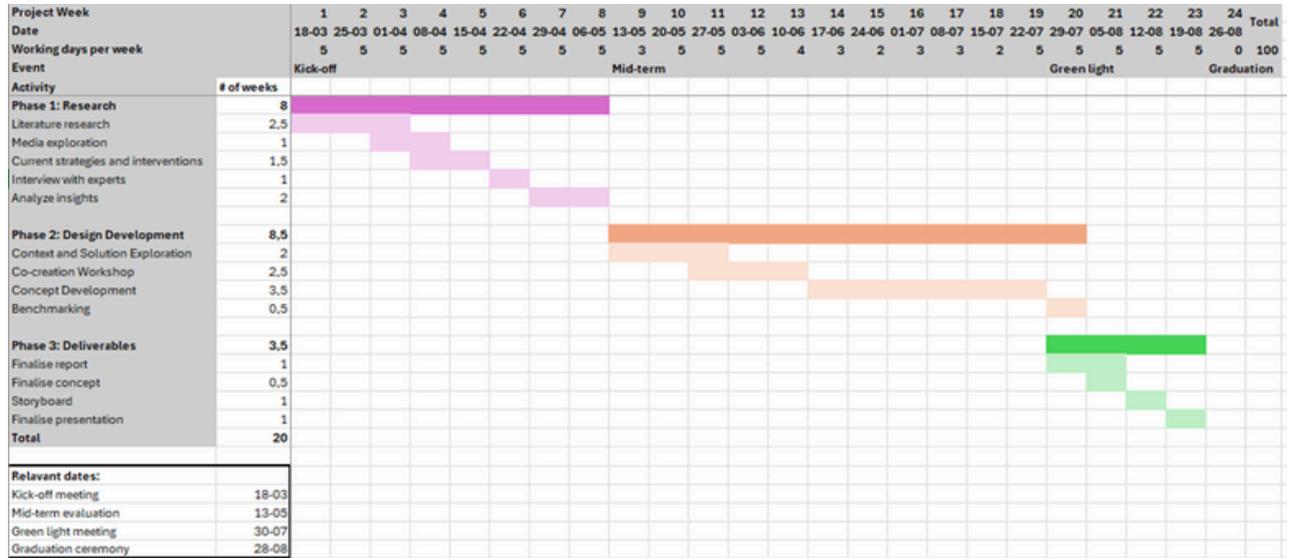|	Before	During	After
Time (When and how long?)	My college signed up 3 days before. We spent an hour every day practicing.	On a weekday morning. The whole event was for 2 hours, and my part was for 2 minutes	It has been so long since it happened, but this memory comes back every time I have to do any kind of public speaking
People (Who was involved/there?)	Me and 9 other classmates who were participating. One professor who trained us. My dad who was excited for me.	Other participating classmates, my professor, other people from other universities	Immediately after, discussed with the professor, who chewed me out. My dad who still motivated me, but I knew I let him down
Environment (Online/offline, see/hear/touch)	We practiced at the University, after classes.	Happened at another university. At a large hall/auditorium with a huge stage, podium, lot of chairs	I periodically recall this during other such events and during major presentations now. Especially when I do not have clarity about the content to talk
Emotions (Different emotions and intensity)	10 — Excited, Delighted, Optimistic, Confident (100), Cheerful, Happy, Special / 5	Uncomfortable, Anxiety, Overwhelmed, Ashamed, Stressed, Miserable, Sad, Upset, Confused	Ashamed, Uncomfortable, Embarrassed, Worried, Disappointed Down / 0
Thoughts (What did you think and feel?)	I had no negative emotions leading to it. My dad was excited too, encouraging me. My professor specifically asked me to join, so I felt special for the trust placed on me. I felt like she recognized some talent in me. I kept thinking - I have to win the first place, not even the runner-ups. That I will be first. There was no doubt in my head. I was cocky, I started believing that I am very skilled.	I obviously had to think on the to say something related to the topic. But my mind was a total blank. Before I could reach the podium, I was overwhelmed. I could feel myself letting everyone down, and all I kept thinking was I am disgrace for letting everyone down, and about how I would ever face everyone again. At that moment, I knew with conviction that I was a failure. I wished I could become invisible.	I still have no idea why I blanked - and this is a question I ask myself frequently. I was more upset and embarrassed about letting down my professor, university and especially dad down. They had high hopes for me, and I so easily let them down. For a long time, I started believing that I should never try to do public speaking again - that I have no skills. I felt very, very, very bad.
Actions (What did you say and do?)	I was focused, I practiced all the exercises vigorously during training, and when I would go back to my room. On the day of, the topic ('belief') was given to me 2 minutes before I had to go on stage, like everyone else. And we were not allowed to use our phones or discuss with anyone, obviously.	The longest 2 minutes of my life. I held on tight to the podium because my hands were trembling and I was sweating profusely. I tried looking at the crowd, but I was so uncomfortable that I started staring at some wall in the distance. I did not say a single word	As soon as I got off the stage, my professor yelled at me in front of everyone - salt to my wound. Later, when I told my dad, he continued to encourage me to keep trying, but I felt he was only hiding his disappointment to not hurt me further. For months I stopped participating in other similar activities, like debates or even group discussions. I was uncomfortable to talk in front of others too! But since then, I make sure that I have basic clarity at least about what I am expected to talk about. If not, I tend to shut down. Being prepared is what gives me confidence now
Highlights (What was/felt good? Gains)	Since the overall impact I made is all that matters in end, I will say that everything about this was pure misery. So, no highlights.		
Lowlights (Hurdles, pain points, to improve)	In a nutshell, letting people down was the worst part. I feel my confidence has drained, and it takes a lot of effort to try building it back. I still get thoughts about how I am not fit for anything. I disappointed my dad despite him hiding it, and I have vowed to never risk making him feel that way again		

Mapping the Stages of a Group/Social Experience

"Networking event at AULA that my friend invited me too. There was a mix of students and companies. I attended a couple of presentations with my friend. After that, we had to mingle with other, and this part wasn't so good."

	Before	During	After
Time (When and how long?)	Knew about event two months ago	A thursday evening. I was there for a couple of hours. Don't know how long others were there	I left halfway, I think. Replayed while walking back, and then for a while too
People (Who was involved/there?)	Did not discuss with anyone	So many people talking in groups. Recognized like 5 or 6 people. Found a friend to tagalong. Everyone looked so confident and professional. Some people were standing alone	Friend and I left together, talking about how much it sucked. It was nice to be on the same boat, but I feel he had a better time than me
Environment (Online/offline, see/hear/touch)	I picked a nice outfit. I looked into the companies I may want to connect with	Professional space, was quite cold and windy as hell. Some boring snacks, some drinks too. It was quite loud, maybe.	I called my best friend after going back to my room, and he kind of cheered me up momentarily.
Emotions (Different emotions and intensity)	10 — Excited, Nervous, Curious? / 5	Anxiety, Overwhelmed, Nervous, Disappointed, Relieved, Embarassed	Frustrated, Self-doubt, Proud, Disappointed, Confused / 0
Thoughts (What did you think and feel?)	I hoped I can make a good impression on others and do some networking. That this could be a great opportunity to learn more about working in the Netherlands. I was wondering if I am presentable and if companies would fine me interesting. I still felt quite optimistic.	I felt like I forgot how to have a conversation. I was way in my own head, getting mad at myself like it all felt too real, and I knew I had to make an impression but did not want to say the wrong thing, I think. I remember feeling like I was out of place. Like, did I even belong there? Was I smart enough? What if someone asked me something I should know about and I had no idea what they were talking about - I did not want to embarrass myself like that. I even felt like I did not belong at this University at some point, that's when I left	I initially kept asking myself when I became so awkward? If it was my, perhaps high expectations that made it so terrible. Or maybe if I had smart things to say or jokes, I would have been more interesting. I remember wishing I were taller so I could be seen. And then a few weeks ago, it kind of hit me that one of reasons was that I felt so vulnerable there, kind of naked. Like a baboon presenting itself, if that makes sense. Or maybe I am just blowing it way out of proportion - I tend to do that too
Actions (What did you say and do?)	Picked an outfit that I felt was professional and comfortable. Practiced how I would introduce myself in front of the mirror, though I think that made me more nervous though. Also, I barely slept the previous night.	We did join some groups of conversation, but I had no idea what to say. I did talk to some people, but it felt very brief, like surface level conversations. Even I was boring myself. My palms were so cold. My friend and I had a nice conversation though. We both felt awkward but he was good company. The vibe maybe. Felt so off and wrong	I tried to write the good things about it in my journal, but it only made me feel worse to relive it on paper. I still don't know if it was me like I did not try enough or if it was not my vibe - so I go from self-blame to self-pity. I still attend weekly faculty drinks - those are good though
Highlights (What was/felt good? Gains)	I had a nice conversation with a professor I admire, but have not worked with. At least I tried networking with different people in a new space, so A+ for effort. Thankful I had friend there, and glad I have friends who made me feel better		
Lowlights (Hurdles, pain points, to improve)	I was extremely nervous about approaching people, I felt boring and fake. This and my high expectations maybe had an impact? I don't know - like I manifested it. I also felt ignored and not valued to an extend. That made me doubt myself		

Appendix H

Combined participant outcomes to derive themes from co-creation sessions

	Before	During	After
Emotions (Different emotions and intensity)	10 Excited · Delighted · Optimistic · Confident (100) · Cheerful · Happy · Disappointed (12) · Uncomfortable · Excited · Motivated · Confident · Hangry · Anxiety · Overwhelmed · Ashamed · Shy · Excited · Focussed · Special · Afraid · Overwhelmed · Concerned · Anxiety · 5 · Stressed · Nervous · Nervous · Nervous · Annoyed · Nervous Eager · Delighted · Scared · Brave · Nervous · 0	Overwhelmed · Disappointed · Ashamed · Invisible · Stressed · Overwhelmed · Bored · Joy · Nervous · Appreciated · Overwhelmed · Okay · Engaged · Uncomfortable	Miserable · Sad · Upset · Uncomfortable · Guilty · Lonely · Relieved · Frustrated · Disappointed · Ashamed · Uncomfortable · Anxiety · Embarrassed · Disappointed · Down · Annoyed · Disappointed · Down · Worried · Overwhelmed · Left Out · Tired · Confused · Tired · Self-doubt · Uncomfortable · Lonely · Relieved · Relieved · Proud · Disappointed · Discouraged · Relieved · Relieved · Worried · Embarrassed · Confused
Thoughts (What did you think and feel?)			
Actions (What did you say and do?)			
Highlights (What was/felt good? Gains)			
Lowlights (hurdles, pain points, to improve)			

Appendix I
Gantt Chart

Project Week		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Total
Date		18-03	25-03	01-04	08-04	15-04	22-04	29-04	06-05	13-05	20-05	27-05	03-06	10-06	17-06	24-06	01-07	08-07	15-07	22-07	29-07	05-08	12-08	19-08	26-08	
Working days per week		5	5	5	5	5	5	5	5	3	5	5	5	4	3	2	3	3	2	5	5	5	5	5	0	100
Event		Kick-off								Mid-term											Green light				Graduation	
Activity	**# of weeks**																									
Phase 1: Research	8																									
Literature research	2,5																									
Media exploration	1																									
Current strategies and interventions	1,5																									
Interview with experts	1																									
Analyze insights	2																									
Phase 2: Design Development	8,5																									
Context and Solution Exploration	2																									
Co-creation Workshop	2,5																									
Concept Development	3,5																									
Benchmarking	0,5																									
Phase 3: Deliverables	3,5																									
Finalise report	1																									
Finalise concept	0,5																									
Storyboard	1																									
Finalise presentation	1																									
Total	20																									

Relevant dates:	
Kick-off meeting	18-03
Mid-term evaluation	13-05
Green light meeting	30-07
Graduation ceremony	28-08

Appendix J

Project Brief

DESIGN FOR our future

TUDelft

Personal Project Brief – IDE Master Graduation Project

Name student Ragavarshini Jawakaren

Student number 5,687,691

PROJECT TITLE, INTRODUCTION, PROBLEM DEFINITION and ASSIGNMENT
Complete all fields, keep information clear, specific and concise

Project title Improving emotional regulation in individuals with childhood trauma

Please state the title of your graduation project (above). Keep the title compact and simple. Do not use abbreviations. The remainder of this document allows you to define and clarify your graduation project.

Introduction

Describe the context of your project here; What is the domain in which your project takes place? Who are the main stakeholders and what interests are at stake? Describe the opportunities (and limitations) in this domain to better serve the stakeholder interests. (max 250 words)

Childhood trauma is harm or violence experiences by individuals under 18, that is physical, psychological or sexual. WHO estimates 1 billion children (50% of children population) face at least one traumatic event annually. In the Netherlands, around 119,000 cases are reported, representing 4% of its children. But, the actual figure is higher, as 9 out of 10 cases are unreported due to fear, shame, guilt or confusion. So, around 40% of children face trauma yearly. Common traumas reported in the Netherlands include emotional neglect, physical abuse, and sexual abuse. The repercussions is beyond the event, influencing lifelong health and well-being. It impacts mental and physical health, cognition, emotions, communication, and more. This is especially harmful as children's brain development and coping skills is still developing, resulting in challenges navigating difficulties, forming healthy relationships, regulating emotions, and managing stress in adulthood.

Hence, the project aims to explore the consequences of childhood trauma on young adults as they transition from adolescence to adulthood. During this period, they navigate trauma's effects while developing their identity, coping mechanisms, and interpersonal skills. Consequently, their ability to express and communicate emotions in daily life with themselves and others is affected. Therefore, the overarching goal is to tailor an intervention addressing and improving emotional regulation in individuals with childhood trauma.

Key stakeholders include individuals with childhood trauma, their support systems, mental health professionals, and non-profit organizations. There are opportunities to improve trauma survivors' well-being by addressing unmet emotional expression and communication needs. However, challenges include the complexities of accepting trauma (self- blame, diminish own experience), diverse impacts on emotional regulation (self-destructive behaviours, mood/personality disorders), and stigma surrounding mental health. Nevertheless, there is commitment to understand, empathize, and collaborate to make meaningful impacts for childhood trauma survivors.

Reference: 1.WHO (2022), Violence against children. 2.Dvir, et al. (2014), Childhood maltreatment, emotional dysregulation, and psychiatric comorbidities.

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introduction (continued): space for images

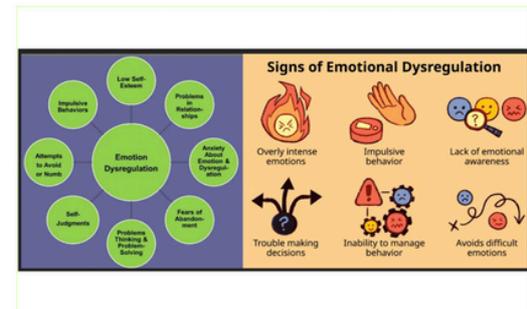image / figure 1   Global childhood trauma statistics

image / figure 2   Signs of emotional dysregulation

Project planning and key moments

*To make visible how you plan to spend your time, you must make a planning for the full project. You are advised to use a Gantt chart format to show the different phases of your project, deliverables you have in mind, meetings and in-between deadlines. Keep in mind that all activities should fit within the given run time of 100 working days. Your planning should include a **kick-off meeting, mid-term evaluation meeting, green light meeting** and **graduation ceremony**. Please indicate periods of part-time activities and/or periods of not spending time on your graduation project, if any (for instance because of holidays or parallel course activities).*

Make sure to attach the full plan to this project brief.
The four key moment dates must be filled in below

			In exceptional cases (part of) the Graduation Project may need to be scheduled part-time. Indicate here if such applies to your project	
Kick off meeting	18 Mar 2024			
			Part of project scheduled part-time	
Mid-term evaluation	13 May 2024		For how many project weeks	
			Number of project days per week	
Green light meeting	9 Jul 2024		Comments:	
Graduation ceremony	26 Aug 2024			

Motivation and personal ambitions

Explain why you wish to start this project, what competencies you want to prove or develop (e.g. competencies acquired in your MSc programme, electives, extra-curricular activities or other).

Optionally, describe whether you have some personal learning ambitions which you explicitly want to address in this project, on top of the learning objectives of the Graduation Project itself. You might think of e.g. acquiring in depth knowledge on a specific subject, broadening your competencies or experimenting with a specific tool or methodology. Personal learning ambitions are limited to a maximum number of five.
(200 words max)

My motivation for this project stems from my personal experience with trauma and emotional dysregulation, fueled by the alarming statistics on childhood trauma and its long-lasting impacts. Apart from the high number, the prevalence of unreported cases due to fear, and shame, deeply resonated with me. My personal ambitions are as follows:

1. I usually lean towards quantitative research, especially in group projects. Now, I have an opportunity to deepen my understanding of qualitative research methodologies, and gain practical experience.

2. I am struggling to find balance between SPD and DFI in this project, despite being an SPD student. This project is more DFI-focussed, and while I do enjoy it, I aim to consciously incorporate my SPD skills, which I have already created an approximate plan of in the approach.

3. To gain in-depth knowledge about strategies for coping with trauma and intense emotions, both for career development and for personal growth.

4. To improve my presentation skills and verbal communication, as it is important to effectively convey in more ways than just on paper.

5. Time management.

Problem Definition

What problem do you want to solve in the context described in the introduction, and within the available time frame of 100 working days? (= Master Graduation Project of 30 EC). What opportunities do you see to create added value for the described stakeholders? Substantiate your choice.
(max 200 words)

Issues addressed: Emotional regulation is the ability to manage and control one's emotions effectively in various situations. Emotional dysregulation is difficulty in managing or modulating emotional responses, seen as erratic mood swings, impulsivity, avoidance, and inability to express emotions appropriately, as illustrated in Figure 2. This further impacts self-esteem and interpersonal dynamics. The focus on challenges in expressing and communicating emotions for survivors of childhood trauma is crucial as it has a direct impact of misunderstandings, conflicts, and feelings of isolation. As a result, they need to be equipped to navigate these challenges with emotional regulation, in their daily interactions with themselves and others. By addressing these challenges, the intervention aims to facilitate healthier relationships, with oneself and others.

Scope: The project focuses on young adults in the Netherlands, aged 13 to 30, who have experienced childhood trauma. This age group is significant as people are expected to take up independent and societal roles. At the same time, this period is also critical for brain development and acquiring coping skills.

Objective: Design and development of an intervention aimed at improving the emotional regulation and well-being of individuals coping with childhood trauma by addressing the unique challenges faced by trauma survivors after their trauma, in their daily lives.

Assignment

This is the most important part of the project brief because it will give a clear direction of what you are heading for.
Formulate an assignment to yourself regarding what you expect to deliver as result at the end of your project. (1 sentence)
As you graduate as an industrial design engineer, your assignment will start with a verb (Design/Investigate/Validate/Create), and you may use the green text format:

Design an intervention to improve the expression and communication of emotions for individuals with childhood trauma in their daily lives.

Then explain your project approach to carrying out your graduation project and what research and design methods you plan to use to generate your design solution (max 150 words)

The project unfolds in three phases: research, design development, and implementation strategy. The research phase begins with a literature review, followed by interviews and diary probes conducted with trauma survivors and healthcare providers (and maybe caregivers). This aims to understand the nuances of emotional dysregulation in childhood trauma survivors, identify gaps in current strategies, gain diverse perspectives, and ensure alignment of the intervention with the needs and objectives of all key stakeholders. Journey mapping will visualize individuals' emotions, reactions, and needs throughout their daily experiences. This will guide and set boundaries for the intervention's design.

In the design development phase, insights from the research phase will be integrated to ensure the stakeholders' needs are met. The intervention will be assessed for usability, effectiveness, and inclusivity across various forms of emotional dysregulation and traumas. This will be tested through a combination of observations, surveys, interviews, and/or measures for emotional regulation.

During the implementation strategy phase, potential organizations that can support the intervention implementation will be identified. Risk assessment, using risk matrix, will address potential challenges of the intervention. Proactively identifying risks aims to maximize the intervention's impact.