

Appendices

Dear Future: A Meaning-Focused Coping
Game to Empower Youth Experiencing
Eco-Anxiety

Appendix 01

Data researcher's introspection

28/02/2024: *Listening to a podcast while being in the train*

"Two months before my project about eco-anxiety started, I decided to listen to a podcast about this topic, to get some inspiration. It was Saturday morning and I was on my way to my family for a weekend trip. I was sitting in the train and played the first episode of the podcast. What I didn't know was that the first episode was about how hopeless our future looks like. Normally, I would not listen to such a heavy topic, just before a fun weekend trip. But in this case I did not know what the podcast was going to be about.

So, through my earpods, a scientist was talking about the rise of the waterheight. I did not like to hear about it, but it was information I already knew. Then he was talking about something that was new to me: there are certain gasses hidden in icebergs and the moment when the ice melts, these gasses reach the atmosphere and the global heath will suddenly rise dramatically. It's like a tipping point.

This information scared me and made me feel sad. Because it means that the condition of earth is not changing gradually, but it will change suddenly very fast. My whole life can change negatively soon. But I don't know when. When I had this realization, I felt frustrated and sad. I was sitting in the train, very conscious that I was there. I looked at the other people in the train and I thought: "you are just sitting there, having no idea what is going to happen". I really felt alone in this panicking moment, which is actually weird, because climate change affects us all, also the other people in the train. But I felt like I was the only one worrying in that room.

After a while I stopped playing the podcast. And not because I was too upset, but just because I felt like doing another activity, like listening to music. The sad feeling slowly faded away and I slowly got back to the world I recognize and I

feel comfortable living in. I think I am most afraid to lose this comfort in life."

26/03/2024: *In conversation with a climate psychologist*

I just finished the conversation with a climate psychologist. I feel inspired, and I really feel like telling about this conversation to some friends who are also worried about climate change.

At the beginning of the conversation, I thought: "is my eco-anxiety actually high enough to have a conversation about it with a climate psychologist?". This feeling faded away during the conversation, because he acknowledged my negative emotions about eco-anxiety. At the end of the conversation I told him this. Then he said: most people don't point out their feelings as eco-anxiety. I think it is sometimes hard to acknowledge your own distress.

Because of the conversation, I feel inspired to look at my worries with a different perspective. The climate psychologist told me it is okay to worry. He made me realize I don't always feel the space to express my worries or other negative emotions. Very often I feel like people will judge me like "oh there is the climate activist again". Sometimes people even sigh. I know it is not good to blame others' behavior, but on the other hand, now I am saying nothing, while my frustration increases. That is also not fair, right?

He also said it is sometimes good to accept awkwardness. It can be awkward to start a conversation about my worries regarding climate change. Maybe I blame others, or maybe I make others feel sad. According to him I should accept that life can be awkward sometimes. Nowadays, maybe we are too used to an easy comfort life without awkwardness or confrontation. I felt motivated to try this soon.

I found explanations of values I did not know how to explain before. Just by telling

someone about it, I learned more about myself. I was saying that I am afraid that social injustice will increase in the future and that poor people will be more affected than me. I feel sad for these people, and I also realized I feel guilty for being so privileged. I don't like this feeling. And this feeling will probably increase in the future due to climate change.

I also feel less alone in this climate issue. The moment when I explained a frustrated moment about the climate issue, he said "yes! I experienced exactly the same!". I felt relieved. I knew he really understood me and I felt at ease.

Appendix 02

Consent form context mapping sessions with youth

Are you interested in taking part in the research project “Designing for eco-anxiety among youth”?

Dear Participant,

You are being invited to participate in a research study conducted by Isa Jorritsma, in collaboration with Delft University of Technology (TU Delft) and the Ministry of Health, Welfare and Sport. Before you decide whether or not to participate, it is important for you to understand why the research is being done and what your participation will involve. Please take the time to read the following information carefully. Feel free to ask any questions about the study.

Purpose of the Study:

The purpose of this study is to design an intervention that helps Dutch youth (aged 15 – 21) who are experiencing eco-anxiety, to cope with their negative emotions related to climate change in their daily life. Therefore, I would like to research in what way youth experience eco-anxiety and which coping strategies could be integrated in their daily life.

Procedures:

The study consists of two parts: (1) to physically join a brainstorm session of 60-90 minutes [which will take place on *date, location*]. During this session, you will be asked to explain your experience with eco-anxiety by performing a creative assignment. (2) Prior to the brainstorm session, you will be asked to perform an assignment of 5-10 minutes each day, for five days long. These assignments will be sent to your phone number.

Voluntary Participation and Withdrawal:

Your participation in this study is entirely voluntary. You are allowed to withdraw and leave the whole study at any time you want, without having to give a reason. There will be no negative consequences for you if you choose not to participate or later decide to withdraw. When you choose to leave the study, we will delete all your unsubmitted data unless you tell us that we can keep them.

Potential Risks:

In this research you will be asked to reflect on your emotions regarding climate change. Participation in this research might evoke negative feelings and emotions. To ensure your comfort, you'll have the opportunity to select a location where you feel relaxed, the option to have someone accompany you during the session, and the freedom to decline answering any question or to end the session at any time.

How your personal data will be stored and used

Only the Researcher will have access to your direct personal data, like your name, your contact information and where you live. Your direct personal data will not be disclosed in any reports or publications resulting from this study. The project will be finished in July 2024, and all personal data will be destroyed within 100 days.

Taking Pictures and Audio Recordings:

During the course of this study, the researcher might take pictures, on which you will be unrecognizable, only if you give consent. The researcher records audio for research purposes, only if you give consent.

Research Output

The research output will be showcased in a public presentation and in the online repository of TU Delft and it includes an analysis of your responses, input and pictures of the work provided by you during the assignments and the sessions. When this output contains sensitive personal data, it will be de-identified research output. Your responses might be anonymously quoted.

Compensation:

You will receive compensation for participating in this research study, in the form of a €25 gift card. Travel expenses can be reimbursed upon declaration.

Contact Information:

If you have any questions about the study or your rights as a participant, contact:

Isa Jorritsma
Delft University of Technology

Thank you for considering participation in this study.

Best,

Isa Jorritsma

Consent form

PLEASE TICK THE APPROPRIATE BOXES	Yes	No
1. I have read and understood the study information dated [DD/MM/YYYY], or it has been read to me. I have been able to ask questions about the study and my questions have been answered to my satisfaction.	<input type="checkbox"/>	<input type="checkbox"/>
2. I consent voluntarily to be a participant in this study and understand that I can refuse to answer questions and I can withdraw from the study at any time, without having to give a reason.	<input type="checkbox"/>	<input type="checkbox"/>
3. I consent that audio recordings will be made, which will only be used for analyzing purposes.	<input type="checkbox"/>	<input type="checkbox"/>
4. I consent that pictures will be made in which I will not be recognized, which will be used in research outputs.	<input type="checkbox"/>	<input type="checkbox"/>
5. I agree that my responses, views or other input can be quoted anonymously in research outputs	<input type="checkbox"/>	<input type="checkbox"/>
6. I consent that work provided by me (written text, pictures, drawings) can be used in research outputs, in which sensitive data will be de-identified.	<input type="checkbox"/>	<input type="checkbox"/>
7. I understand that my travel expenses will be compensated and I will be rewarded with a gift voucher of €25.	<input type="checkbox"/>	<input type="checkbox"/>

Signatures		
_____ Name of participant	_____ Signature	_____ Date
I, as researcher, have accurately read out the information sheet to the potential participant and, to the best of my ability, ensured that the participant understands to what they are freely consenting.		
_____ Researcher name	_____ Signature	_____ Date

Appendix 03

Research script (Dutch)

Script Generative Session

Duur: max 1,5 uur

Materialen:

- 3 werkvellen (A3)
- Icoontjes
- Dixit-kaarten
- 2 kleuren stiften (negatief vs positief)
- Geprinte ervaring
- Geprinte context mapping foto's
- Geprinte consent forms
- Dit script geprint

Introductie (15 min)

1. Welkom

- Koffie/thee/water

2. Uitleg studie

- Doel onderzoek: mijn hoofddoel is om een interventie te ontwerpen voor jongeren met klimaatzorgen, zodat ze beter met deze negatieve emoties over klimaatverandering om kunnen gaan. In deze sessie wil ik jouw zorgen over klimaatverandering beter begrijpen.
- Om deel te mogen nemen aan dit onderzoek, heb ik jouw toestemming nodig. In dit formulier staat het onderzoek uitgelegd en er wordt uitgelegd waarvoor je tekent.
- Geef tijd om rustig door te lezen.
- Neem de volgende punten extra goed door:
 - *Procedures*
 - *Altijd stoppen, een vraag niet beantwoorden*
 - *We gaan reflecteren op je emoties, dus mocht je dit niet fijn vinden of je slecht voelen, laat het weten.*
 - *Al jouw persoonlijke data heb ik alleen toegang toe, en wordt verwijderd na dit project. Verder wordt alles wat je zegt anoniem opgeschreven.*
 - *Mag ik foto's maken? Je gezicht komt niet in beeld. Ik maak dus bijvoorbeeld foto's van je handen, of je rug.*
 - *Mag ik je stem opnemen?*
 - *Je krijgt een cadeaukaart. Heb je reiskosten gemaakt?*
- Begin met opnemen.

Het dagelijks leven (15 min)

3. Hoe ziet een dag in jouw leven eruit?

- Je mag de foto's gebruiken die je gestuurd hebt.
- Op welke momenten op zo'n dag ben jij bezig met duurzaamheid? En heb je specifieke momenten op een dag dat je vaker zorgen maakt?

Tijdlijn ervaring (40 min)

4. Omschrijf jouw ervaring (20 min)

- Leg de ervaring in het midden.
- Ik heb hier een stapel met verschillende afbeeldingen. Welke afbeelding geeft het best weer hoe je je toen voelde op dat moment?
- Wat gebeurde er vlak voordat je dit gevoel kreeg? Wie of wat was de aanleiding?
- Wat gebeurde er vlak nadat je dit gevoel kreeg? Hoe ging het weg? Hoe snel ging het weg? Wat waren je gedachten erover? Was er iemand anders bij betrokken?
- Wat gebeurde er een hele tijd later? Dacht je er nog eens terug aan? Heb je bepaalde keuzes gemaakt gebaseerd op deze gebeurtenis?

(weglopen - 5 min)

5. Hoe had jouw ervaring kunnen veranderen? (20 min)

- Wat had dit gevoel kunnen veranderen?
- Ervoor: was er iets of iemand die jouw gevoel had kunnen verbeteren? Of misschien zelfs had kunnen verslechteren? "Wat had deze persoon kunnen doen om je beter/slechter te voelen?"
- Tijdens: was er iets of iemand die jouw gevoel had kunnen verbeteren? Of misschien zelfs had kunnen verslechteren?
- Erna: was er iets of iemand die jouw gevoel had kunnen verbeteren? Of misschien zelfs had kunnen verslechteren?

Waarom? (15 min)

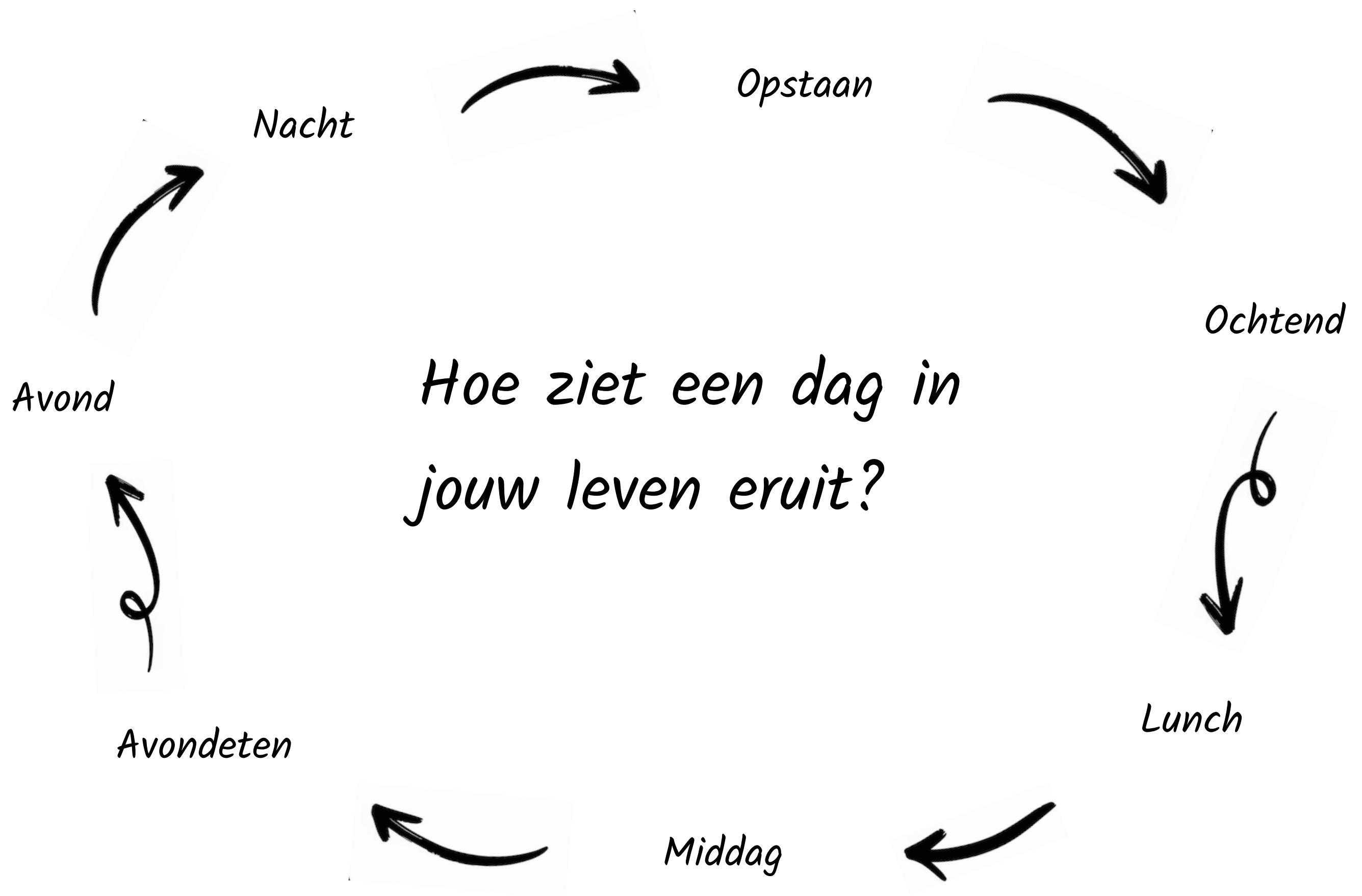
- Waarom vind je deze gebeurtenis zo erg?
- Waarom maak je je zorgen?
- Wat gaat er dan gebeuren in de toekomst?
- Wat ga jij verliezen?
- Waar ben jij het meest bang voor om te verliezen?

Wens (5 min)

- Dixit kaartjes: wanneer je je weer eens in zo'n soort situatie zou bevinden, hoe zou je je willen voelen over het klimaatprobleem?

Appendix 04

Worksheets generative session



Tijdlijn

*Hoe kan je
jouw ervaring
het best
uitbeelden?*

Voorafgaand

Op het moment

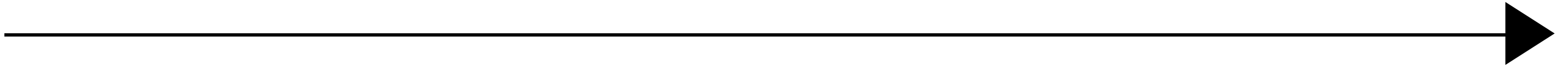
Vlak erna

Later

*Jouw
ervaring*

De toekomst

*Jouw
ervaring*



Appendix 05

Consent form user test

Are you interested in taking part in the research project “Designing for eco-anxiety among youth”?

Dear Participant,

You are being invited to participate in a user test study conducted by Isa Jorritsma, in collaboration with Delft University of Technology (TU Delft) and the Ministry of Health, Welfare and Sport. Before you decide whether or not to participate, it is important for you to understand why the research is being done and what your participation will involve. Please take the time to read the following information carefully. Feel free to ask any questions about the study.

Purpose of the Study:

The main purpose of this study is to design an intervention that helps Dutch youth (aged 15 – 21) who are experiencing eco-anxiety, to cope with their negative emotions related to climate change in their daily life. The purpose of this user test is to gather feedback and insights on a prototype. Your participation will help me improve the product to better meet the needs of youth who experience eco-anxiety.

Procedures:

Participation in this study is expected to take approximately 45 minutes to complete. It involves three activities:

1. You will be asked to go through some information about climate change, provided by the researcher.
2. You will be asked to interact with the prototype.
3. The researcher will ask some follow-up questions about your experience.

Voluntary Participation and Withdrawal:

Your participation in this study is entirely voluntary. You are allowed to withdraw and leave the whole study at any time you want, without having to give a reason. There will be no negative consequences for you if you choose not to participate or later decide to withdraw. When you choose to leave the study, we will delete all your unsubmitted data unless you tell us that we can keep them.

Potential Risks:

In this research you will be asked to reflect on your emotions regarding climate change. Participation in this research might evoke negative feelings and emotions. To ensure your comfort, you'll have the opportunity to select a location where you feel relaxed, the option to have someone accompany you during the session, and the freedom to decline answering any question or to end the session at any time.

How your personal data will be stored and used

Only the Researcher will have access to your direct personal data, like your name, your contact information and where you live. Your direct personal data will not be disclosed in any reports or publications resulting from this study. The project will be finished in July 2024, and all personal data will be destroyed within 100 days.

Taking Pictures and Audio Recordings:

During the course of this study, the researcher might take pictures, on which you will be unrecognizable, only if you give consent. The researcher records audio for research purposes, only if you give consent.

Research Output

The research output will be showcased in a public presentation and in the online repository of TU Delft and it includes an analysis of your responses, input and pictures of the work provided by you during the test. When this output contains sensitive personal data, it will be de-identified research output. Your responses might be anonymously quoted.

Compensation:

You will receive compensation for participating in this research study, in the form of a €25 gift card. Travel expenses can be reimbursed upon declaration.

Contact Information:

If you have any questions about the study or your rights as a participant, contact:

Isa Jorritsma
Delft University of Technology

Thank you for considering participation in this study.

Best,

Isa Jorritsma

Consent form

PLEASE TICK THE APPROPRIATE BOXES	Yes	No
1. I have read and understood the study information dated [DD/MM/YYYY], or it has been read to me. I have been able to ask questions about the study and my questions have been answered to my satisfaction.	<input type="checkbox"/>	<input type="checkbox"/>
2. I consent voluntarily to be a participant in this study and understand that I can refuse to answer questions and I can withdraw from the study at any time, without having to give a reason.	<input type="checkbox"/>	<input type="checkbox"/>
3. I consent that audio recordings will be made, which will only be used for analyzing purposes.	<input type="checkbox"/>	<input type="checkbox"/>
4. I consent that pictures will be made in which I will not be recognized, which will be used in research outputs.	<input type="checkbox"/>	<input type="checkbox"/>
5. I agree that my responses, views or other input can be quoted anonymously in research outputs.	<input type="checkbox"/>	<input type="checkbox"/>
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7. I understand that my travel expenses will be compensated and I will be rewarded with a gift voucher of €25.	<input type="checkbox"/>	<input type="checkbox"/>

Signatures

Name of participant

Signature

Date

I, as researcher, have accurately read out the information sheet to the potential participant and, to the best of my ability, ensured that the participant understands to what they are freely consenting.

Researcher name

Signature

Date

Initial project brief

Personal Project Brief – IDE Master Graduation Project

Name student **Isa Jorritsma**

Student number

PROJECT TITLE, INTRODUCTION, PROBLEM DEFINITION and ASSIGNMENT

Complete all fields, keep information clear, specific and concise

Project title **Designing for eco-anxiety among youth**

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)

This project aims to help youth to cope with eco-anxiety: 'the distress caused by climate change where people are becoming anxious about their future' (Coffey *et al.* 2021, p. 1). Climate change is recognized as one of the most significant global health threats of the 21st century, including the impact on mental health (Coffey *et al.* 2021).

The focus of the project lies particularly on youth aged 15-24, because this is one of the most vulnerable groups to experience eco-anxiety (Krieg & Toivanen, 2021). Recent research by Ipsos (2023) reveals that 1 in 5 young individuals in the Netherlands experience stress when they think about the climate.

Image 1 shows the onion model (Alexander & Robertson, 2004) with the key stakeholders who are involved in this project. The project's client is the Dutch Ministry of Health, Welfare and Sport, whose main objective is to provide a healthy well-being for every Dutch citizen, including mental health, as written in their approach "Mentale gezondheid: van ons allemaal". Given that eco-anxiety involves concerns related to climate issues, the Ministry of Economic Affairs and Climate Policy is involved as well. This also applies for the Ministry of Education, Culture and Science, because a significant part of the target group is pursuing education. These three Ministries are in contact with several youth organizations, who represent youth while advising Ministries about policy making, such as mental well-being and climate issues.

Stakeholders that are directly involved in the context of the target group are on the one hand psychologists, who are specialized in treating young individuals with anxieties. Additionally, peers, parents and teachers play an important role regarding eco-anxiety among youth. Young people expressing eco-anxiety often point out the desire for more understanding from the social groups around them (Pihkala, 2020). Therefore, it might be an opportunity to include peers, parents and/or teachers in the final design.

Personal Project Brief – IDE Master Graduation Project

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)*

Eco-anxiety is caused by both social dynamics and geophysical changes in the environment (Norgaard, 2011, as cited in Pihkala, 2020), resulting in individuals having limited control over its causes. When individuals struggle to manage their eco-anxiety, it might start to interfere with a person's capacity to sleep, work or socialize, which will affect psychological well-being (Clayton, 2020).

Since global ecological issues cannot be solved in the near future, there is a need for skills living with anxieties and distress (Pihkala, 2020). While psychologists are able to guide people through anxieties and distress, the pressure on mental healthcare is significant, leading to extensive waiting times (Inspectie Gezondheidszorg en Jeugd, 2023). Therefore, it is important that young people are able to address negative emotions in daily life, even without the direct involvement of psychologists. Given the variety of emotion-regulation interventions in people's everyday lives (Slovak *et al.*, 2023), design holds the potential to promote the ability to live with anxieties as a basic human skill. Not many interventions are known that help young individuals in managing emotions specifically related to eco-anxiety. Hence, my objective is to design an intervention aimed at helping youth to cope with eco-anxiety during their daily life.

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 that helps youth who are experiencing eco-anxiety, to cope with their negative emotions related to climate change in their daily life.

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)

My project will consist of three phases. The main methods will be the Double Diamond (the process of diverging and converging) and Research through Design (generating knowledge by testing prototypes).

1. Framing the system and defining the problem. I will do a literature review, interviews with experts and context mapping sessions with the target group. Moreover, I will make use of GIGA-mapping to map all the actors within the system (diverging). With these insights, I will generate first ideas and I will reflect on them by doing co-reflections with the target group. The result of this phase will be one chosen design direction (converging) and will be presented during the mid-term.
2. Ideation and testing. I will develop multiple prototypes (diverging) related to my chosen design direction and I will test these with the target group and other actors who are involved. The result of this phase will be a final concept idea (converging).
3. Developing. I will elaborate the concept idea into a final design and validate it again with the target group and/or experts. My final design might, for example, result in an application to find climate action activities, a conversation tool between child-parent, or a platform to meet peers who also experience eco-anxiety.

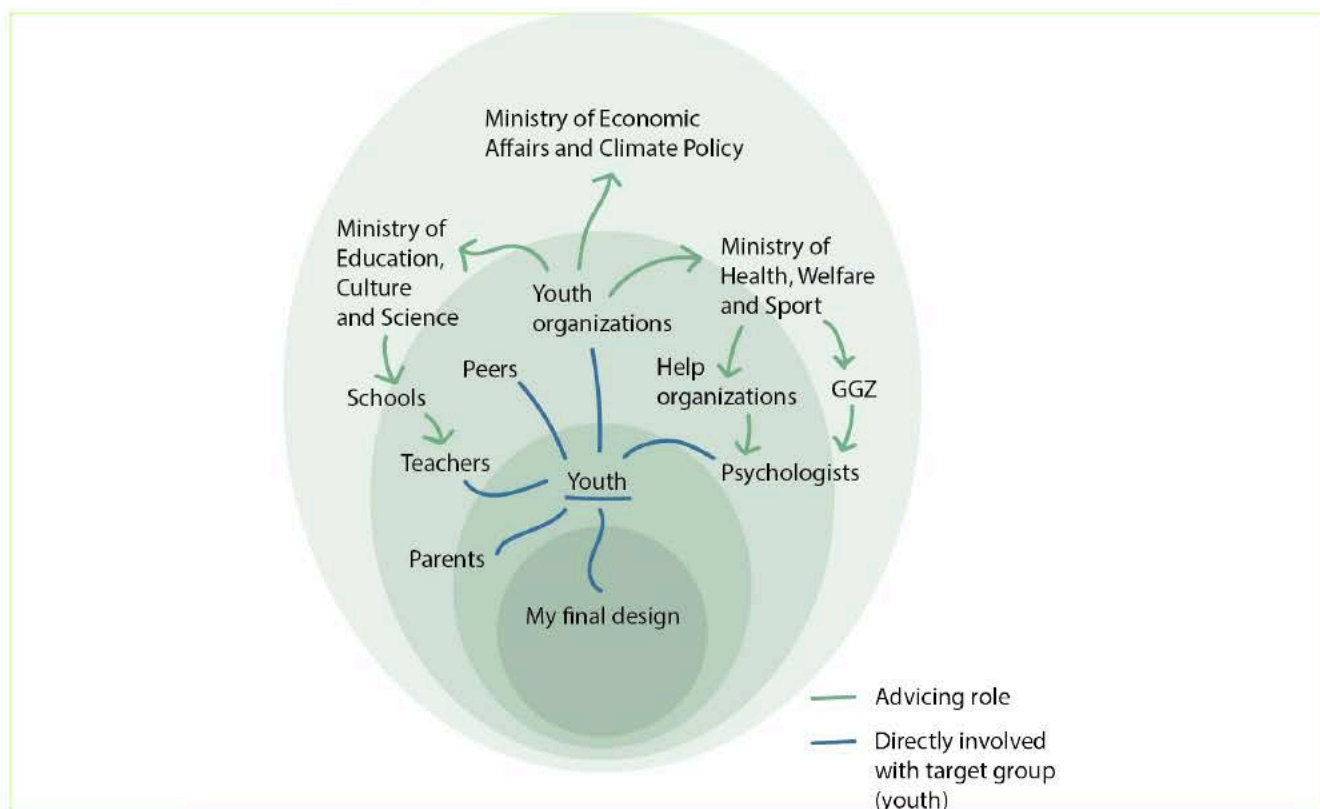


image / figure 1 *The onion model illustrates the main stakeholders involved in the final design.*

image / figure 2

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

Kick off meeting	15 feb 2024
Mid-term evaluation	10 apr 2024
Green light meeting	10 juni 2024
Graduation ceremony	5 juli 2024

In exceptional cases (part of) the Graduation Project may need to be scheduled part-time. Indicate here if such applies to your project

Part of project scheduled part-time	<input type="checkbox"/>
For how many project weeks	<input type="text"/>
Number of project days per week	<input type="text"/>

Comments:

click to add date

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)

I would like to start this project because I am personally very engaged with climate change issues. I find climate stress to be an interesting way to contribute to the climate problem, because it not only addresses sustainability but also mental health. During this project, I want to learn more about designing for mental health. Additionally, I want to experience what it's like to work on a project for the ministry. The next semester, I would like to show that I am an independent designer who can take control of project management and implement the right design methods, leading to a desired outcome.